

N110BW
AIRCRAFT REGISTRATION NO.

1538
AIRCRAFT SERIAL NO.

SR20
TYPE AIRCRAFT



2008-11-18 R
AD NUMBER

Exhaust Fumes

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL | DUE AT | AUTHORIZED SIGNATURE & NUMBER |
|---------|-------------------------|---|--|---------------|---|-------------------------------|
| | | | | TOTAL TIME | DATE, TACH, OR RECORDING METER TIME | |
| 7/11/09 | 750.8 | 750.8 | Per SB 2X-78-07 R1 By Insp. & Press. TEST | 850.8 | 850.8 | Leif Jensen #1613512 |
| 7/2/14 | 840.0 | 840.0 | INSPECTION PROCEDURE TEST NO DEFECTS NOTED. | 940.0 | 940.0 | T. Holmquist #211007 |
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Amendment 39-15541; Docket No. FAA-2008-0284; Directorate Identifier 2008-CE-006-AD.

Effective Date

(a) This AD becomes effective on July 7, 2008.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Model SR20 airplanes, serial numbers 1005 through 1815, that are certificated in any category.

Unsafe Condition

(d) This AD results from the discovery of engine exhaust fumes in the cabin of Cirrus Design Corporation Model SR20 airplanes. We are issuing this AD to detect and correct leaks in the exhaust system, which could result in exhaust gases leaking into the cabin heating system. This condition could lead to carbon monoxide in the cabin and incapacitation of the pilot.

Compliance

(e) To address this problem, you must do the following, unless already done:

| Actions | Compliance | Procedures |
|---|---|---|
| (1) Perform a pressurization inspection/check on the exhaust system. | Initially within the next 25 hours time-in-service (TIS) after July 7, 2008 (the effective date of this AD) or within the next 3 months after July 7, 2008 (the effective date of this AD), whichever occurs first. Repetitively thereafter at intervals not to exceed every 100 hours TIS. | Follow Cirrus Service Bulletin SB 2X-78-07 R1, Revision 1, dated December 18, 2007. |
| (2) If the exhaust system is found defective during any inspection/check required in paragraph (e)(1) of this AD or an exhaust odor is detected inside the airplane cabin, replace the heat exchanger weldment and shroud with new improved heat exchanger weldment and new shroud. | Before further flight after the inspection/check in which the exhaust system is found defective or an exhaust odor is detected. | Follow Cirrus Service Bulletin SB 2X-78-07 R1, Revision 1, dated December 18, 2007. |

Note: The replacement of the heat exchanger weldment and shroud may be done instead of the initial inspection but does not eliminate the 100-hour repetitive inspection.

Alternative Methods of Compliance (AMOCs)

(f) The Manager, Chicago Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Michael Downs, Aerospace Engineer, Chicago ACO, 2300 East Devon Avenue, Room 107, Des Plaines, Illinois 60018; telephone: (847) 294-7870; fax: (847) 294-7834. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(g) You must use Cirrus Service Bulletin SB 2X-78-07 R1, Revision 1, dated December 18, 2007, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Cirrus Design Corporation, 4515 Taylor Circle, Duluth, Minnesota 55811, telephone: (218) 788-3000.

(3) You may review copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Kansas City, Missouri, on May 22, 2008.

David R. Showers, Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

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Type Aircraft _____

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N 110 BW
AIRCRAFT REGISTRATION NO.

1538
AIRCRAFT SERIAL NO.

SR20
TYPE AIRCRAFT

adNote™

97-26-17^{Corr.} R
AD NUMBER

Continental/Rolls-Royce Engine

| If multi-engine: <input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> Front <input type="checkbox"/> Rear | | | | Engine Model/Serial No: 10-360-ES / 360000 | | |
|--|----------------------|--|----------------------|--|-------------------------------------|-------------------------------|
| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL | DUE AT | AUTHORIZED SIGNATURE & NUMBER |
| | | | | TOTAL TIME | DATE, TACH, OR RECORDING METER TIME | |
| 4/28/09 | 750.8 | 750.8 | N/A Per EUG S/W | N/A | | <i>[Signature]</i> AP1613512 |
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Amendment 39-10260. Docket 93-ANE-08. Supersedes AD 87-23-08, Amendment 39-5735.

Applicability: Teledyne Continental Motors (TCM) IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 series reciprocating engines built on or prior to December 31, 1980; rebuilt TCM IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 series reciprocating engines with serial numbers lower than those listed in TCM Critical Service Bulletin (SB) No. CSB96-8, dated June 25, 1996; TCM factory overhauled IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 series reciprocating engines with serial number of 901203H and lower; and Rolls-Royce, plc IO-360 and TSIO-360 series reciprocating engines with any serial number. These engines are installed on but not limited to the following aircraft: Raytheon (formerly Beech) models 95-C55, 95-C55A, D55, D55A, E55, E55A, 58, 58A, 58P, 58PA, 58TC, 58TCA, S35, V35, V35A, V35B, E33A, E33C, 35-C33A, 36, A36, F33A, F33C and A36TC; Bellanca model 17-30A; Cessna models 172XP, A185, A188, T188C, 206, T206, 207, T207, 210, T210, P210, 310R, T310P, T310Q, T310R, 320D, 320E, 320F, 336, 337, T337, P337, 340, 401, 402, 414 and T41B/C; Colemill conversion of Commander 500A; Goodyear Airship Blimp 22; Maule Model M-4-210, M-4-210C, M-4-210S, M-4-210T, and M-5-210C; Mooney model M20-K; Navion model H; Pierre Robin HR 100; The New Piper Aircraft, Inc. (formerly Piper Aircraft Company) models PA28-201T, PA28R-201T, PA28RT-201T, PA34-200T and PA34-220T; Prinsair DeHavilland Heron; Reims models FR172, F337 and FT337; and Swift Museum Foundation, Inc. models GC-1A and GC-1B equipped with the IO-360 engine.

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 (d) 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 and subsequent engine failure, accomplish the following:

(a) At the next engine overhaul, or whenever the crankshaft is next removed from the engine, after the effective date of this AD, whichever occurs first, determine if the crankshaft was manufactured using the airmelt or vacuum arc remelt (VAR) process in accordance with the identification procedure described in TCM Critical SB No. CSB96-8, dated June 25, 1996. If the crankshaft was manufactured using the airmelt process or if the manufacturing process is unknown, remove the crankshaft from service and replace with a serviceable crankshaft manufactured using the VAR process.

(b) For all TCM IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 and Rolls-Royce, plc IO-360 and TSIO-360 engine models that have VAR crankshafts installed, regardless of serial number; at the next and every subsequent crankshaft removal from the engine case or installation of a replacement crankshaft, prior to crankshaft

installation in the engine, conduct an ultrasonic inspection of the crankshaft in accordance with the procedures specified in TCM Mandatory SB No. MSB96-10, dated August 15, 1996, and, if necessary, replace with a serviceable part.

Note 2: Accomplishment of the ultrasonic inspection required by this AD does not fulfill any requirements for magnetic particle inspection or any other inspections specified in TCM or Rolls-Royce, plc overhaul manuals.

(c) The ultrasonic inspection of the crankshaft must be performed by a non-destructive test (NDT) ultrasonic (UT) Level II inspector who is qualified under the guidelines established by the American Society of Nondestructive Testing or MIL-STD-410 or FAA-approved equivalent, or must be trained by TCM personnel or their designated representative on how to accomplish and conduct this inspection procedure. The person approving the engine for return to service is required to verify that the UT inspection was accomplished in accordance with the requirements of this paragraph.

(d) 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, Atlanta Aircraft Certification Office. Operators shall submit their requests through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta Aircraft Certification Office.

(e) 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.

(f) The actions required by this AD shall be done in accordance with the following TCM service documents:

| Document No. | Pages | Date |
|--------------|-------|-----------------|
| CSB96-8 | 1-6 | June 25, 1996 |
| Total pages: | 6. | |
| MSB96-10 | 1-3 | August 15, 1996 |
| Total pages: | 3. | |

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 Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (888) 826-5874. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief 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.

(g) This amendment becomes effective on January 23, 1998.

FOR FURTHER INFORMATION CONTACT: Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, 1895 Phoenix Blvd., One Crown Center, Suite 450, Atlanta, GA 30349, (770) 703-6096, fax (770) 703-6097.1

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Type Aircraft _____

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N 110BW
AIRCRAFT REGISTRATION NO.

1538
AIRCRAFT SERIAL NO

\$R20
TYPE AIRCRAFT

adNote™

93-5-6 R

AD NUMBER

Ignition Switch

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL | DUE AT | AUTHORIZED SIGNATURE & NUMBER |
|---------|-------------------------|---|----------------------|---------------|---|-------------------------------|
| | | | | TOTAL TIME | DATE, TACH, OR RECORDING METER TIME | |
| 4/22/09 | 450.8 | 450.8 | INSTALLED New | 2000 | 2000 | See Log #1613512 |
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Amendment 39-8511. Docket 92-NM-165-AD.

Applicability: ACS and Gerdes ignition switches; as installed in, but not limited to, Piper Model PA-38-112 series airplanes, Schweizer Model G-164 series (including Model G-164A, G-164B, and G-164C) airplanes, Schweizer Model 2-37 and 2-37A series airplanes, and the following Cessna airplanes; certificated in any category:

| Cessna Model | Serial Numbers | | |
|--------------|----------------|---------|------------|
| 150 | 15074428 | through | 15079405 |
| A150 | A1500389 | through | A1500734 |
| F150 | F15001024 | through | F15001428 |
| FRA150 | FRA1500212 | through | FRA1500336 |
| 152 | 15279406 | through | 15286033 |
| A152 | A1520735 | through | A1521049 |
| F152 | F15201429 | through | F15201980 |
| FA152 | FA1520337 | through | FA1520425 |
| 172 | 17261486 | through | 17276673 |
| R172 | R1722000 | through | R1723454 |
| 172RG | 172RG0001 | through | 172RG1191 |
| F172 | F17201045 | through | F17202254 |
| FR172 | FR17200441 | through | FR17200675 |
| 177 | 17701890 | through | 17702752 |
| 177RG | 177RG0342 | through | 177RG1366 |
| F177RG | F177RG0093 | through | F177RG0177 |
| 180 | 18052317 | through | 18053203 |
| 182 | 18261786 | through | 18268615 |
| R182 | R18200001 | through | R18202041 |
| A182 | A182-0137 | through | A182-0148 |
| FR182 | FR18200001 | through | FR18200169 |
| FR182 | FR18200001 | through | FR18200070 |
| 185 | 18502154 | through | 18504448 |
| U206 | U20601980 | through | U20607020 |
| 207 | 20700222 | through | 20700788 |
| 210 | 21059893 | through | 21065009 |
| P210 | P21000001 | through | P21000074 |

Compliance: Required as indicated, unless accomplished previously.

To prevent failure of ignition switches, accomplish the following:

(a) Within 100 flight hours after the effective date of this AD, or at the next annual inspection, whichever occurs first, perform an inspection of the ignition switch to detect wear and corrosion, and lubricate the switch, in accordance with ACS Service Bulletin SB92-01, dated August 15, 1992; or Cessna Service Bulletin SEB91-5, Revision 1, June 14, 1991. If wear or corrosion is detected, prior to further flight, replace the switch in accordance with the service bulletin. Repeat this inspection and lubricate the ignition switch in accordance with the service bulletin, thereafter, at intervals not to exceed 2,000 flight hours.

NOTE: ACS ignition switches that do not have a "start" position (models A-510-1 and A-510-5) or were manufactured on or after

February 20, 1989, and have not accumulated 2,000 flight hours, need not be lubricated. The manufacture date is stamped on the switch body. These switches are identifiable by red paint in the screw heads on the back of the switch. However, manufacturer lubricated switches that have a "start" position, but do not have a starter solenoid diode, must be inspected and modified.

(b) Within 100 flight hours after the effective date of this AD, or at the next annual inspection, whichever occurs first, inspect the ignition switch installation to determine if a diode or other surge suppresser is installed on the starter solenoid. If one is not installed, prior to further flight, install a starter solenoid diode in accordance with ACS Service Bulletin SB92-01, dated August 15, 1992; or Cessna Service Bulletin SEB91-5, Revision 1, dated June 14, 1991.

NOTE: For operators using the Cessna service bulletin to install the diode in the starter solenoid: The procedures for installation are contained in Attachment to Service Bulletin SEB91-5R1, Revision 1, dated June 14, 1991.

(c) 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, Los Angeles Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

NOTE: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

(d) Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate the airplane to a location where the requirements of this AD can be accomplished.

(e) The inspection, lubrication, replacement, and modification shall be done in accordance with ACS Service Bulletin SB92-01, dated August 15, 1992; or Cessna Service Bulletin SEB91-5, Revision 1, dated June 14, 1991, which includes Attachment to Service Bulletin SEB91-5R1, Revision 1, dated June 14, 1991. 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 ACS Products Company, P.O. Box 152, 1585 Copper Drive, Lake Havasu City, Arizona 86403-0008; or Cessna Aircraft Company, Customer Services, P.O. Box 7704, Wichita, Kansas 67277. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Los Angeles Aircraft Certification Office, 3229 East Spring Street, Long Beach, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(f) This amendment becomes effective on April 29, 1993

AD Number _____
(continued)

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adNote

Aircraft Registration No. _____

Type Aircraft _____

[illegible]

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

84-26-2 R

AD NUMBER

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear

[illegible]

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Within the next one hundred hours time-in-service after the effective date of this AD or prior to the accumulation of 500 hours time-in-service on the filter, whichever occurs later, and thereafter at intervals not exceeding 500 hours time-in-service on the filter:

This amendment becomes effective January 29, 1985.

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Aircraft Registration No. _____

Type Aircraft _____

adNote

[illegible]