



CIVIL AVIATION AUTHORITY
CZECH REPUBLIC
Airworthiness Division

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AIRWORTHINESS DIRECTIVE

Number: CAA-AD-039/2004

Date of issue: April 27, 2004

Engine Components Incorporated (ECi)
Teledyne Continental Motors model 520,
550

ENGINE – CYLINDER HEAD – INSPECTION/REPLACEMENT

Applicability: This AD applies to Teledyne Continental Motors (TCM) TSIO- 520-NB, -VB, and -WB engines that are modified by supplemental type certificate (STC) SE4327SW, STC SE09104SC, or STC SE09261SC for operation at 325 HP or greater, (the so-called RAM TSIO-520-NB, -VB, or -WB Series III, IV, and VII reciprocating engines; and Teledyne Continental Motors (TCM) model 520 and 550 series reciprocating engines with certain ECi reciprocating engine cylinders, part number (P/N) AEC631397, installed. These engines are installed on, but not limited to the airplanes listed in Table 1 of FAA AD 2004-08-10.

Effective date: June 10, 2004

Compliance: Required as indicated in FAA AD 2004-08-10.

Remarks: The compliance of this AD must be recorded in Engine Logbook, where applicable the requirements of this AD must be integrated into Aircraft Technical Documentation. Address inquiries concerning this AD to: Civil Aviation Authority, Airworthiness Division, Ruzyně Airport, 160 08 Prague 6, Czech Republic, tel: 420 233320922, fax: 420 220562270.

Ing. Pavel MATOUŠEK
director

2004-08-10 Engine Components Incorporated (ECi): Amendment 39-13579. Docket No. 2004-NE-07-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective May 5, 2004.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Teledyne Continental Motors (TCM) TSIO- 520-NB, -VB, and -WB engines that are modified by supplemental type certificate (STC) SE4327SW, STC SE09104SC, or STC SE09261SC for operation at 325 HP or greater, (the so-called RAM TSIO-520-NB, -VB, or -WB Series III, IV, and VII reciprocating engines; and Teledyne Continental Motors (TCM) model 520 and 550 series reciprocating engines with certain ECi reciprocating engine cylinders, part number (P/N) AEC631397, installed. These engines are installed on, but not limited to the airplanes listed in the following Table 1:

Table 1.--List of Airplanes That Use the Affected Engines

Airplane manufacturer and model	Engine model
AERFER/AERMECCHI AM, 3	GTSIO-520-C
AERO COMMANDER: 200D 500A COLEMILL CONVERSION 685	IO-520-A IO-520-E GTSIO-520-K
AISA: F20, PEGASO	IO-520-K
AMBROSIN MF-151	IO-520-F
AVIONES PIHAO	IO-520-D
BEAGLE (U.K.): B206S	GTSIO-520-C
BEECHCRAFT BARON: C55 D55 E55 58 58P 58P 58P 58TC 58TC 58TC	IO-520-CB, -C IO-520-CB, -C IO-520-CB, -C IO-520-CB TSIO-520-LB TSIO-520-L TSIO-520-WB TSIO-520-LB TSIO-520-L TSIO-520-WB
BEECHCRAFT BONANZA: A36 E33A E33A E33B F33 F33A F33A F33A S35 ST35 V35 V35A V35A-TC V35B V35B V35B	IO-550-B IO-520-BA IO-520-BB IO-520-B IO-520-BB IO-520-B IO-520-BA IO-520-BB IO-520-B TSIO-520-D IO-520-BB IO-520-B TSIO-520-D IO-520-B IO-520-BA IO-520-BB

A36	IO-520-B
A36	IO-520-BA
A36	IO-520-BB
A36-TC	TSIO-520-UB
BEECHCRAFT DEBONAIR: C33A	IO-520-B
VIKING 300	IO-520-A IO-520-D IO-520-K
BONNAIRE 185	IO-520-D
BONNAIRE 188 CONVERSION	IO-520-D
BURNS BA42	IO-520-D
CESSNA: SUPER SKYLANE A, B, C, D, E TURBO SUPER SKYLANE SKYWAGON A185 E, F SKYWAGON A185FII AG SPRAYER 188-300 A188-230 AG TRUCK (A 188B) -300 AG HUSKEY (A 188C) -310 AG WAGON (A 188B) SUPER SKYWAGON U206, A U206B, C, D, E, F TURBO SKYWAGON TU206 A TU206B, C, D, E, F STATIONAIR U206 TU206 U206FII-300 U206G-300 U206GII-300 TU206G-310 SUPER SKYLANE P206A P206B, C, D, E TURBO P 206 A, B, C, D, E SKYWAGON 207 TURBO 207 STATIONAIR 207A, 207AII STATIONAIR 8, 811 T-STATIONAIR 811 210 CENTURION D, E, F, G, H. 210 CENTURION J 210 CENTURION K, L, M, N, R 210 CENTURION TURBO 210 CENTURION TURBO 210 CENTURION TURBO K, L TURBO 210 J, K, L TURBO 210 MII, NII TURBO 210R PRESSURIZED CENTURION P210N PRESSURIZED CENTURION P210NII PRESSURIZED CENTURION P210R T303 CRUSADER T303 CRUSADER 310R 310R TURBO 310 P, Q TURBO 310 R TURBO 310 R EXECUTIVE SKYKNIGHT D, E, F	IO-520-A TSIO-520-C IO-520-D IO-520-D IO-520-D IO-520-D IO-520-D TSIO-520-T IO-520-D IO-520-A IO-520-F IO-520-C TSIO-520-C IO-520-F TIOS-520-C IO-520-F IO-520-F IO-520-L TSIO-520-M IO-520-A IO-520-A TSIO-520-C IO-520-F TSIO-520-G IO-520-F IO-520-F TSIO-520-M IO-520-A IO-520-J IO-520-L TSIO-520-C TSIO-520-H TSIO-520-H TSIO-520-H TSIO-520-R TSIO-520-R TSIO-520-P TSIO-520-AF TSIO-520-CE TSIO-520-AE LTSIO-520-AE IO-520-MB IO-520-M TSIO-520-B TSIO-520-BB TSIO- 520-B TSIO-520-B

335	TSIO-520-EB
340	TSIO-520-K
340A	TSIO-520-NB, -N
401 A, 401 B	TSIO-520-E
402 A, 402 B	TSIO-520-E
402C	TSIO-520-VB
404 TITAN	GTSIO-520-M
411, 411A	GTSIO-520-C
414	TSIO-520-J
414, 414 A	TSIO-520-NB, -N
421A	GTSIO-520-D
421B	GTSIO-520-H
421C	GTSIO-520-L
421C	GTSIO-520-N
JANOX JAVILON	IO-520-B
NAVION: RANGEMASTER MODEL H RANGEMASTER MODEL H	IO-520-B IO-520-BA
PIPER: MALIBU	TSIO-520-BE
PRINAIR: DE HAVILLAND HERON WINDECKER EAGLE	IO-520-E IO-520-C

Unsafe Condition

(d) This AD results from reports of 34 failures of ECi cylinder head. We are issuing this AD to prevent loss of engine power due to cracks in the cylinder head and possible engine failure caused by separation of a cylinder head.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

Identifying Suspect Cylinders

(f) Within 50 hours time-in-service (TIS) after the effective date of this AD, identify, and if necessary replace cylinders, ECi P/N AEC631397 as follows:

(1) Identify the cylinder serial number (SN) as follows:

(i) Determine the SN of the cylinder by looking in the engine records or by inspecting the cylinder for a SN on the intake port boss (see Figure 1) or on the flat area next to the head to barrel junction (see Figure 2). Disregard any dash numbers that might follow the four digit SN.

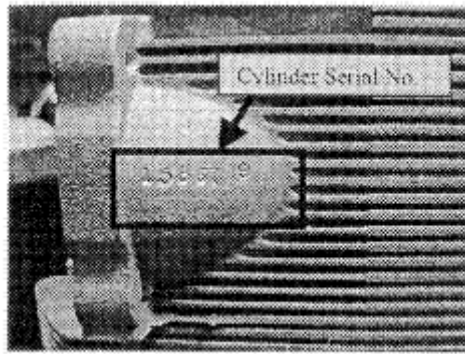


Figure 1.

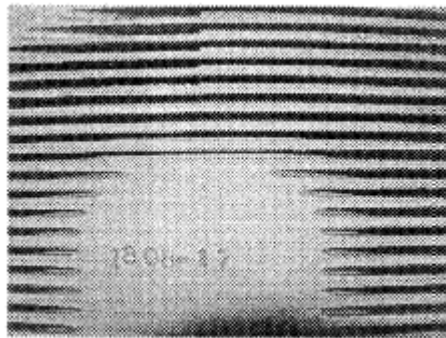


Figure 2.

- (ii) If the SN is 1043 or lower, or if it is 7709 or higher, no further action is required.
- (2) If the cylinder SN is 1044 through 7708, do the following:
 - (i) Remove the rocker box cover from the cylinder.
 - (ii) Look at the left-front cylinder casting.
 - (iii) If the casting has AEC65385, and an "O" under the ECi logo, the cylinder is P/N AEC631397. See Figure 3.



Figure 3.

(iv) If the cylinder is not ECI P/N AEC631397, no further action is required.

(3) If the cylinder is ECI P/N AEC631397, do the following:

(i) Look at the flange of the rocker box.

(ii) If there is a letter "A," "B," or "X" stamped on the flange of the rocker box, no further action is required. See Figure 4.

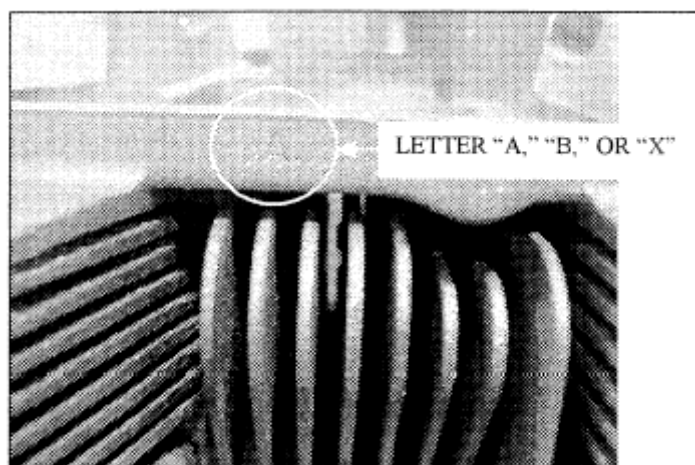


Figure 4.

(iii) If there is no letter "A," "B," or "X" stamped on the flange of the rocker box, replace the cylinder before further flight.

Alternative Methods of Compliance

(g) The Manager, Special Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Material Incorporated by Reference

(h) None.

Related Information

(i) ECI Mandatory Service Bulletin S.I. No. 04-1, revision 1, dated March 11, 2004, also pertains to this subject of this AD.

Footer Information

Issued in Burlington, Massachusetts, on April 9, 2004.

Francis A. Favara,

Acting Manager, Engine and Propeller Directorate,

Aircraft Certification Service.

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