

98-02-08 Textron Lycoming: Amendment 39-10291. Docket 94-ANE-44.

Applicability: Textron Lycoming 320 series limited to 160 horsepower, and 360 series, four cylinder reciprocating engines with fixed pitch propellers; except for the following installed in helicopters or with solid crankshafts: HO-360 series, HIO-360 series, LHIO-360 series, VO-360 series, and IVO-360 series, and Models O-320-B2C, O-360-J2A, AEIO-360-B4A, O-360-A4A, -A4G, -A4J, -A4K, -A4M, and -C4F. In addition, engines with crankshafts containing "PID" stamped on the outside diameter of the propeller flange are exempt from the inspection requirements of this AD. The affected engines are installed on but not limited to reciprocating engine powered aircraft manufactured by Cessna, Piper, Beech, American Aircraft Corporation, Grumman American Aviation, Mooney, Augustair Inc., Maule Aerospace Technology Corporation, Great Lakes Aircraft Co., and Commander Aircraft Co.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent crankshaft failure, which can result in engine failure, propeller separation, forced landing, and possible damage to the aircraft, accomplish the following:

(a) For engines shipped new from Textron Lycoming prior to and including December 31, 1984, and that have never been overhauled, or any engine remanufactured or overhauled and that has accumulated 1,000 hours or more time in service (TIS) since remanufacture or overhaul, visually inspect the inside diameter (ID) of the crankshaft for corrosion pits within the next 100 hours TIS after the effective date of this AD, or 6 months after the effective date of this AD, whichever occurs first, in accordance with Textron Lycoming Mandatory Service Bulletin (MSB) No. 505B, dated December 1, 1997.

(1) If corrosion pits are found during this inspection, prior to further flight, accomplish the following:

(i) If the crankshaft is installed in the engine such as during an on-wing inspection, perform a fluorescent penetrant inspection (FPI) in accordance with Textron Lycoming MSB No. 505B, dated December 1, 1997.

(ii) If the crankshaft is removed from the engine at overhaul, perform a magnetic particle inspection (MPI) in accordance with Textron Lycoming MSB No. 505B, dated December 1, 1997.

(2) Within 48 hours after these inspections, report the finding of the inspection in accordance with paragraph (e) of this AD.

(b) For engines shipped new from Textron Lycoming after December 31, 1984, and that have never been overhauled, or any engine remanufactured or overhauled and that has accumulated less than 1,000 hours TIS since remanufacture or overhaul, visually inspect the ID of the crankshaft for corrosion pits, at the earliest occurrence of any event

specified in subparagraph (3) of this paragraph, and in accordance with Textron Lycoming MSB No. 505B, dated December 1, 1997.

(1) If corrosion pits are found during this inspection, prior to further flight perform an FPI or MPI in accordance with Textron Lycoming MSB No. 505B, dated December 1, 1997.

(2) Within 48 hours after these inspections, report the finding of the inspection in accordance with paragraph (e) of this AD.

(3) Visually inspect the ID of the crankshaft for corrosion pits at the earliest of the following:

(i) The next engine overhaul or disassembly.

(ii) Within 10 years of the original shipping date or 6 months from the effective date of this AD, whichever occurs later.

(iii) Within 1,000 hours TIS since remanufacture or overhaul, or 6 months from the effective date of this AD, whichever occurs later.

(c) Thereafter, if no corrosion pits or cracks are found on the ID of the crankshaft during the initial visual inspection, perform a visual inspection at intervals not to exceed 5 years since last inspection, or at the next engine overhaul or disassembly, whichever occurs first, in accordance with Textron Lycoming MSB No. 505B, dated December 1, 1997. If corrosion pits but no cracks are found on the ID of the crankshaft during the initial visual inspection and the ID does not exceed the maximum ID specified in Textron Lycoming MSB No. 505B, dated December 1, 1997, repeat the FPI at intervals not to exceed 100 hours TIS since last FPI or until a serviceable crankshaft is installed in the engine.

(d) Prior to further flight, remove from service and replace with a serviceable part any crankshaft found cracked during FPI or MPI performed in accordance with Textron Lycoming MSB No. 505B, dated December 1, 1997.

(e) After accomplishing the initial visual inspection and, if necessary, the FPI or MPI, required by this AD, complete Appendix 1 of this AD and submit to the Manager, New York Aircraft Certification Office, FAA, Engine and Propeller Directorate, 10 Fifth St., Valley Stream, NY 11581; fax (516) 568-2716. Reporting requirements have been approved by the Office of Management and Budget and assigned OMB control number 2120-0056.

(f) The application of Urethabond 104 to the inner bore of the crankshaft and confirmed by stamping of the letters "PID" on the outside diameter of the propeller flange in accordance with Textron Lycoming MSB No. 530, dated December 1, 1997, constitutes terminating action to the inspection requirements of this AD.

(g) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, New York Aircraft Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, New York Aircraft Certification Office.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the New York Aircraft Certification Office.

(h) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(i) The actions required by this AD shall be done in accordance with the following Textron Lycoming MSB:

Document No.	Pages	Date
<u>505B</u>	1-5	December 1, 1997
Total Pages: 5		
<u>530</u>	1-2	December 1, 1997
Total Pages: 2		

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Textron Lycoming, 652 Oliver St., Williamsport, PA 17701; telephone (717) 327-7080, fax (717) 327-7100. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC.

(j) This amendment becomes effective on March 30, 1998.

Appendix 1

TEXTRON LYCOMING CRANKSHAFT INSPECTION SURVEY AD DOCKET NO. 94-ANE-44

Date of Inspection _____ Inspector's Information
 Name _____
 Address _____
 State _____ Zip Code _____
 Telephone No. _____ Facsimile No. _____
 Engine Model Number _____
 Engine Serial Number (S/N) _____
 Date of Manufacture _____ (M/D/YR) Total Time (TT) _____ hrs
 Time Since Major Overhaul (SMOH) _____ hrs
 Crankshaft Part Number (located on prop flange) _____
 S/N _____
 Aircraft Make and Model _____

Frequency of Flights _____ per month (average)
 Duration _____ hrs per Flight
 How was aircraft being utilized? ___ Training, ___ Personal, ___ Banner Towing,
 ___ Glider Towing, ___ Agricultural, Other (please explain) _____

Propeller Make and Model _____

Has the aircraft ever experienced a propeller strike during service? ___ Yes ___ No

Was propeller ever removed for servicing or overhaul? _____ Yes _____ No
If yes, describe reason for removal in detail?

What was the condition of the crankshaft internal bore?

Corroded _____ Yes _____ No If corroded, how many pits? _____ 1 to 5, _____ 6 to 10,
_____ More than 10

Was a crack found? _____ Yes _____ No If crack was found, complete the following:
_____ Distance from crankshaft end (Inches) _____ Crack Length (Inches)

COMMENTS:
