
THE
adlog™
SYSTEM
AIRCRAFT
MAINTENANCE
RECORDS

TEMPEST

SPARK PLUG

Glass beads are not good when
cleaning aircraft spark plugs.
understand why and, importan
right.

Cement fills the space betwe
electrode and the ceramic in
massive electrode spark plu



Figure

Figure 1 shows the gap
insulator and electrode

Place Stamp Here

SOUTHOLD NY 11971-0965

GALLONS USABLE

| | L Main Tank | R MAIN Tank |
|---|---|---|
| 14 | 24.5 | 24.5 |
| 13 | 21 | 21 |
| 12 | 19.5 | 19.5 |
| 11 | 17.75 | 17.75 |

GENERAL INFORMATION

AIRCRAFT INSPECTION STATUS

AIRFRAME

ENGINE

PROPELLER

AVIONICS

## Step 6



Initiate the Inspection Status Form. This is a very handy way to stay on top of all required inspections as they come due — annual, 100-hour and progressive inspections, engine oil and filter changes, overhauls, transponder checks, IFR altimeter-static system checks, ELT battery replacement dates and so on (See Fig. 5).

If you operate a fixed-wing aircraft, you now have your *adlog*™ System working.

## Helicopters, Turbine-Powered or Piston-Powered Part 135 Fixed-Wing Aircraft

Included is a section for *Service or Life-Limited Components*, consisting of individual maintenance, overhaul and replacement record sheets to be used for each life-limited component, as well as special index pages for quick reference. All applicable information should be entered on these sheets and the Index filled in and brought up to date. This will now enable you to easily stay on top of individual component removal and replacement times as well as providing a complete maintenance & AD history of these components.

## Transfer of Ownership or Renewal of Expired Subscriptions

If your aircraft is sold, the remainder of the current *adlog*™ subscription can be transferred to the new owner/operator free of charge. Just complete and mail the enclosed transfer card.

If the subscription has lapsed, it can be reinstated and brought up to date. Write or call for full particulars.

If at any time you have any questions concerning your *adlog*™ System . . . or if we can be of assistance in any way, do not hesitate to contact us.


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ADLOG ID NUMBER: 1000

adlog

### Airworthiness Directive Index

Page No. 1

Effective Date: 09/15/00

Aircraft: PA-24-250; S/N 24270A

| AD NUMBER | TYPE | SUBJECT | SUPERSEDES AD NUMBER | N.A. |
|---|---|---|---|---|
| | | ENGINE(s): O-540-A1D5 | | |
| | | PROPELLER(s): HC-A2VK-1 | | |
| | | MAGNETO(s): Bendix T Series | | |
| 62-26-05 | N | EXHAUST SYSTEM | | |
| 63-14-02 | NR | LYCOMING ENGINE | | |
| 63-22-03 | N | MARVEL-SCHEBLER CARBURETOR | | |
| 63-27-03 | N | LANDING GEAR RETRACTION MOTOR CIRCUIT | | |
| 64-10-04 | N | CARB. AIR BOX DEFLECTOR VANES | | |
| 64-16-05 | N | LYCOMING ENGINE | | |
| 64-22-03 | N | LANDING GEAR SAFETY SWITCH | | |
| 65-11-04 | N | STABILATOR CONTROL SYSTEM | | |
| 65-25-03 | NR | NOSE GEAR DRAG LINK CLEVIS | | |
| 66-05-04R1 | N | MARVEL-SCHEBLER CARBURETOR | | |
| 66-20-04 | N | LYCOMING ENGINE | | |
| 67-05-01R1 | NR | EXHAUST MUFFLER | | |
| 68-13-03R1 | NR | FUEL CELL COLLAPSE | | |
| 68-19-04R1 | R | HARTZELL PROPELLER | | |
| 69-24-03 | N | MARVEL-SCHEBLER CARBURETOR | | |
| 72-00-05R2 | N | MARVEL-SCHEBLER CARBURETOR | | |
| [illegible] | [illegible] | [illegible] | | |

Figure 4

adlog

### Aircraft Inspection Status

Page 1 of

Aircraft Registration No. N1234M
Make & Model Barnburner II
Serial No. II - 543210

| TYPE OF INSPECTION | DUE AT HOURS | DUE AT CYCLES | DUE AT DATE | COMPLIED WITH HOURS | COMPLIED WITH CYCLES | COMPLIED WITH DATE |
|---|---|---|---|---|---|---|
| Annual | | | 3-31-76 | | | 3-30-77 |
| 100 hr. | 1126 | | | 1120 | | |
| 100 hr. | 1120 | | | 1320 | | |
| ELT Battery | | | 9-30-77 | | | |
| Altimeter-Static Syst | | | 4-22-77 | | | |
| Transponder Biennial | | | 10-26-78 | | | |
| 100 hr. Annual | 1420 | | | 1420 → | | 3-30-77 |
| Annual | | | 3-31-78 | | | |

Figure 5

APPLICABLE AIRWORTHINESS DIRECTIVES
AIRCRAFT INSPECTION STATUS
AIRFRAME
ENGINE
PROPELLER
AVIONICS

GENERAL INFORMATION

AIRCRAFT INSPECTION STATUS

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Figure 1 shov
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adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

## Aircraft Inspection Status

Aircraft Registration No. N30553

Make & Model CESSNA 177A

Serial No. 17701322

Page 1 of

| TYPE OF INSPECTION | DUE AT | | | COMPLIED WITH | | |
|---|---|---|---|---|---|---|
| | HOURS | CYCLES | DATE | HOURS | CYCLES | DATE |
| ANNUAL | | | 11/30/01 | 1700.2 | | 1/22/02 |
| TRANSPONDER | | | 10/31/03 | | | 10/12/01 |
| ENCODER | | | 10/31/03 | | | 10/12/01 |
| ALTIMETER | | | 10/31/03 | | | 10/12/01 |
| STATIC | | | | | | 10/24/01 |
| ELT BATTERY | | | 12/2003 | 1812.3 | | 4/2004 |
| ELT BATTERY | | | 4/2006 | 1935.3 | | 7/2006 |
| ELT BATTERY | | | 8/2008 | 1994.3 | | 8/29/2008 |
| ELT BATTERY | | | 9/2010 | 2003.2 | | 9/18/2009 |
| ELT BATTERY | | | 11/2011 | 2055.6 | | 4/30/2012 |
| ELT BATTERY | | | 4/2014 | 2093.4 | | 5/1/2014 |
| ELT BATTERY | | | 5/2016 | 2111.0 | | 6/14/2016 |
| ELT BATTERY | | | 6/2018 | 2127.4 | | 7/21/2018 |
| ELT BATTERY | | | 7/2020 | 2142.4 | | 7/20/2020 |
| ELT BATTERY | | | 7/2022 | 2162.7 | | 7/30/2022 |
| ELT BATTERY | | | 7/2024 | | | |
| ELT BATTERY | | | | | | |

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APPLICABLE AIRWORTHINESS DIRECTIVES

AD PERIODICALLY COMPLIED WITH

AIRFRAME

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Figure 1 sho
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GENERAL INFORMATION

AIRCRAFT INSPECTION STATUS

adlog

## Aircraft Inspection Status (continued)

Page_____ of _____

| TYPE OF INSPECTION | DUE AT | | | COMPLIED WITH | | |
|---|---|---|---|---|---|---|
| | HOURS | CYCLES | DATE | HOURS | CYCLES | DATE |
| | | | | | | |
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Figure 1 sho
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GENERAL INFORMATION

AIRCRAFT INSPECTION RECORDS

ENGINE

THE adlog™ AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

AIRFRAME
MAINTENANCE
RECORDS

PROPELLER

ENGINES

adlog

# AIRFRAME MAINTENANCE RECORDS



Log No. 5

Aircraft Registration No. N30553

Aircraft Mfg. CESSNA Model 177A Serial No. 17701322

Engine Mfg. Lycoming Model O-360-A2F Serial No. L-13658-36A

Engine Mfg. _____ Model _____ Serial No. _____

Propeller Mfg. McCauley Model _____ Serial No. _____

Hub Design No. 1A170 EFA Hub Serial No. P73188

Blade Design No. _____ Blade Serial No's. _____

Propeller Mfg. _____ Model _____ Serial No. _____

Hub Design No. _____ Hub Serial No. _____

Blade Design No. _____ Blade Serial No's. _____

(All applicable information must be filled in)

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Page No. 1

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 1647.00 | | **TOTAL** brought forward from previous page |
| 1-22-02 | | TACH: TT: 1700.2 | Annual Inspection per Cessna 177 service manual. All panels removed. All controls lubed and checked for security. Checked wheels and brakes. Installed new ELT battery and ops checked. New date: Dec. 03. Installed new 35A battery. Repaired crack on nose bowl of lower cowl with fiberglass cloth. C/w AD 70-24-04 by ops check, C/w AD 72-03-03R3 by Inspection, C/w AD 76-07-12R1 by ops check, C/w AD 87-20-03R2 by Inspection. Aircraft was test run and all systems ops check normal. I Certify that this aircraft has been inspected in accordance with an Annual Inspection and was determined to be in a airworthy condition. Dave Kapica AP3118003591A |
| 2/20/03 | | TACH 1747.50 | Total Time 1747.50 Annual Inspection per Cessna 177 service manual. C/w AD 70-24-4 ops check Fuel shut off valve, C/w AD 76-7-12 Bendix Inj switch checks ok, C/w AD 72-3-3 Wing Flap Jack Screw, C/w AD 87-20-3 Seat Rails ok, Lubed all controls and checked for security. All panels for inspection removed, inspection inspected and panels installed. Aircraft test run and all systems ops check Normal Ray W Clark A&P 2346866 I certify that this Aircraft has been inspected in accordance with an "Annual Inspection" and was found to be in "Airworthy Condition. Ray W. Clark A&P 2346866 IA |
| | 1747.5 | | **SUB-TOTAL** this page |
| | 1747.5 | | **TOTAL**—Carry forward to next page |

Page No. 2

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 1747.5 | | **TOTAL** brought forward from previous page |
| 5/13/2004 | 1812.3 | Tach and Total Time | Replaced Narco ELT battery P/N BP-1010, next change date April 2006. Installed Sigtronics SPA-400, 4 place intercom per ~~manufacture's instructions.~~ Installed push-to-talk microphone switches on pilot and co-pilot yokes. Installed new Airtex Floor Carpet P/N 24359. Installed new Airtex Seat Covers (with new foam) P/N 25224. Overhauled Nose Gear Shock Strut Assembly, replaced all o-rings and retainer clips (including o-ring on floating piston). Replaced Bearings on Torque Link Assembly P/Ns 8L8F and 6L6F. Replaced Bleeder Valve Assembly P/N S1827-1. Recharged strut per service manual and inspected for leaks. Brake System - Replaced the following on both axels; ~~Flexible Hose Assemblies P/Ns S1810-550, Brake Linings~~ P/Ns RA66-105, Brake Discs P/Ns RA164-02601. Serviced brake system per service manual and inspected for leaks. Conditioned new brake linings per Cleveland Technician's Service Manual. ~~Completed Annual Inspection per C177 Service Manual.~~ All panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearing. Cleaned and serviced battery. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. ~~C/W AD 72-3-3,~~ Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 87-20-3, Seat Rail and Seat Assemblies. All ADs current at this time. ~~Aircraft was test run and all systems OPS~~ checked normal. Ray W Clark 2346866 A&P I certify that this aircraft has been inspected in accordance with "Annual Inspection" and found to be in "Airworthy ~~Condition~~". Ray W Clark 2346866 IA A&P 2346866 IA |
| | 1812.3 | | **SUB-TOTAL** this page |
| | [illegible] | | **TOTAL**—Carry forward to next page |

GENERAL INFORMATION
AIRCRAFT INSPECTION STATUS
AIRFRAME
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ALTERATIONS COMPLIED WITH
ENGINE
PROPELLER
AVIONICS

Page No. 3

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 1812.3 | | **TOTAL** brought forward from previous page |
| 2/4/05 | Tach | 1886.3 | Inst. 11.1 ovhl each altimeter, model Aerosonic P/N 101720-01545, S/N 128167 and tested altimeter, static system, transponder IAW FAR 91.411, 91.413 and 91.217 See sign off in Avionics section. |
| | | | MAINTENANCE RELEASE The component identified was repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service. Pertinent details of the repairs are on file at this repair station under Work Order 05-17646 Date 2/4/5 Signed for CS2R103L Crystal Shamrock, Inc. 6000 Douglas Drive No., Mpls. MN 55429 |
| 6/09/2005 | 1895.5 | | Tach and Total Time |
| | | | Completed Annual Inspection per C177 Service Manual. All panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearing. Cleaned and serviced battery. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 87-20-3, Seat Rail and Seat Assemblies. All ADs current at this time. Aircraft was test run and all systems OPS checked normal. |
| | | | P.W. Clark 2346866 A&P |
| | | | I certify that this aircraft has been inspected in accordance with "Annual Inspection" and found to be in "Airworthy Condition". |
| | | | P.W. Clark 2346866 IA |
| 1895.5 | | | SUB-TOTAL this page |
| 1895.5 | | | TOTAL—Carry forward to next page |

Page No. 4

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 1895.5 | | **TOTAL** brought forward from previous page |
| 07/06/2006 | 1935.3 | | Tach and Total Time |
| | | | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearing. Cleaned and serviced battery. Replaced ELT battery, P/N BP-1010, next change date August 2008. Replaced both, flap up-down micro switches (behind flap lever), Cessna P/N S1906-1, rigged flap stops per Cessna Service Manual. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 87-20-3, Seat Rail and Seat Assemblies. All ADs current at this time. Aircraft was test run and all systems OPS checked normal. |
| | | | P.W. Clark 2346866 A&P |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". |
| | | | P.W. Clark 2346866 IA |
| 1935.3 | | | SUB-TOTAL this page |
| 1935.3 | | | TOTAL—Carry forward to next page |

GENERAL INFORMATION
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AIRFRAME
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ENGINE
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AVIONICS

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Page No. 5

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 1935.3 | | **TOTAL** brought forward from previous page |
| 08/06/2007 | | 1967.3 | Tach and Total Time<br>~~Completed Annual Inspection per C177 Service Manual.~~ All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearing. Cleaned and serviced battery. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. ~~C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD~~ 76-7-12 Bendix Switch by OPS check. C/W AD 87-20-3, Seat Rail and Seat Assemblies. All ADs current at this time. ~~Aircraft was test run and all systems OPS checked normal.~~<br>2346866 A&P<br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition"<br>2346866 IA |
| | | | **SUB-TOTAL** this page |
| | 1967.3 | | **TOTAL**—Carry forward to next page |

Page No. 6

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 1967.3 | | **TOTAL** brought forward from previous page |
| 08/29/2008 | 1994.3 | | Tach and Total Time<br>Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearing. Replaced both main tires and inner tubes, (Airhawk 600-6). Cleaned and serviced battery. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. ~~C/W AD 87-20-3,~~ Seat Rail and Seat Assemblies. All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P<br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| | 1994.3 | | **SUB-TOTAL** this page |
| | 1994.3 | | **TOTAL**—Carry forward to next page |

GENERAL INFORMATION
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Page No. 7

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 1994.3 | | **TOTAL** brought forward from previous page |
| 09/18/2009 | 2003.9 | Tach and | Total Time |
| | | | Completed ~~Annual Inspection per C177~~ Service Manual. ~~All~~ inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced main landing gear wheel bearings. Serviced and replaced both nose bearings, Cessna P/N 08125, and both bearing cups, Cessna P/N 08231. Serviced battery cables and replaced battery with new Gill G-35. Replaced new ELT battery, Narco P/N 50695-0001. Replaced landing light, Cessna P/N 0523118-1 (GE #4509). ~~C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W~~ AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 87-20-3, Seat Rail and Seat Assemblies. All ADs current at this time. Aircraft was test run and all systems OPS checked normal. |
| | | | 2346866 A&P |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". |
| | | | 2346866 IA |
| 11/5/2009 | 2006.63 | TACH | INSTALLED SEAT STOP KIT SK210-174A per SEB 07-5R1. [signature] A&P 2655566 St. Cloud Aviation |
| | 2006.6 | | **SUB-TOTAL** this page |
| | 2006.6 | | **TOTAL**—Carry forward to next page |

Page No. 8

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2006.6 | | **TOTAL** brought forward from previous page |
| 09/28/2010 | 2012.8 | Tach and | Total Time |
| | | | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery and battery cables. Replaced SAF-AIR quick drain valve on reservoir fuel tank, P/N SA18. Serviced shimmy dampener, disassembled and cleaned internal parts, replaced; (2) AN6227-9 and (1) AN6227-19 o-rings. Serviced upper and lower torque link assembles, replaced (4) 8L8F and (2) 6L6F bearings. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 87-20-3, Seat Rail and Seat Assemblies. All ADs current at this time. Aircraft was test run and all systems OPS checked normal. |
| | | | 2346866 A&P |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". |
| | | | 2346866 IA |
| | 2012.8 | | **SUB-TOTAL** this page |
| | 2012.8 | | **TOTAL**—Carry forward to next page |

GENERAL INFORMATION
AIRCRAFT INSPECTION STATUS
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APPLICABLE AIRWORTHINESS DIRECTIVES
ENGINE
PROPELLER
AVIONICS

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2012.8 | | **TOTAL** brought forward from previous page |
| 03/11/2011 | 2018.0 | | Tach and Total Time |
| | | | ~~Completed Annual Inspection per C177 Service Manual. All~~ inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery and battery cables. Serviced Fuel Shut-Off Valve Assembly, P/N; HE-797-1, replaced both o-rings, P/Ns; ~~MS29513-18 and MS29513-13. C/W AD 70-24-04, Fuel Shut Off~~ Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 87-20-3, Seat Rail and Seat Assemblies. All ADs ~~current at this time. Aircraft was test~~ run and all systems OPS checked normal. |
| | | | ~~2346866 A&P~~ |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". |
| | | | 2346866 IA |
| 4/30/2012 | 2055.6 | 2055.6 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery and battery cables. Serviced nose ~~gear shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS~~ check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal. |
| | | | ~~2346866 A&P~~ |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". |
| | | | 2346866 IA |
| 2055.6 | | | **SUB-TOTAL** this page |
| 2055.6 | | | **TOTAL**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2055.6 | | **TOTAL** brought forward from previous page |
| 4/25/2013 | 2071.6 | 2071.6 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings, replaced O-ring P/N MS28775-224 on piston assembly for right side brake caliber. Serviced battery and battery cables. Serviced nose gear shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. ~~C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12~~ Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and ~~all systems OPS checked normal.~~ |
| | | | 2346866 A&P |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". |
| | | | 2346866 IA |
| 5/01/2014 | 2093.4 | 2093.4 | **Completed Annual Inspection per C177 Service Manual. All** inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Installed new Concorde RG-~~35AXC battery and serviced battery cables. Serviced nose gear~~ shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat ~~rail locking pin hole dimensions within tolerances, no rail~~ cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal. |
| | | | 2346866 A&P |
| | | | I certify that this aircraft has been inspected in accordance with ~~an "Annual Inspection" and found to be in an "Airworthy~~ Condition". |
| | | | 2346866 IA |
| | | | **SUB-TOTAL** this page |
| 2093.4 | | | **TOTAL**—Carry forward to next page |

GENERAL INFORMATION
AIRCRAFT INSPECTION STATUS
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PROPELLER
AVIONICS

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2093.4 | | **TOTAL** brought forward from previous page |
| 5/14/2015 | 2104.5 | 2104.5 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery cables. Serviced nose gear shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P<br><br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 6/1/2016 | 2111.0 | 2111.0 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery cables. Serviced nose gear shock strut. C/W SEL-57-03, Wings – Lower Main Spar Cap Inspection, no cracks or corrosion detected. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P<br><br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| | 2111.0 | | **SUB-TOTAL** this page |
| | | | **TOTAL**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2111.0 | | **TOTAL** brought forward from previous page |
| 7/1/2017 | 2119.5 | 2119.5 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery and battery cables. Serviced nose gear shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P<br><br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 7/11/2018 | 2127.4 | 2127.4 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery and battery cables. Serviced nose gear shock strut. Replaced ELT battery and tested. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P<br><br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| | | | **SUB-TOTAL** this page |
| | 2127.4 | | **TOTAL**—Carry forward to next page |

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APPLICABLE AIRWORTHINESS DIRECTIVES
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| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2127.4 | | **TOTAL** brought forward from previous page |
| 7/14/2019 | 2136.65 | 2136.65 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery cables. Serviced nose gear shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br><br>2346866 A&P<br><br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br><br>2346866 IA |
| 7/10/2020 | 2142.4 | 2142.4 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery cables. Serviced nose gear shock strut. Replaced ELT Battery and tested. Removed Cessna Rudder Tail Light assembly and replaced with uAvionix ADS-B Out tailbeacon assemble. C/W SEL-57-03, Wings – Lower Main Spar Cap Inspection, no cracks or corrosion detected. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br><br>2346866 A&P |
| 2142.4 | | | **SUB-TOTAL** this page |
| | | | **TOTAL**—Carry forward to next page |

Page No. 14

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2142.4 | | **TOTAL** brought forward from previous page |
| 7/10/2020 | 2142.4 | 2142.4 | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br><br>2346866 IA |
| 7/21/2021 | 2155.6 | 2155.6 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear wheel bearings. Serviced battery and battery cables. Serviced nose gear shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br><br>2346866 A&P<br><br>I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br><br>2346866 IA |
| 2155.6 | | | **SUB-TOTAL** this page |
| | | | **TOTAL**—Carry forward to next page |

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AVIONICS

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2155.6 | | **TOTAL** brought forward from previous page |
| 7/30/2022 | 2162.7 | 2162.7 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Serviced battery cables. Serviced nose gear shock strut. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 3/14/2023 | 2165.6 | 2165.6 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Replaced battery with new Concord RG-35AXC per manufacturers instructions, serviced battery cables. Serviced nose gear shock strut. Replced gaskets and slip ring in both fuel caps with McFarlane gasket kit, P/N FC-KT-1. Installed SkyBolt cowl fastner conversion kit, P/N SK203C177P4, per STC instructions, FAA form 337 submitted. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P |
| | 2165.6 | | **SUB-TOTAL** this page |
| | 2165.6 | | **TOTAL**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2165.6 | | **TOTAL** brought forward from previous page |
| | | | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 4/22/2024 | 2169.1 | 2169.1 | Complied with AD 23-02-17 carry thru spar inspection. Cleaned, inspected and polished spar per AD Par (g) (3) (ii) and SEL-57-09R1 step 6. No material removed exceeded limits per SEL-57-09R1 step 6 (8) (b). Spar eddy current inspection done on 4/2/2024 by Signature TECHNIC Air, per AD Par H, 1 (i). Per AD Par (j) and SEL-57-09R1, Par 9C and 10 applied the following protective coating; Alodine, Alumigrip epoxy primer and Cor-Ban 23 (CIC). Per AD Par (k), Carry-Thru Spar Inspection report emailed to FAA on 4/22/2024.<br>2346866 IA |
| 7/01/2024 | 2169.1 | 2169.1 | Completed Annual Inspection per C177 Service Manual. All inspection panels removed, all controls lubed and checked for security, all panels reinstalled. Cleaned and serviced nose and main landing gear bearings. Replaced nose wheel tire with Goodyear Flight Special II, P/N 50561-8 and Goodyear tube P/N 302-013-400. Serviced nose gear shock strut. Serviced brake system with new fluid. Replaced vacuum system filter with P/N RA-D9-18-1. Serviced battery cables. Serviced cabin air ventilation system with new SCAT ducting, reference C177 Parts Catalog figure 56A items #27, 21 and 29. C/W AD 70-24-04, Fuel Shut Off Valve by OPS check. C/W AD 72-3-3, Wing Flap Jack Screw. C/W AD 76-7-12 Bendix Switch by OPS check. C/W AD 2011-10-9R, Seat Rail and Seat Assemblies, all critical measurements and all seat rail locking pin hole dimensions within tolerances, no rail cracks found . All ADs current at this time. Aircraft was test run and all systems OPS checked normal.<br>2346866 A&P |
| | 2169.1 | | **SUB-TOTAL** this page |
| | 2169.1 | | **TOTAL**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | 2169.1 | | TOTAL brought forward from previous page |
| 7/1/2024 | 2169.1 | 2169.1 | I certify that this aircraft has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". |
| | | | 2346866 IA |
| 8/7/25 | 2204 | 2204 | |

**Date:** 08/07/2025 **Hours:** Tach: 2204
**Tail#:** N30553
**Make:** Textron (Cessna) **Model:** 177A **S/N:** 17701322

Completed an Annual Inspection this date utilizing a checklist conforming to the scope and detail as set forth by 14 CFR, Part 43, Appendix D. Aircraft ground run completed for performance and operational check. All applicable items of Continued Airworthiness complied with. Inspected wings, tail, fuselage, lubed hinges, pulleys, pivot points. Inspected wheels, tires, brakes, greased, service nose strut with 5606 and nitrogen. Checked lights, charged battery. Inspected ELT per 91.207. C/W AD 70-24-04, fuel shut off valve by ops check. C/W AD 72-03-03, wing flap jack screw. C/W AD 76-07-12, Bendix switch by ops check. C/W AD 2011-10-09, seat rail and seat assemblies, all dimensions in tolerances, no rail cracks found. This aircraft was inspected in accordance with an annual inspection and found to be in an airworthy condition.

**Name:** Barry Reid
**Co:** Airworks
**Cert:** AP32608791A
**Sign:**

SUB-TOTAL this page

TOTAL—Carry forward to next page

Page No.

| DATE | TOTAL TIME IN SERVICE | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
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GENERAL INFORMATION

AIRCRAFT INSPECTION STATUS

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massi

Figure 1 sho
insulator and

SKYBOLT
AEROMOTIVE CORP.

9000 Airport Blvd. Leesburg Florida 34788

# Pick Ticket

| Acct. # | Date |
|---|---|
| 1040 | 1/3/2023 |

| Name / Address | Ship To |
|---|---|
| PWC AVIATION 1040<br>41170 W FOX LAKE ROAD<br>FIFTY LAKES, MN 56442 | PWC AVIATION<br>340 GARRETT DR<br>PINE RIVER, MN 56474 |

| Customer Phone | SO # | Ship Via | Sales Rep. | P.O. Number | UPS/FedEX Acct # |
|---|---|---|---|---|---|
| 612-310-0022 | 26905 | UPS-BLUE | HA | VERBAL | |

| Part No. | Description | Alt Part One | QTY | Req Date | Lot Number | LOT2 |
|---|---|---|---|---|---|---|
| SK203C177P4 | SK40S5S Phillips - Complete Kit | | 1 | | 98332 | |

## CERTIFICATE OF COMPLIANCE

Skybolt Aeromotive Corporation certifies that the above noted part number was manufactured and inspected in accordance with the applicable purchase order, drawing specifications, and any other requirements invoked thereon.

The materials and/or parts furnished under the above purchase order were produced either from materials furnished by the Buyer for the production of such parts, or from materials for which the Seller has available for examination, chemicals and/or physical test reports or other evidence of conformance.

The SK Part Number, Revision Letter and/or Lot Number listed on this certification may not reflect the part number, revision letter and/or lot number listed on the Processing Certification(s) and /or other paperwork attached to this Certification.
The identification listed on this certification is the identification of the SK Sales drawing at the time of manufacture and may not coincide with the manufacturing drawing(s) and/or revision letter(s) used to manufacture and process the part(s). Traceability to the identification listed on this certification is maintained and guaranteed.

When applicable, the parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards set in the manufacturer's design. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

**DFAR'S COMPLIANCE** **48CFR§252.225-7009** YES ☐ NO ☐

Debra A. Bowers, Vice President

ENGINE
PROPELLER
AVIONICS

Skybolt Aeromotive Corp

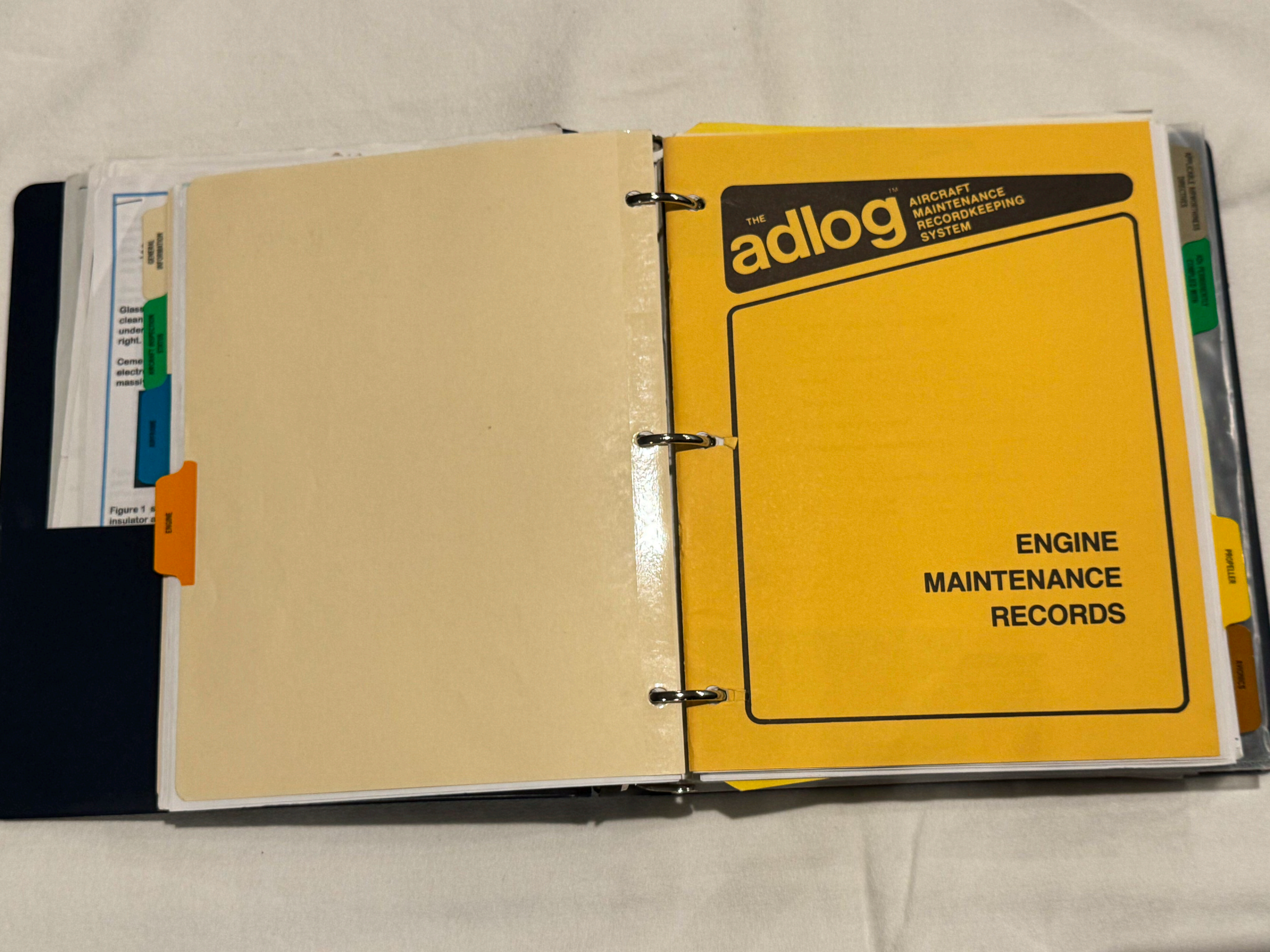
# Build Assembly

| Date | Build Ref. No. |
|---|---|
| 1/3/2023 | 29291 |

| Assembly Item |
|---|
| SK203C177P4<br>SK40S5S Phillips - Complete Kit |

| Lot Number |
|---|
| 98332 |

| Item | Description | Lot Number | Qty Needed |
|---|---|---|---|
| SK2003-42A | Gen IV Cessna Platemount - For Cloc 4000 Series Fastener (Non Adjustable) | 4839 | 14 |
| SK245-461A | Cessna Conversion Kit Receptacle - Extended Cage | 2493 | 10 |
| SK40S5-2S | Phillips Stud - Stainless - Diamondhead® - 1050 Lbs - NASM5591 | 7648 | 24 |
| SK40S5-3S | Phillips Stud - Stainless - Diamondhead® - 1050 Lbs - NASM5591 | 7646 | 2 |
| SK40S5-6S | Phillips Stud - Stainless - Diamondhead® - 1050 Lbs - NASM5591 | 7664 | 2 |
| SK-OS | PlusFlush Grommet .094 Stainless | 302657 | 20 |
| SK-O18S | PlusFlush Grommet .125 Stainless | 301385 | 4 |
| SK-316S | PlusFlush Grommet .125 Stainless | 301663 | 4 |
| SK-R4GS | Standard Duty Series Snap Ring - .038-.041 Stainless | 50032 | 26 |
| MS20426AD4-5C | Diameter 1/4 Length 5/16 | 50158 | 1 |
| AN525-832R8 | Length 1/2, Grip 1/8<br>#8-32 Washer Head Screw - Steel | 50214 | 25 |
| AN525-832R10 | #8-32 Washer Head Screw - Steel | 50238 | 25 |
| MS24693-C50 | Screw, Flat HD Machine #8-32<br>1/2 LGTH CRES 100 Degree - Stainless | 49932 | 25 |
| DP1080-17SS | 100 Deg Dimpled Washer #8 CRES<br>Similar to NAS1169C8L | 50183 | 25 |
| MS21044N08 | Standard Locknut #8-32 | 50204 | 30 |
| SK2003-AW4S | Replaces SK2003-AW Set (2 ea. AW4, 1 ea. SK2001A) Use with SK2003-14A,-24A,-42A | 2214-080822 | 5 |
| SK203-TEM1 | Alignment Template | 47964 | 1 |
| SK4177-42A.DOC | INSTRUCTIONS | 98332 | 1 |
| SK244-461 | | 49534 | 1 |


THE
adlog™
AIRCRAFT
MAINTENANCE
RECORDKEEPING
SYSTEM
ENGINE
MAINTENANCE
RECORDS

**FAA-PMA Approved**

This magneto was manufactured from all new components in accordance with FAR 21.303h under authority of MMF3226 and is airworthy. This magneto is FAA-PMA Approved for applications listed in Unison Industries' Forms L-1058 and F-1100. For LASAR® Magnetos, see L-1500.

Enter magneto model, serial number and date of installation and attach this tag to engine logbook.

Magneto Model No. 4373

Magneto Serial No. 01012844

Date of Installation 1-17-02

L-1231-B

...NE

...E RECORDS

Log No. 5

Aircraft Registration No. N30553

Engine Manufacturer Lycoming

Model O-360-A2F

Serial No. L-13658-36A

Date installed on aircraft 12-5-68

Time Between Overhauls (TBO) _____ Hours

If used on multi-engine aircraft:

☐ Right ☐ Left
☐ Front ☐ Rear

**FAA-PMA Approved**

This magneto was manufactured from all new components in accordance with FAR 21.303h under authority of MMF3226 and is airworthy. This magneto is FAA-PMA Approved for applications listed in Unison Industries' Forms L-1058 and F-1100. For LASAR® Magnetos, see L-1500.

Enter magneto model, serial number and date of installation and attach this tag to engine logbook.

Magneto Model No. 4370

Magneto Serial No. 00120560

Date of Installation 1-17-02

L-1231-B

...PUBLICATIONS INC.
www.adlog.com
...UTHOLD, NY 11971-0965
(631) 765-9375
1-800-235-6444
FAX: (631) 765-9359

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GENERAL INFORMATION

AIRCRAFT INSPECTION RECORDS

ENGINE

PROPELLER

AVIONICS

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1647.00 | 1647.00 | 1647.00 | TOTALS brought forward from previous page |
| 1-22-02 | TACH & TT: 1700.2 | | | ANNUAL INSPECTION PER CESSNA 177 SERVICE MANUAL. COMP CHECK OK- #1 74/80, #2 78/80, #3 76/80, #4 79/80. CHANGED OIL AND CLEANED SCREEN. C/W AD 96-9-10 BY INSTALLING NEW HARDENED STEEL GEARS AND SHAFT WITH NEW HOUSING. INSTALLED FACTORY NEW SLICK MAGNETOS, IGNITION HARNESS AND ALL NEW SPARK PLUGS. INSTALLED BRAND NEW OIL COOLER HOSES. WELD REPAIRED CRACK ON MUFFLER. INSTALLED 4 NEW EXHAUST GASKETS. C/W AD 98-02-08 BY INSPECTION, NO CORROSION PITS OR CRACKS FOUND. INSTALLED NEW CRANK PLUG. SERVICED ENGINE WITH 8qt AEROSHELL 30W. ENGINE WAS TEST RUN AND LEAK CHECKED. I CERTIFY THAT THIS ENGINE HAS BEEN INSPECTED IN ACCORDANCE WITH AN ANNUAL INSPECTION AND WAS DETERMINED TO BE IN A AIRWORTHY CONDITION. Dave Kapica AP311800359 IA |
| 8-20-02 | TACH 1730.56 | | | OIL CHANGE AEROSHELL 15W/50. OIL ANALYSIS - OK (SEE ENG RECEIPTS) CHECKED OIL SCREEN - NO CONTAMINENTS [signature] 2346866 A&P |
| | 1730.56 | 1730.56 | 1730.56 | SUB-TOTALS this page |
| | | | | TOTALS—Carry forward to next page |

Page No. 2

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1730.56 | 1730.56 | 1730.56 | TOTALS brought forward from previous page |
| 2-20-03 | 1747.50 | 1747.50 | 1747.50 | ANNUAL INSPECTION PER CESSNA 177 SERVICE MANUAL. COMPRESSION CHECK - #1 78/80, #2 76/80, #3 78/80, #4 78/80. CHANGED OIL AND CLEANED SCREEN. SERVICED ENGINE WITH AEROSHELL 15W/50. CLEANED AND GAPPED SPARK PLUGS. CLEANED FUEL STRAINER, TIMED ENGINE, CLEANED WITH SOLVENT, REPLACED AIR FILTER WITH BRAKET # BA5705 (ELEMENT) ENGINE HEATER EZ HEATE OIL PAN HEATER INSTALLED ENGINE TEST RUN AND LEAK CHECKED [signature] 2346866 A&P IA THIS ENGINE HAS BEEN INSPECTED IN ACCORDANCE WITH AN ANNUAL INSPECTION AND I CERTIFY THAT THIS ENGINE HAS BEEN FOUND TO BE IN AIRWORTHY CONDITION. [signature] 2346866 IA |
| 4/24/03 | 1781.0 | 1781.0 | 1781.0 | CHANGED OIL AND SEVICED WITH 6 QTS AEROSHELL 15W 50. OIL SAMPLE SENT OUT FOR ANALYSIS. [signature] #2815359 OWNER/PILOT SEL |
| 8/24/03 | 1801.03 | 1801.03 | 1801.03 | CHANGED OIL AND SERVICED WITH 6 QTS AEROSHELL 15W50. OIL SAMPLE SENT OUT FOR ANALYSIS [signature] #2815359 OWNER/PILOT SEL |
| | 1801.03 | 1801.03 | 1801.03 | SUB-TOTALS this page |
| | | | | TOTALS—Carry forward to next page |

Page No. 3

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1801.03 | 1801.03 | 1801.03 | **TOTALS** brought forward from previous page |
| 5/13/2004 | 1812.3 | | | Tach and Total Time |
| | | | | Removed number 3 cylinder for repair. Milled exhaust flange true and replaced exhaust studs (work completed by Bolduc Aviation - ANE). Reinstalled cylinder with Lycoming Gasket Kit P/N 120380K and torqued to Lycoming specifications. |
| | | | | Muffler removed and overhauled, "Yellow Tagged" (work completed by Aerospace Welding). Reinstalled muffler with new exhaust gaskets (4) P/Ns PA77611 and new Lycoming exhaust manifold nuts (8) P/Ns STD-1410. |
| | | | | Installed M20, Model 300, Crankcase Air/Oil Separator per manufacture's installation instructions. STC paperwork completed. |
| | | | | Installed J.P. Instruments, EDM-700 Engine Data Management System (with Oil Temperature Option) per manufacture's installation instructions. STC paperwork completed. |
| | | | | Replaced Bracket air intake filter element P/N BA5705. |
| | | | | Completed Annual Inspection per C177 Service Manual. Compression Check (hot) with calibrated test set: # 1 - 75/80, # 2 - 76/80, # 3 - 76/80, # 4 - 77/80. Borescoped #1, #2 and #4 cylinders, all visible wear surfaces, piston heads and valves appeared normal. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Checked engine timing – no adjustment required. Cleaned Fuel Strainer. Changed oil and inspected/cleaned oil screens. Serviced engine with Aeroshell 15w-50. All Engine Ads complete to date. Engine run-up and leak check completed. |
| | | | | A&P 2346866 IA |
| | | | | This Engine has been inspected in accordance with "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition". |
| | | | | 2346866 IA |
| | 1812.3 | 1812.3 | 1812.3 | **SUB-TOTALS** this page |
| | 1812.3 | 1812.3 | 1812.3 | **TOTALS**—Carry forward to next page |

Page No. 4

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1812.3 | 1812.3 | 1812.3 | **TOTALS** brought forward from previous page |
| 6/09/2005 | 1895.5 | | | Tach and Total Time |
| | | | | Completed Annual Inspection per C177 Service Manual. Compression Check (hot) with calibrated test set: # 1 - 76/80, # 2 - 75/80, # 3 - 73/80, # 4 - 74/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Checked engine timing – no adjustment required. Cleaned Fuel Strainer. Changed oil and inspected/cleaned oil screens. Sample of oil sent out for analysis. Serviced engine with Aeroshell 15w-50. Replaced Bracket air intake filter element P/N BA5705. All Engine Ads complete to date. Engine run-up and leak check completed. |
| | | | | 2346866 A&P |
| | | | | This Engine has been inspected in accordance with "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition". |
| | | | | 2346866 IA |
| 1/29/06 | 1914.8 | 1914.8 | 1914.8 | REINSTALLED PROPELLER MCCAULEY PART # 1A170EFA PER SERVICE MANUAL. PROP BOLTS INSPECTED AND RETORQUE PER MANUAL + CHANGE OIL AND INSPECTED/CLEANED SCREENS. SAMPLE OF OIL SENT OUT FOR ANALYSIS. SERVICED ENGINE WITH AEROSHELL 15W-50. ENGINE RUNNING OK NO LEAKS |
| | | | | 2346866 A&P |
| | 1914.8 | 1914.8 | 1914.8 | **SUB-TOTALS** this page |
| | 1914.8 | 1914.8 | 1914.8 | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1914.8 | 1914.8 | 1914.8 | **TOTALS** brought forward from previous page |
| 7/06/2006 | 1935.3 | Tach and Total Time | | Completed Annual Inspection per C177 Service Manual. Compression Check (cold) with calibrated test set: # 1 - 72/80, # 2 - 70/80, # 3 - 68/80, # 4 - 73/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Checked engine timing – no adjustment required. Cleaned Fuel Strainer. Changed oil and inspected/cleaned oil screens. Sample of oil sent out for analysis. Serviced engine with Aeroshell 15w-50. Replaced Bracket air intake filter element P/N BA5705. All Engine Ads complete to date. Engine run-up and leak check completed.<br>2346866 A&P |
| | | | | This Engine has been inspected in accordance with "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 1/15/2007 | 1954.4 | Tach and Total Time | | C/W AD# 98-2-8 by inspection, no pits or cracks found, installed new crank plug. Engine run-up and leak check completed.<br>2346866 A&P |
| | 1954.4 | 1954.4 | 1954.4 | **SUB-TOTALS** this page |
| | | | | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1954.4 | 1954.4 | 1954.4 | **TOTALS** brought forward from previous page |
| 3/7/07 | 1956.2 | 1956.2 | 1956.2 | CHANGED OIL AND SERVICED WITH 7 QTS. AEROSHELL 15W 50. (SAMPLE OF OIL SENT OUT FOR ANALYSIS)<br>Edward Standal #2815359 OWNER/PILOT SEL |
| 8/06/2007 | 1967.3 | Tach and Total Time | | Completed Annual Inspection per C177 Service Manual. Compression Check (hot) with calibrated test set: # 1 - 68/80, # 2 - 64/80, # 3 - 72/80, # 4 - 71/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Checked engine timing – no adjustment required. Cleaned Fuel Strainer. Changed oil and inspected/cleaned oil screens. Serviced engine with 7 quarts AeroShell 15w-50 oil. Replaced Bracket air intake filter element P/N BA5705. All Engine Ads complete to date. Engine run-up and leak check completed.<br>2346866 A&P |
| | | | | This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 6/25/08 | 1988.2 | 1988.2 | 1988.2 | CHANGED OIL AND INSPECTED/CLEANED OIL SCREEN (SAMPLE OF OIL SENT OUT FOR ANALYSIS). SERVICED WITH 7 QTS. AEROSHELL 15W50. Edward Standal #2815359 OWNER/PILOT SEL |
| | | | | **SUB-TOTALS** this page |
| | 1988.2 | 1988.2 | 1988.2 | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1988.2 | 1988.2 | 1988.2 | **TOTALS** brought forward from previous page |
| 8/29/2008 | 1994.3 | Tach and Total Time | | Completed Annual Inspection per C177 Service Manual. Compression Check (hot) with calibrated test set: # 1 - 68/76, # 2 - 64/78, # 3 - 72/76, # 4 - 71/72. Cleaned engine with Stoddard solvent. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Checked engine timing – no adjustment required. Cleaned Fuel Strainer. Repaired alternator wire lugs and harness (at alternator). Replaced OEM voltage regulator with Zeftronics Alternator Controller Unit # R15V00 REV A, (per STC # SA8031SW). Replaced Bracket air intake filter element P/N BA5705. All Engine Ads complete to date. Engine cleaned, run-up and leak check completed.<br>2346866 A&P<br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 4/18/09 | 1999.1 | TACH & TOTAL TIME | | CHANGED OIL AND CLEANED / INSPECTED OIL SCREEN. SERVICED WITH 7 QTS. AEROSHELL 15W50<br>#2815359 OWNER/OPERATOR |
| | 1994.3 | 1994.3 | 1994.3 | **SUB-TOTALS** this page |
| | 1994.3 | 1994.3 | 1994.3 | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1994.3 | 1994.3 | 1994.3 | **TOTALS** brought forward from previous page |
| 9/18/2009 | 2003.9 | Tach and Total Time | | Completed Annual Inspection per C177 Service Manual. Compression checked (cold) with calibrated test set: # 1 - 74/80, # 2 - 70/80, # 3 - 68/80, # 4 - 63/80. Cleaned engine with Stoddard solvent. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Checked and adjusted engine timing. Cleaned Fuel Strainer. Replaced Bracket air intake filter element P/N BA5705. Inspected/cleaned oil screens, changed oil and serviced with 7 quarts Aeroshell 15W50, sample of oil sent out for analysis. All Engine Ads complete to date. Engine run-up and leak check completed.<br>2346866 A&P<br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 3/18/10 | 2009.6 | TACH AND TOTAL TIME | | CHANGED OIL AND CLEANED / INSPECTED OIL SCREEN. SERVICE WITH 7 QTS AEROSHELL 15W50<br>#2815359 OWNER/OPERATOR |
| | 2009.6 | 2009.6 | 2009.6 | **SUB-TOTALS** this page |
| | 2009.6 | 2009.6 | 2009.6 | **TOTALS**—Carry forward to next page |

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|---|---|---|---|---|
| | 2009.6 | 2009.6 | 2009.6 | **TOTALS** brought forward from previous page |
| 9/28/2010 | 2012.8 | Tach and Total Time | | Completed Annual Inspection per C177 Service Manual. Compression checked (cold) with calibrated test set. # 1 - 68/80, # 2 - 68/80, # 3 - 68/80, # 4 - 63/80. Cleaned engine with Stoddard solvent. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Checked and adjusted engine timing. Serviced/cleaned Fuel Strainer. All Engine Ads complete to date. Engine run-up and leak check completed.<br>2346866 A&P |
| | | | | This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 11/23/2010 | 2015.4 | Tach and Total Time | | Removed engine and accessories for overhaul.<br>2346866 A+P |
| 2015.4 | 2015.4 | 2015.4 | | **SUB-TOTALS** this page |
| 2015.4 | 2015.4 | 2015.4 | | **TOTALS**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| 2/10/2011 | 2015.4 | 2015.4 | 2015.4 | **TOTALS** brought forward from previous page |
| 2/10/2011 | 2015.4 | Ø | 2015.4 | Major Overhaul accomplished on this Textron Lycoming, O-360-A2F engine, serial number L-13658-36A. Engine overhauled to factory specifications in accordance with Textron Lycoming "Overhaul Manual". Engine was completely disassembled, all internal parts and components were cleaned and inspected. All internal steel parts (except crankshaft) were Magnaflux inspected by Maxwell Aircraft Services, Inc., FAA Approved Repair Station #UF2R11L, repair order #116394.<br><br>Crankshaft, P/N 74967, S/N A55714, serviced and FAA Form 8130-3 issued by Bolduc Aviation Specialized Services Inc., FAA Approved Repair Station #KM5R993M, work order #24459. Service included Magnaflux and Ultrasonic Inspections, complied with SB#505B & SB#475B, passed SB#530B. Complied with A/D 98-2-8, completed. Installed; one crank dowel-STD1065 and one crank plug-STD1211. Cadmium plated hub flange. All crank mains and crank rods measured at "Standard Values"<br><br>All four cylinders honed and measured at Standard Values, all valves and seats ground and lapped. Cylinders reassembled with the following new parts installed; four exhaust guides-75230, and four exhaust valves-SL19001A.<br><br>Engine reassembled with the following new internal parts installed; two front main bearing-18A26093, four main bearings-18D26096, eight rod bearings-18M26104, four connecting rod bushings-LW13923, eight rod bolts-75061, eight rod nuts-SL12186, one cam shaft-SL18840, eight hydraulic tappet bodies-72877, four pistons-75089, four ring sets-SL3601SC, eight piston pins plugs-60828, eight spark plugs-UREM40E, and one Saf-Air oil drain valve-P5000. Crankshaft gear-61155, modified and installed per SB#475C. Cleaned, inspected and reinstalled oil pump body-CAM78531 and oil pump impellers-CAM18109-1/CAM18110-1. Engine assembled with all new gaskets and seals in accordance with the Textron Lycoming overhaul manual.<br><br>All Airworthiness Directives pertaining to this 0-360-A2F engine are complied with to this date. Engine not pre-oiled.<br><br>.....End.....<br><br>Bob Leaders<br>Bob Leaders, A&P #142828 |
| 2015.4 | Ø | 2015.4 | | **SUB-TOTALS** this page |
| 2015.4 | Ø | 2015.4 | | **TOTALS**—Carry forward to next page |

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|---|---|---|---|---|
| | 2015.4 | Ø | 2015.4 | **TOTALS** brought forward from previous page |
| 3/7/11 | 2015.4 Tach and Total Time<br>0 Total Time Since Overhaul | | | Reinstalled engine accessories, the following accessories were overhauled; Ford alternator model number, DOFF10300J, S/N E021203, overhauled and FAA Form 8130-3 issued by Aerotech of Louisville. FAA approved repair station #PU4R453M, work order #102461. Airborne Vacuum Pump model number, 211GG, S/N 1130106J, overhauled by Airpower Accessories LLC, work order #003592. Marvel Schebler carburetor model number; MA-4-5, S/N BUO217, overhauled and FAA Form 8130-3 issued by Mike's Aircraft Metering Service, FAA approved repair station #HK2R875K, work order #23657.<br><br>Engine and propeller reinstalled in airframe per Cessna Cardinal Service Manual. Replaced the following new parts; four Engine Mounts P/N 94011-20, two Upper Engine Mount Bolts P/N AN7-43A, two Lower Engine Mount Bolts P/N AN7-44A, four Engine Mount Stop Nuts P/N AN-363-720, one Oil Pressure Hose P/N S1236C3-0250, one Oil Cooler Hose P/N S1167-6-0260, one Oil Cooler Hose P/N S1167-6-0290, one Fuel Pressure Hose P/N S1236-3-0092, one Electric Pump to Carb Fuel Hose P/N S1236-6-0094, one Aux Pump to Carb Fuel Hose P/N S123606-0104, one Aux Pump to Electric Pump Fuel Hose P/N S1236-6-0204, one #3 Baffle Assemble P/N 1755032-1, one #2 Baffle Assemble P/N 1755029-5, one #4 Baffle Assemble P/N 175530-1, one E-Z Heat Engine Heater P/N 441. Replaced Air Filter, P/N BA5705. Serviced Engine with 8 Quarts Phillips 20W-50 Type M Mineral Oil.<br><br>2346866 A & P |
| 2015.4 | Ø | 2015.4 | | **SUB-TOTALS** this page |
| 2015.4 | Ø | 2015.4 | | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2015.4 | Ø | 2015.4 | **TOTALS** brought forward from previous page |
| 3/11/2011 | 2018.0 Tach and Total Time<br>2.6 Total Time Since Overhaul | | | Engine ground run test and flight test completed following the procedures listed in Lycoming Service Instruction #1427B.<br><br>2346866 A&P<br><br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br><br>2346866 IA |
| 4/3/2011 | 2024.0 | 9.0 | 2024.0 | DRAINED OIL, INSPECTED OIL SCREENS. SERVICED WITH 7 QUARTS PHILLIPS 20W-50 TYPE "M" MINERAL OIL. ADDED 11.2 ONCES OF "CAM GUARD."<br>#2815359 OWNER/PILOT SEL<br>Edward Stanley |
| 8/17/2011 | 2034.3 | 18.9 | 2034.3 | DRAINED OIL, INSPECTED OIL PRESSURE SCREEN. SERVICED WITH 7 QUARTS PHILLIPS 20W-50 TYPE "M" MINERAL OIL. ADDED 11.2 ONCES OF "CAM GUARD"<br>#2815359 OWNER/PILOT SEL<br>Edward Stanley |
| 2034.3 | 18.9 | 2034.3 | | **SUB-TOTALS** this page |
| 2034.3 | 18.9 | 2034.3 | | **TOTALS**—Carry forward to next page |

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2034.3 | 18.9 | 2034.3 | **TOTALS** brought forward from previous page |
| 4/30/2012 | 2055.6 | 40.2 | 2055.6 | ~~Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 70/80, # 2 - 68/80, # 3 - 65/80, # 4 - 68/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/Ns AN4027-1. Changed oil and inspected/cleaned pressure screen, serviced with 7 quarts Aeroshell 15w-50 oil, added 11.2 ounces "Cam Guard". Replaced Bracket air intake filter element P/N BA5705. Checked and adjusted engine timing. Serviced/cleaned Fuel Strainer. All Engine Ads complete to date. Engine run-up and leak check completed.~~ 2346866 A&P<br>~~This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".~~ 2346866 IA |
| 11/18/2012 | 2068.7 | 53.3 | 2068.7 | CHANGE OIL AND INSPECTED/ CLEANED PRESSURE SCREEN, SERVICED WITH 7 QUARTS AEROSHELL 15W50 OIL, ADDED 11.2 OUNCES "CAM GUARD"<br># 2815359 OWNER/PILOT SEL |
| | 2068.7 | 53.3 | 2068.7 | **SUB-TOTALS** this page |
| | 2068.7 | 53.3 | 2068.7 | **TOTALS**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2068.7 | 53.3 | 2068.7 | **TOTALS** brought forward from previous page |
| 4/25/2013 | 20071.6 | 56.2 | 2071.6 | ~~Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 68/80, # 2 - 68/80, # 3 - 65/80, # 4 - 66/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets, P/N AN4027-1. Checked engine timing – no adjustment needed. Changed oil and inspected and cleaned pressure screen, serviced with 7 quarts, Aeroshell 15w-50 oil, added 11.2 ounces "Cam Guard". Replaced Bracket air intake filter element, P/N BA5705. Checked and adjusted engine timing. Serviced /cleaned Fuel Strainer. All Engine Ads complete to date. Engine run-up and leak check completed.~~ 2346866 A&P<br>~~This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".~~ 2346866 IA |
| 11/27/2013 | 2085.0 | 69.6 | 2085.0 | CHANGED OIL AND INSPECTED/CLEANED PRESSURE SCREEN, SERVICED WITH 7 QUARTS PHILLIPS 20W50 XC OIL, PLUS 11.2 OUNCES "CAM GUARD".<br># 2815359 OWNER/PILOT SEL |
| | 2085.0 | 69.6 | 2085.0 | **SUB-TOTALS** this page |
| | 2085.0 | 69.6 | 2085.0 | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2085.0 | 69.6 | 2085.0 | **TOTALS** brought forward from previous page |
| 5/1/2014 | 2093.4 | 78.0 | 2093.4 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 68/80, # 2 - 68/80, # 3 - 66/80, # 4 - 65/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/N AN4027-1. Checked engine timing – no adjustment needed. Changed oil and inspected/cleaned pressure screen, serviced with 7 quarts Phillips 20w-50XC oil, added 11.2 ounces "Cam Guard". Replaced Bracket air intake filter element P/N BA5705. Serviced/cleaned Fuel Strainer. All Engine Ads complete to date. Engine run-up and leak check completed.<br>Ray W Chandler 2346866 A&P<br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 11-2-14 | 2101.2 | 85.8 | 2101.2 | CHANGED OIL AND INSPECTED / CLEANED PRESSURE SCREEN. SERVICED WITH 7 QUARTS PHILLIPS 20W50XC AND 11.2 OUNCES "CAM GUARD".<br>Edward Stinchcomb<br>#2815359 OWNER/PILOT SEL |
| - | | | | **SUB-TOTALS** this page |
| 2101.2 | 85.8 | 2101.2 | | **TOTALS**—Carry forward to next page |

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|---|---|---|---|---|
| | 2101.2 | 85.8 | 2101.2 | **TOTALS** brought forward from previous page |
| 5/14/2015 | 2104.5 | 89.1 | 2104.5 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 67/80, # 2 - 68/80, # 3 - 65/80, # 4 - 66/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets, P/N AN4027-1. Checked engine timing – no adjustment needed. Replaced Bracket air intake filter element, P/N BA5705. Serviced /cleaned Fuel Strainer. All Engine Ads complete to date. Engine run-up and leak check completed.<br>Ray W Chandler 2346866 A&P<br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>Ray W Chandler 2346866 IA |
| 10/12/15 | 2108.6 | 93.2 | 2108.6 | CHANGED OIL AND INSPECTED / CLEANED PRESSURE SCREEN. SERVICED WITH 7 QUARTS PHILLIPS 20W50XC AND 11.2 OUNCES OF "CAM GUARD".<br>Edward Stinchcomb<br>#2815359 OWNER/PILOT SEL |
| | | | | **SUB-TOTALS** this page |
| 2108.6 | 93.2 | 2108.6 | | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2108.6 | 93.2 | 2108.6 | **TOTALS** brought forward from previous page |
| 6/1/2016 | 2111.0 | 95.6 | 2111.0 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 68/80, # 2 - 68/80, # 3 - 67/80, # 4 - 66/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/N AN4027-1. Checked engine timing – no adjustment needed. Changed oil and inspected/cleaned pressure screen, serviced with 7 quarts Phillips 20w50XC oil, and 11.2 ounces "Cam Guard". Replaced Bracket air intake filter element P/N BA5705. Serviced/cleaned Fuel Strainer. All Engine Ads complete to date. Engine run-up and leak check completed.<br>2346866 A&P<br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 2/19/2017 | 2112.4 | 97.0 | 2112.4 | CHANGE OIL AND INSPECTED/CLEANED OIL PRESSURE SCREEN. SERVICED WITH 7 QUARTS PHILLIPS 20W50XC AND 11.2 OUNCES OF "CAM GUARD"<br>#2815359 OWNER/PILOT SEL |
| | 2112.4 | 97.0 | 2112.4 | **SUB-TOTALS** this page |
| | 2112.4 | 97.0 | 2112.4 | **TOTALS**—Carry forward to next page |

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| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2112.4 | 97.0 | 2112.4 | **TOTALS** brought forward from previous page |
| 7/1/2017 | 2119.5 | 104.1 | 2119.5 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 65/80, # 2 - 68/80, # 3 - 68/80, # 4 - 68/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets, P/N AN4027-1. Checked engine timing – no adjustment needed. Replaced Bracket air intake filter element, P/N BA5705. Serviced /cleaned Fuel Strainer. Changed oil and inspected /cleaned pressure and suction screens. Serviced with 7 quarts Phillips 20W50XC oil and 11.2 ounces "Cam Guard". All Engine ADs complete to date. Engine run-up and leak check completed.<br>2346866 A&P<br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 12/15/17 | 2121.7 | 106.3 | 2121.7 | CHANGED OIL AND SERVICED WITH 7 QTS PHILLIPS 20W50XC OIL AND 11.2 ONCES CAM GUARD.<br>#2815359 OWNER/PILOT SEL |
| | 2121.7 | 106.3 | 2121.7 | **SUB-TOTALS** this page |
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|---|---|---|---|---|
| | 2121.7 | 106.3 | 2121.7 | **TOTALS** brought forward from previous page |
| 7/11/2018 | 2127.4 | 112.0 | 2127.4 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - ~~67/80, # 2 - 68/80, # 3 - 68/80, # 4 - 65/80~~. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/N AN4027-1. Checked engine timing – no adjustments. ~~Changed oil and inspected/cleaned pressure screen, serviced~~ with 7 quarts Phillips 20w50XC oil, and 11.2 ounces "Cam Guard". Replaced Bracket air intake filter element P/N BA5705. ~~Serviced/cleaned~~ Fuel Strainer. All Engine ADs complete to date. Engine run-up and leak check completed.<br>2346866 A&P<br><br>~~This Engine has been inspected in accordance with an~~ "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 1/29/19 | 2129.3 | 113.9 | 2129.3 | OIL CHANGED, 7 QUARTS PHILLIPS 20W50XC WITH 11.2 OUNCES CAM GUARD.<br>#281535 OWNER/PILOT SEL |
| | 2129.3 | 113.9 | 2129.3 | **SUB-TOTALS** this page<br>**TOTALS**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2129.3 | 113.9 | 2129.3 | **TOTALS** brought forward from previous page |
| 7/14/2019 | 2136.65 | 123.15 | 2136.65 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 66/80, # 2 - 68/80, # 3 - 65/80, # 4 - 68/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets, P/N AN4027-1. Checked engine timing – no adjustment needed. Replaced Bracket air intake filter element, P/N BA5705. Serviced /cleaned Fuel Strainer. Changed oil and inspected /cleaned pressure and suction screens. Serviced with 7 quarts Phillips 20W50XC oil and 11.5 ounces "Cam Guard". All Engine ADs complete to date. Engine run-up and leak check completed.<br>2346866 A&P<br><br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br>2346866 IA |
| 7/10/2020 | 2142.4 | 128.9 | 2142.4 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 66/80, # 2 - 65/80, # 3 - 66/80, # 4 - 65/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets, P/N AN4027-1. Checked and engine timing – no adjustment needed. Replaced Bracket air intake filter element, P/N BA5705. Serviced /cleaned Fuel Strainer. Changed oil and inspected /cleaned pressure and suction screens. Serviced with 7 quarts Phillips 20W50XC oil and 11.5 ounces "Cam Guard". All Engine ADs complete to date. Engine run-up and leak check completed.<br>2346866 A&P |
| | 2142.4 | 128.9 | 2142.4 | **SUB-TOTALS** this page<br>**TOTALS**—Carry forward to next page |

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2142.4 | 128.9 | 2142.4 | **TOTALS** brought forward from previous page |
| 7/10/2020 | 2142.4 | 128.9 | 2142.4 | This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br><br>2346866 IA |
| 7/21/2021 | 2155.6 | 142.1 | 2155.6 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 66/80, # 2 - 68/80, # 3 - 67/80, # 4 - 65/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/N AN4027-1. Checked engine timing – no adjustments. Changed oil and inspected/cleaned pressure screen, serviced with 7 quarts Phillips 20w50XC oil, and 11.5 ounces "Cam Guard". Replaced Bracket air intake filter element P/N BA5705. Serviced/cleaned Fuel Strainer. All Engine ADs complete to date. Engine run-up and leak check completed.<br><br>2346866 A&P |
| 7/30/2022 | 2162.7 | 149.2 | 2162.7 | This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br><br>2346866 IA<br><br>Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 66/80, # 2 - 68/80, # 3 - 67/80, # 4 - 65/80. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/N AN4027-1. Checked engine timing - no adjustment needed. Changed oil and inspected/cleaned pressure screen, serviced with 7 quarts Phillips 20w50XC oil, and 11.5 ounces "Cam Guard". Replaced Bracket air intake filter element P/N BA5705. Serviced/cleaned Fuel Strainer. All Engine ADs complete to date. Engine run-up and leak check completed. |
| | 2162.7 | 149.2 | 2162.7 | **SUB-TOTALS** this page — 2346866 A&P |
| | 2162.7 | 149.2 | 2162.7 | **TOTALS**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2162.7 | 149.2 | 2162.7 | **TOTALS** brought forward from previous page |
| 7/30/2022 | 2162.7 | 149.2 | 2162.7 | This engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br><br>2346866 A&P |
| 3/14/2023 | 2165.60 | 152.1 | 2165.6 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - 68/80, # 2 - 74/80, # 3 - 69/80, # 4 - 66/80. Bore scope inspection of all cylinders revealed a hairline crack in #2 cylinder dome near lower plug boss. Removed #2 cylinder and replaced with new Superior Millennium, complete cylinder assembly/kit, P/N SL36006W-A20P. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/N AN4027-1. Removed magnetos for 500 hour inspection completed by "Aircraft Magneto Service". Reinstalled magnetos and set to correct timing. Changed oil and inspected/cleaned pressure screen, serviced with 7 quarts Phillips,Type M, 20w50 oil. Replaced Bracket air intake filter element P/N BA5705. Serviced/cleaned Fuel Strainer. All Engine ADs complete to date. Engine run-up and leak check completed.<br><br>2346866 A&P<br><br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br><br>2346866 IA |
| | 2165.6 | 152.1 | 2165.6 | **SUB-TOTALS** this page |
| | | | | **TOTALS**—Carry forward to next page |

GENERAL INFORMATION
AIRFRAME
ENGINE
PROPELLER
AVIONICS
AIRCRAFT INSPECTION STATUS
AD's PERMANENTLY COMPLIED WITH
APPLICABLE AIRWORTHINESS DIRECTIVES

Page No. 23

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2165.6 | 182.1 | 2165.6 | **TOTALS** brought forward from previous page |
| 7/01/2024 | 2169.1 | 155.6 | 2169.1 | Completed Annual Inspection per C177 Service Manual. Compression checked (warm) with calibrated test set: # 1 - ~~77/80, # 2 - 77/80, # 3 - 77/80, # 4 - 72/80~~. Removed, cleaned and gapped spark plugs, reinstalled with new copper gaskets P/N AN4027-1. Checked engine timing – no adjustments. ~~Changed oil and inspected/cleaned pressure screen, serviced~~ with 7 quarts Phillips, Type M, 20w50 oil. Replaced Bracket air intake filter element P/N BA5705. Serviced/cleaned Fuel Strainer. All Engine ADs complete to date. Engine run-up and leak check completed.<br><br>2346866 A&P<br><br>This Engine has been inspected in accordance with an "Annual Inspection" and I certify that this engine has been found to be in "Airworthy Condition".<br><br>2346866 IA |
| ~~7/01/2024~~ | | 2193 | | Drained oil, inspected oil screen, refilled crankcase with 7 quarts Phillips 20/50. A&P 2346866 |
| | | | | **SUB-TOTALS** this page |
| | | | | **TOTALS**—Carry forward to next page |

Page No. _____

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | | | | **TOTALS** brought forward from previous page |
| 8/7/25 | 2204 | 190.5 | 2204 | **Date:** 08/07/2025 **Hours:** Tach: 2204<br>**Tail#:** N30553<br>**Make:** Textron (Cessna) **Model:** 177A **S/N:** 17701322<br><br>Completed an Annual Inspection this date utilizing a checklist conforming to the scope and detail as set forth by 14 CFR, Part 43, Appendix D. Aircraft ground run completed for performance and operational check. All applicable items of Continued Airworthiness complied with. Compression: 1. 76/80, 2. 74/80, 3. 76/80, 4. 74/80. Clean, gap, test, rotate, spark plugs, inspected harness, checked timing. Installed new air filter, cleaned fuel screens, inspected intake and exhaust systems. Checked engine control travel and security, washed engine, lubed controls.<br><br>This engine was inspected in accordance with an annual inspection and determined to be in an airworthy condition.<br><br>**Name:** Barry Reid **Cert:** [illegible]<br>**Co:** Airworks **Sign:** [signature] |
| | | | | **SUB-TOTALS** this page |
| | | | | **TOTALS**—Carry forward to next page |

AIRCRAFT Magneto SERVICE

1-844-MS-MAGS
1-844-267-6247

# Invoice

| Date | Invoice # |
|---|---|
| 11/10/2022 | 37340 |

| Bill To | Ship To |
|---|---|
| EDS Services<br>Edward Standal<br>4115 Juneau Lane North<br>Plymouth, MN 55446<br>612-483-7256 | EDS Services<br>Edward Standal<br>4115 Juneau Lane North<br>Plymouth, MN 55446<br>612-483-7256 |

| P.O. No. | Terms |
|---|---|
| | |

| Item | Part Number | Qty | Description | Rate | Amount |
|---|---|---|---|---|---|
| Slick 500 Inspe...<br>500 hr.Inspecti... | 4373 | 1 | 500 hr./ Inspection Slick<br>P/N 4373<br>S/N 01012844 | 325.00 | 325.00 |
| M2556-1 | | 1 | Cotter Pin | 0.00 | 0.00 |
| AM-3215 | | 1 | Brush (Complied with SB3-08B) | 12.42 | 12.42 |
| M1346-10 | | 1 | Insulator | 3.25 | 3.25 |
| AN960-10L | | 1 | Washer | 0.30 | 0.30 |
| A-13081 | | 1 | Contacts (Complied with SB2-08B, SB 1-12) | 68.25 | 68.25 |
| ES3827 | | 1 | Rotor Gear (4. cyl) | 14.56 | 14.56 |
| M3062 | | 1 | Seal | 11.52 | 11.52 |
| M3006 | | 2 | Bearing | 26.60 | 53.20 |
| | | | | | 488.50 |

| | |
|---|---|
| x (0.0%) | $0.00 |
| | $488.50 |

| Web Site |
|---|
| tmagnetoservice.com |

Maintenance Release
N30553 C177A S/N L-13658-36A
The aircraft, airframe, aircraft engine, propeller or appliance identified below was repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service.

Pertinent details of the repairs under
Work Order # 37340 are herein attached
Dated 10 November 2022
Inspected By [signature]
Cert. # A/P 1862854

**SERVICEABLE**

Name SLICK A/C PRODUCTS
Unit SLICK MAGNETO
Part # 4373 Ser. # 01012844
Aircraft ID#
Disposition RETURN TO SERVICE
Reason For Removal 500HR INSPECTION
Removed By ED's SERVICES
AD or Service C/W SLICK SB2-08B, SB3-08B
Bulletins SB1-12 WITH NEW PARTS
Work Performed 500HR INSPECTION IAW MFR'S SERVICE INSTRUCTIONS

FAA Certificate No.

**AIRCRAFT MAGNETO SERVICE**
3995 FLYING LANE #5-5
STEVENSVILLE, MT 59870
www.aircraftmagnetoservice.com

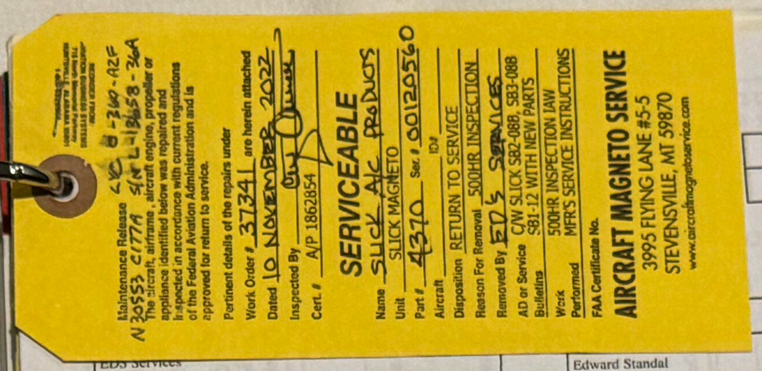
Maintenance Release
N30553 CITTA
The aircraft, airframe, aircraft engine, propeller or appliance identified below was repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service.

Pertinent details of the repairs under
Work Order # 37341 are herein attached
Dated 10 NOVEMBER 2022
Inspected By [signature]
Cert. # A/P 1862854

**SERVICEABLE**

Name SLICK A/C PRODUCTS
Unit SLICK MAGNETO
Part # 4370 Ser. # 00120560
Aircraft ID#
Disposition RETURN TO SERVICE
Reason For Removal 500HR INSPECTION
Removed By EDS SERVICES
AD or Service C/W SLICK SB2-08B, SB3-08B
Bulletins SB1-12 WITH NEW PARTS
Work 500HR INSPECTION IAW
Performed MFR'S SERVICE INSTRUCTIONS
FAA Certificate No.

**AIRCRAFT MAGNETO SERVICE**
3995 FLYING LANE #5-5
STEVENSVILLE, MT 59870
www.aircraftmagnetoservice.com



# Invoice

| Date | Invoice # |
|---|---|
| 11/10/2022 | 37341 |

EDS Services
Edward Standal
4115 Juneau Lane North
Plymouth, MN 55446
612-483-7256

Edward Standal
4115 Juneau Lane North
Plymouth, MN 55446
612-483-7256

| P.O. No. | Terms |
|---|---|
| | |

| Item | Part Number | Qty | Description | Rate | Amount |
|---|---|---|---|---|---|
| Slick 500 Inspe... | | 1 | 500 hr./ Inspection Slick | 325.00 | 325.00 |
| 500 hr.Inspecti... | 4370 | | P/N 4370 | | |
| | | | S/N 00120560 | | |
| | | 1 | Cotter Pin | 0.00 | 0.00 |
| M2556-1 | | 1 | Brush (Complied with SB3-08B) | 12.42 | 12.42 |
| AM-3215 | | 1 | Insulator | 3.25 | 3.25 |
| M1346-10 | | 1 | Washer | 0.30 | 0.30 |
| AN960-10L | | 1 | Contacts (Complied with SB2-08B, SB 1-12) | 68.25 | 68.25 |
| A-13081 | | 1 | Rotor Gear (4. cyl) | 14.56 | 14.56 |
| ES3827 | | 1 | Seal | 11.52 | 11.52 |
| M3062 | | 2 | Bearing | 26.60 | 53.20 |
| M3006 | | | | | 488.50 |

**SHIPPING ADDRESS:**
Aircraft Magneto Service
3995 Flying Lane #5-5
Stevensville, MT 59870

**PLEASE REMIT YOUR PAYMENT TO:**
Aircraft Magneto Service
PO Box 1055
Stevensville, MT 59870

| | |
|---|---|
| Sales Tax (0.0%) | $0.00 |
| **Total** | $488.50 |

| Phone # | Fax # | E-mail | Web Site |
|---|---|---|---|
| 1-844-267-6247 | 406-543-0836 | info@aircraftmagnetoservice.com | aircraftmagnetoservice.com |

"May the spark be with you"

APPLICABLE AIRWORTHINESS DIRECTIVES

ADs PERMANENTLY COMPLIED WITH

PROPELLER

AVIONICS

**AEROSPACE WELDING MINNNEAPOLIS, INC.**
12124 12th Ave. South, Burnsville, MN 55337
952-890-1511
FAA Repair Station #UWDR792L

73724

Form 100

Job: 3885

INSPECTION
Preliminary Date 4/23/2004
Hidden Damage Date 4/23/04
In Progress Date 4/23/04
Final Date 4/23/04

NAME ED STANDAL
CUST P.O. #
PAYMENT CREDIT
ADDRESS 4115 JUNEAU LN
CITY PLYMOUTH MN 55446
Make & Model CESSNA 177 FG
Part Number 1754001-25
S/N A/W/ 73724
Unit Description See Below
Registration No.

*Discrepancies Noted:*

- ☑ OUTERSHELL
- ☑ OVERBOARD
- ☐ BAFFLE
- ☑ END PLATE
- ☑ SHROUD RING
- ☑ BEADED END
- ☐ TAB
- ☐ SHAFT
- ☐ BUTTERFLY
- ☐ CLEAN & INSP.
- ☐ BALL JOINT
- ☐ BELL JOINT
- ☐ INLAY
- ☑ OVERLAY
- ☐ INLET EXTENSION
- ☐ RISER TUBE
- ☐ FLANGE
- ☐ TAILPIPE
- ☐ FLOW DIVIDER
- ☐ _____
- ☐ BELLOWS
- ☐ HEAT FINS
- ☐ STRAIGHT TUBE
- ☐ BRACKET
- ☐ BOLT FLANGE
- ☐ TOP TUBE
- ☐ CRACK WELD
- ☐ SLIP JOINT
- ☐ ELBOW
- ☐ _____

INSPECTOR EA

*Corrective Action:* ITEMS REPLACED OR REPAIRED

| REPLACED | REPAIRED | |
|---|---|---|
| ☑ OUTERSHELL | ☐ BALL JOINT | ☐ BELL |
| ☑ OVERBOARD | ☐ BELL JOINT | ☐ HEA |
| ☐ BAFFLE | ☐ INLAY | ☐ STR |
| ☑ END PLATE | ☑ OVERLAY | ☐ BRA |
| ☑ SHROUD RING | ☐ INLET EXTENSION | ☐ BOL |
| ☑ BEADED END | ☐ RISER TUBE | ☐ TOP |
| ☐ TAB | ☐ FLANGE | ☐ CRA |
| ☐ SHAFT | ☐ TAILPIPE | ☐ SLIP |
| ☐ BUTTERFLY | ☐ FLOW DIVIDER | ☐ ELBO |
| ☐ CLEAN & INSP. | ☐ ☐ _____ | ☐ ☐ |

INSPECTOR EA

*Material Type*

- ☐ 347 SS FILLER ROD
- ☑ 321 SS
- ☐ 4130 CHROMALLY
- ☐ 4130 ROD
- ☐ _____
- ☐ _____

*Approved Data*

- ☑ 43.13-1B
- ☐ MANUFACTURE MANUAL
- ☐ AIR CARRIER'S MANUAL
- ☐ _____

CUSTOMER SERVICES REQUESTED

| | LABOR COST | CODE |
|---|---|---|
| | | |
| | | |
| | | |

**Aerotech of Louisville Inc.**
2209 Watterson Trail
Louisville, KY 40299
**FAA Certified Repair Station # PU4R453M**
**Prestolite OE-A1 Starter Maintenance Release**

**Model** 12V **Part No.** MZ 4222 **Serial No.** 4N000322
**Work Order No.** 62433 **Technician** TONY ISLEY **Date** 02/13/02

*This unit was disassembled, cleaned, inspected, reassembled, and tested in accordance with current manufacturer's overhaul manual specifications and in accordance with current F.A.A. regulations concerning this unit.*

**The Following Parts Have Been (All Other Parts Are**

| Qty. | Part# | Desc. | Qty. | Part# | Desc. | Qty. | Part# | Desc. |
|---|---|---|---|---|---|---|---|---|
| 1 | MBG 2012S | BRUSH SET | | | | | | |
| 1 | X 3991 | CE BEARING | | | | | | |
| 1 | XA 997 | INT BEARING | | | | | | |
| 1 | XA 998 | INT BEARING | | | | | | |
| 1 | EBB 131A | DRIVE | | | | | | |
| 1 | MZ 298 | BUSHING | | | | | | |
| 1 | 90-2139 | PIN | | | | | | |

MAJOR OVERHAUL

*In some instances F.A.A. approved P.M.A. parts are used other than the original manufacturer's*

**AD Notes**

| AD No. | Int. | Method of Compliance | AD No. | Int. | Method of Compliance |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Service Bulletins Complied With**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**This unit is approved for return to service**

**Signature** _____ **Date** 02/13/02

GENERAL INFORMATION
AIRCRAFT INSPECTION
AIRFRAME
ENGINE
PROPELLER
AVIONICS
APPLICABLE AIRWORTHINESS DIRECTIVES
NON-MANDATORY COMPLIED WITH

ENGINE | AIRFRAME | AIRCRAFT INSPECTION | GENERAL INFORMATION

JUAHREVO ROLAN

# FAA FORM 8130-3

AIRWORTHINESS APPROVAL TAG

U.S. Department of Transportation

**Federal Aviation Administration**

1. UNITED STATES

2.

3. System Tracking Ref. No.

**INV #:**

4. Organization: **Aerotech of Louisville, Inc. 2209 Watterson Trail Louisville, KY 40299**

5. Work Order, Contract, or Invoice Number: **W/O: 62433**

| 6. Item | 7. Description | 8. Part Number | 9. Eligibility * | 10. Quantity | 11. Serial/Batch Number | 12. Status/Work |
|---|---|---|---|---|---|---|
| 1 | PRESTOLITE STARTER | MZ-4222 | TO BE VERIFIED BY INSTALLER | 1 | S/N 4N000322 | OVERHAULED |

13. Remarks

**This item was overhauled by Aerotech of Louisville, Inc. on W/O # 62433 Dated 02/13/02 FAA approved repair station number PU4R453M.**
overhauled **unit per overhaul manual** OE-A1

*Limited life parts must be accompanied by maintenance history including total time/total cycles/time since new.*

New
Newly Overhauled [X]

Certifies that the new or newly overhauled part(s) identified above, except as otherwise specified in block 13 was (were) manufactured in accordance with FAA approved design data and airworthiness.

**NOTE:** In case of parts to be exported, the special requirements of the importing country have been met.

**Return to Service in Accordance with FAR 43.9**

Certifies that the work specified in Block 13 (or attached) above was carried out in accordance with FAA airworthiness regulations and in respect to the work performed the part(s) is (are) approved for return to service.

15. Signature:

16. FAA Authorization No:

17. Name *(Typed or Printed)*:

18. Date:

20. Authorized Signature:

21. Certificate Number: **PU4R453M**

22. Name *(Typed or Printed)*: **JOHN C EVANS**

23. Date:

* (Optional) Installer must cross check eligibility with applicable technical data.

FAA Form 8130-3 (11-93)

AVIONICS | PROPELLER | ADs PERMANENTLY COMPLIED WITH | APPLICABLE AIRWORTHINESS DIRECTIVES

# Aircraft Engine Heater

**Models** ☐ 270 ☐ 360 ☐ 440 ☐ 441 ☐ 442 ☐ 540
☐ 441/220 ☐ 540/220

**SURE RELIABLE STARTS TO 40°F BELOW ZERO**

FAA Accepted - NO STC Required

**E-Z HEAT, INC.**
SPECIALIZING IN ENGINE HEATERS
MADE IN USA

CHETEK,WI 54728
www.e-zheat.com

0,
erature
ication.

ermanent
to
package.

ees F or
heating
the

After removing the protective paper from the adhesive on the pad, plug the heating pad into a 110 volt power source for "up to 5 SECONDS" thus preheating the adhesive.

CAUTION

DO NOT TOUCH THE HEATING PAD WHEN IT IS CONNECTED TO A POWER SOURCE. IF THE HEATING PAD IS PLUGGED IN "TOO LONG" BEFORE INSTALLATION, DAMAGE TO THE PAD CAN RESULT.

After unplugging the pad from the power source, press the pad into place on the oil sump. After the pad is in contact with the oil sump, you can plug the pad in to the power source for "up to 10 SECONDS" at a time, several times if necessary, to aid the adhesive in the bonding process. Again, do not touch the pad while the pad is connected to the power source. Complete the installation of the heating pad following the general instructions.

If you have any questions regarding your installation, please contact E-Z Heat, Inc. at 1-800-468-4459 before proceeding with the installation of the proven E-Z Heat Aircraft Engine Heater.

## PRODUCT ADVANTAGES

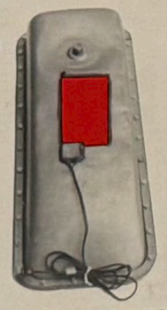
1. FAA approved. No STC required.
2. Easy installation, applied directly on the bottom or side of oil sump.
3. Reduces engine wear. Allows easy flow of engine oil to vital components in extreme sub-zero weather.
4. No cutting of hoses, removing of cylinder probes.
5. Heats 12 quarts of oil from -40°F to +60°F in 1 hour.
6. Uses less than 300 watts, compared to many engine heaters that use 800-1600 watts.
7. Heats entire engine in about 4 hours.
8. Thermostatically controlled to monitor engine oil temperature (cycles at 165°F).
9. No danger of oil carbonization.
10. Thin, flexible pad easily contours to virtually any size oil pan.
11. Permanent. Once applied, unit need not be removed.

## INSTALLATION INSTRUCTIONS
### for Models 270 - 360 - 440 - 441 - 442 - 540 - 441/220 & 540/220 Aircraft Engine Heaters

1. Run engine up before installation, this heats engine up so pressure sensitive adhesive will function properly during installation. Oil sump needs to be 70°F or above.
2. Using a degreasing solvent (lacquer thinner), clean bottom of oil sump so **all paint, grease and oil contaminants are removed from area where pad is to be positioned.** **INSTALLATION TIP:** First go over with sand paper or steel wool to remove residue or any buildups.
3. If any embossed numbers are present where pad is to be positioned, file these numbers flush with bottom of sump.
4. Remove paper from backside of heater pad and press pad on bottom part of oil sump where cleaned. **NOTE: Application to side of sump is acceptable when oil level is above heating pad.**
5. Using squeegee provided, squeeze **ALL** air from between oil sump and heating pad.
6. After all air is removed, apply pressure on pad for at least 15 minutes to achieve maximum bonding strength. **(THIS IS IMPORTANT.)**
7. After pressure is removed, apply a sealing bead of (PERMATEX PART #77B ULTRA BLUE) adhesive all around outside edge of heating pad.
8. Allow 24 hours of curing time before use.

**Model 270** - 3″ x 5¾″ x 1/32″ pad
**Model 360** - 5″dia.circle x 1/32″ pad
**Model 440** - 4″ x 4″ x 1/32″ pad
**Model 441** - 3⅞″ x 5″ x 1/32″ pad
**Model 442** - 2½″ x 13″ x 1/32″ pad
**Model 540** - 2 pads
(1) 3″ x 5¾″ x 1/32″
(2) 3″ x 4″ x 1/32″

**CAUTION:** DO NOT plug engine heater in before installation. Damage to heater will occur.



**EASY INSTALLATION**

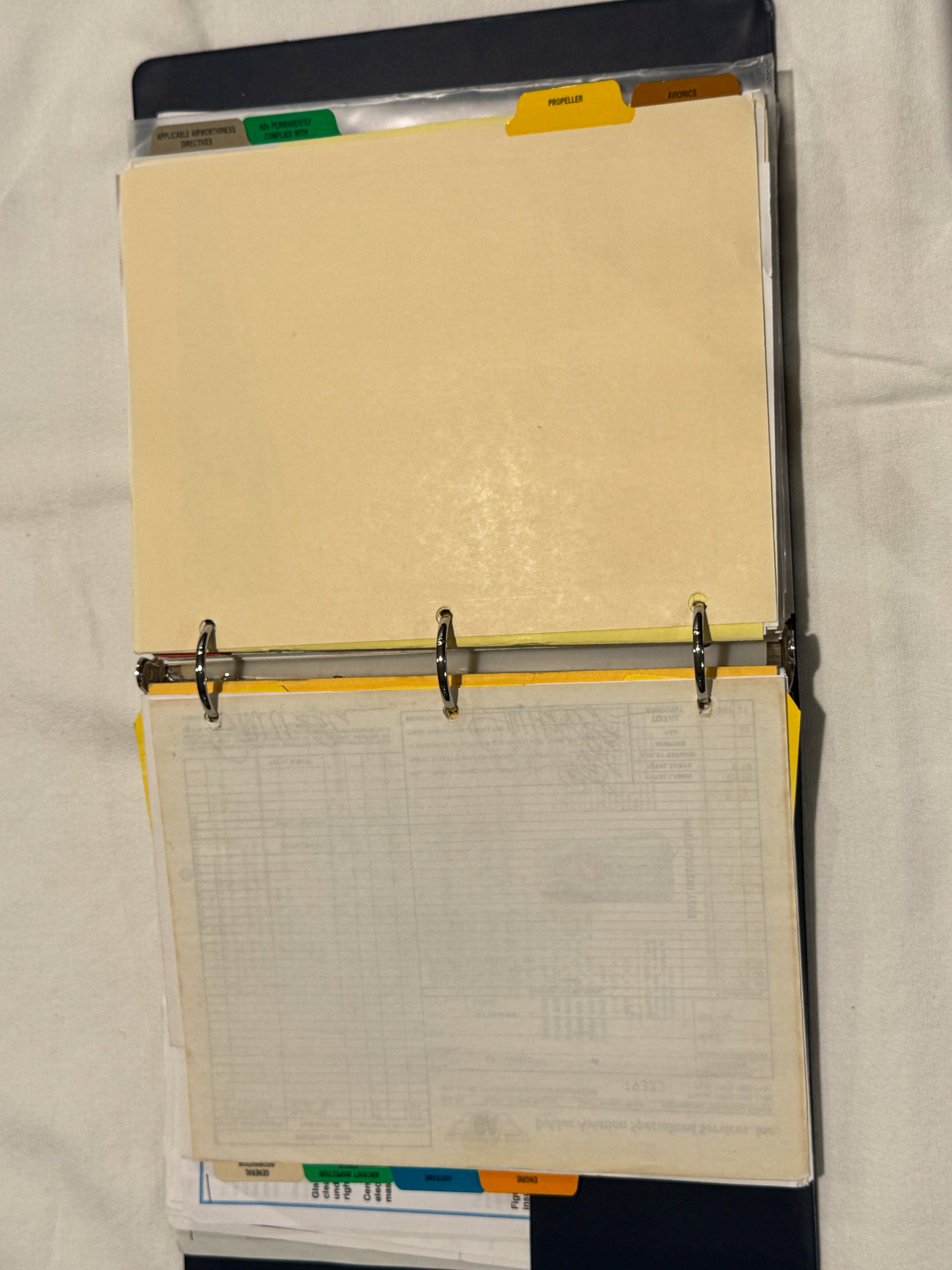
**DO NOT CUT OR TRIM PAD.**

### TERMS OF LIMITED WARRANTY

All E-Z Heat Engine Heaters are warranted for two years from date of sale to the original consumer against defects in workmanship and materials. The manufacturer's only obligation shall be to repair or replace at the manufacturer's option the product provided it is returned transportation prepaid to the factory within two years from date of sale to the original consumer. Defects or failure due to incorrect installation, improper voltage, improper usage or handling, or by any other conditions beyond our control, as to any and all of which manufacturer will be sole judge, are specifically excluded from this warranty. This warranty gives you specific legal rights. You may also have implied warranty rights which may vary from state to state. No other liability of any kind, arising from the use of the product whether defective or not, is assumed.

**MATERIAL USED**

| QUAN | PART NUMBER | DESCRIPTION | LIST PRICE | NET TOTAL |
|---|---|---|---|---|
| 1 | 5/16x18 | Helicoil | 1 75 | 1 75 |
| 2 | 31C12F03 | Studs, Exh | 3 92 | 7 84 |
| | | | | |
| | | | | |
| | | | |


APPLICABLE AIRWORTHINESS DIRECTIVES
ADs PERMANENTLY COMPLIED WITH
PROPELLER
AVIONICS
GENERAL INFORMATION
AIRCRAFT INSPECTION
AIRFRAME
ENGINE

THE adlog™ AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

# PROPELLER MAINTENANCE RECORDS

adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

# PROPELLER MAINTENANCE RECORDS

Log No. _____

Aircraft Registration No. N30553

Propeller Manufacturer McCauley

Hub Model 1A170EFA/7659

Blade Design No. _____

Hub Serial No. D73188

Blade Serial No's.

1. _____
2. _____
3. _____
4. _____

Pitch Range:

High _____ Low _____

Feather _____ Reverse _____

Governor Manufacturer _____

Model No. _____

Serial No. _____

Date installed on aircraft _____

Time Between Overhauls (TBO) _____ Hours

If used on multi-engine aircraft:

☐ Right ☐ Left

☐ Front ☐ Rear

**(All applicable information must be filled in)**

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Page No. 1

**MAINTENANCE RELEASE**

TYPE OF UNIT Propeller SERIAL No. P73188
MANUFACTURER McCauley
MODEL 1A170/EFA 7659
The component identified above was repaired and inspected in accordance with current Regulations of the Federal Aviation Administration and is approved for return to service. Pertinent details of the repair are on file at this agency under
WORK ORDER No. 111220 DATE 1-26-06 FOR
SIGNED Carl E. Maxwell

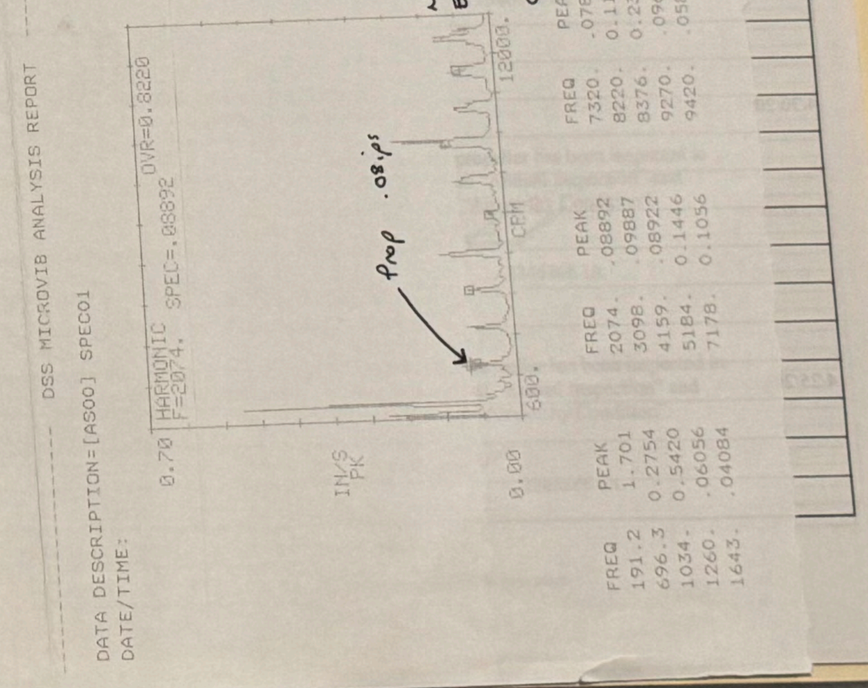
**MAXWELL AIRCRAFT SERVICE, INC.**
CRYSTAL AIRPORT • MINNEAPOLIS, MINN. 55429
FAA Approved Repair Station No. UF2R211L (over)

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1914.8 | Ø | 1914.8 | TOTALS brought forward from previous page |
| 07/06/2006 | 1935.3 | Tach and Total Time in Service<br>20.5 Total Time Since Overhaul | | |
| | | | | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and |

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| 2/20/03 | 174[illegible] | | | [illegible] inspected [illegible] annual [illegible] in |
| | | | | [illegible] A&P 2346866 IA |
| 5/13/04 | 1802.03 | 1802.03 | 1801.03 | This propeller has been inspected in accordance with an "Annual Inspection and found to be in Airworthy Condition<br>[illegible] A&P 2346866 IA |
| 6/22/04 | 1818.6 | | | Checked Dynamic Prop balance. No need for Corrective balancing this date.<br>[illegible] A&P 130580057 |
| 6/9/05 | 1895.5 | 1895.5 | 1895.5 | This propeller has been inspected in accordance with an Annual Inspection and found to be Airworthy<br>[illegible] 2356866 IA |
| 1/26/06 | 1914.8 | -0- | | Reconditioned propeller & changed pitch to 59 in accordance with McCauley Manual 230720 Rev. 6. Complied with McCauley Bulletin 195B. Maxwell Aircraft Service, Inc. Mpls, MN CRS#UF2R211L, Repair Order No. 111220.<br>Carl E. Maxwell 2386511 |
| | | | | SUB-TOTALS this page |
| | 1914.8 | 0 | 1914.8 | TOTALS—Carry forward to next page |

Page No. 2

No need for Corrective Balancing this date
6/22/04 Tach 1818.6
[illegible] A&P 130580057



Page No. 1

**MAINTENANCE RELEASE**

TYPE OF UNIT Propeller SERIAL No. R93188
MANUFACTURER McCauley
MODEL 1A170/EFA 7659

The component identified above was repaired and inspected in accordance with current Regulations of the Federal Aviation Administration and is approved for return to service. Pertinent details of the repair are on file at this agency under WORK ORDER No. 111220 DATE 1-26-06 FOR
SIGNED [signature]

**MAXWELL AIRCRAFT SERVICE, INC.**
CRYSTAL AIRPORT • MINNEAPOLIS, MINN. 55429
FAA Approved Repair Station No. UF2R211L (over)

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 1914.8 | Ø | 1914.8 | **TOTALS** brought forward from previous page |
| 07/06/2006 | 1935.3 | Tach and Total Time in Service<br>20.5 Total Time Since Overhaul | | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>[signature] 2346866 IA |
| 08/06/2007 | 1967.3 | Tach and Total Time in Service<br>52.5 Total Time Since Overhaul | | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>[signature] 2346866 IA |
| 08/29/2008 | 1994.3 | Tach and Total Time in Service<br>79.5 Total Time Since Overhaul | | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>[signature] 2346866 IA |
| 09/18/2009 | 2003.9 | Tach and Total Time in Service<br>89.1 Total Time Since Overhaul | | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>[signature] 2346866 IA |
| | 2003.9 | 89.1 | 2003.9 | **SUB-TOTALS** this page |
| | 2003.9 | 89.1 | 2003.9 | **TOTALS**—Carry forward to next page |

Page No. 2

APPLICABLE AIRWORTHINESS DIRECTIVES

AD's PERMANENTLY COMPLIED WITH

AVIONICS

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2003.9 | 89.1 | 2003.9 | **TOTALS** brought forward from previous page |
| 09/28/2010 | 2012.8 | 97.0 | Tach and Total Time in Service<br>Total Time Since Overhaul | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 03/11/2011 | 2018.0 | 102.2 | Tach and Total Time in Service<br>Total Time Since Overhaul | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition"<br>2346866 IA |
| 4/30/2012 | 2055.6 | 140.8 | Tach and Total Time in Service<br>Total Time Since Overhaul | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 4/25/2013 | 2071.6 | 156.8 | 2071.6 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| | 2071.6 | 156.8 | 2071.6 | **SUB-TOTALS** this page |
| | 2071.6 | 156.8 | 2071.6 | **TOTALS**—Carry forward to next page |



| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2071.6 | 156.8 | 2071.6 | **TOTALS** brought forward from previous page |
| 5/1/2014 | 2093.4 | 178.6 | 2093.4 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 5/14/2015 | 2104.5 | 189.7 | 2104.5 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 6/1/2016 | 2111.0 | 196.2 | 2111.0 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| 7/1/2017 | 2119.5 | 204.7 | 2119.5 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition".<br>2346866 IA |
| | 2119.5 | 204.7 | 2119.5 | **SUB-TOTALS** this page |
| | | | | **TOTALS**—Carry forward to next page |

GENERAL
AIRCRAFT INSPECTION
ENGINE
PROPELLER
AVIONICS
AD's PERMANENTLY COMPLIED WITH
APPLICABLE AIRWORTHINESS DIRECTIVES

Page No 5

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | 2119.5 | 204.7 | 2119.5 | **TOTALS** brought forward from previous page |
| ~~7/11/2018~~ | ~~2127.4~~ | ~~212.6~~ | ~~2127.4~~ | ~~I certify that this propeller has been inspected in accordance~~ with an "Annual Inspection" and found to be in an "Airworthy Condition". 2346866 IA |
| 7/14/2019 | 2136.65 | 221.85 | 2136.65 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". 2346866 IA |
| 7/10/2020 | 2142.4 | 227.6 | 2142.4 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". 2346866 IA |
| 7/21/2021 | 2155.6 | 240.8 | 2155.6 | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition" 2346866 IA |
| ~~7/30/2022~~ | ~~2162.7~~ | ~~247.9~~ | ~~2162.7~~ | I certify that this propeller has been inspected in accordance with an "Annual Inspection" and found to be in an "Airworthy Condition". 2346866 IA |
| | 2162.7 | 247.9 | 2162.7 | **SUB-TOTALS** this page |
| | | | | **TOTALS**—Carry forward to next page |

Page No 6

| DATE | TOTAL TIME IN SERVICE | TOTAL TIME SINCE OVERHAUL | TACH OR RECORDING METER TIME | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|---|
| | | | | **TOTALS** brought forward from previous page |
| 3/14/2023 | 2165.6 | 250.6 | 2165.6 | I certify that this propeller has been inspected in ccordance with an "Annual Inspection" and found to be in an "Airworthy Condition". ~~2346866 IA~~ |
| 7/01/2024 | 2169.1 | 254.1 | 2169.1 | ~~I certify that this propeller has been inspected in ccordance~~ with an "Annual Inspection" and found to be in an "Airworthy Condition". 2346866 IA |
| 8/7/25 | 2204 | 289 | 2204 | **Date:** 08/07/2025 **Hours:** Tach: 2204 **Tail#:** N30553 **Make:** Textron (Cessna) **Model:** 177A **S/N:** 17701322 Annnual/100HR Inspection. This propeller was inspected in accordance with an annual inspection and determined to be in an airworthy condition. **Name:** Barry Reid **Co:** Airworks **Cert:** AP32608791A **Sign:** |
| | | | | **SUB-TOTALS** this page |
| | | | | **TOTALS**—Carry forward to next page |

GENERAL
ENGINE
PROPELLER
AVIONICS

THE adlog™ AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

# AVIONICS MAINTENANCE RECORDS

GENERAL

AIRCRAFT INSPECTION

AIRFRAME

ENGINE

PROPELLER

AVIONICS

AIRCRAFT AIRWORTHINESS DIRECTIVES

AD'S PERIODICALLY COMPLIED WITH

GENERAL

ROTORCRAFT

WEIGHT

ENGINE

PROPELLER

AVIONICS

APPLICABLE AIRWORTHINESS DIRECTIVES

AD PERIODICALLY COMPLIED WITH

adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

# AVIONICS
# MAINTENANCE RECORDS
(including transponder biennial checks)

Log No. 1

Aircraft Registration No. 50553

Aircraft Manufacturer CESSNA

Model 177A

Serial No. 17701322

## EQUIPMENT LISTING
List all installed avionics, autopilot and flight director equipment.

| | Mfg. | Model | Serial No. |
|---|---|---|---|
| 1. | NARCO | AT150 | 31295 |
| 2. | KR 86 KING | KR86 | |
| 3. | ALLIED SIGNAL | KLX 135A | |
| 4. | ALLIED SIGNAL | KY 97A | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
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| 12. | | | |
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| 14. | | | |
| 15. | | | |
| 16. | | | |
| 17. | | | |
| 18. | | | |
| 19. | | | |
| 20. | | | |

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Page No. 1

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | | | KALAMAZOO AIRCRAFT, INC.<br>AIRCRAFT MAINTENANCE, INSPECTION & REPAIR<br>2729 E. MILHAM RD. PORTAGE, MI. 49002<br>616 381 0790 REPAIR STATION NO. K9AR289N<br><br>I CERTIFY THAT THE ATC TRANSPONDER(S) WERE TESTED AND INSPECTED AS PER 91.413 IAW PART 43, APPENDIX F.<br>TRANSPONDER #1 S/N 31295<br>TRANSPONDER #2 S/N ——<br>AUTOMATIC ALTITUDE REPORTING SYSTEM TESTED AND INSPECTED AS PER 91.411 IAW PART 43, APPENDIX E, PARAGRAPH C TO 20,000. FEET.<br>SIGNATURE Ralph Michalla DATE 10/12/01<br>FORM KA104A |
| | | | KALAMAZOO AIRCRAFT, INC.<br>AIRCRAFT MAINTENANCE, INSPECTION & REPAIR<br>2729 E. MILHAM RD. PORTAGE, MI. 49002<br>616 381 0790 REPAIR STATION NO. K9AR289N<br><br>I CERTIFY THAT THE STATIC SYSTEM(S) WERE TESTED AND INSPECTED AS PER 91.411 IAW PART 43, APPENDIX E, PARAGRAPH A.<br>SIGNATURE Ralph Michalla DATE 10/12/01<br>FORM KA104B |
| | | | KALAMAZOO AIRCRAFT, INC.<br>AIRCRAFT MAINTENANCE, INSPECTION & REPAIR<br>2729 E. MILHAM RD. PORTAGE, MI. 49002<br>616 381 0790 REPAIR STATION NO. K9AR289N<br><br>I CERTIFY THAT THE ALTIMETER (S) WERE TESTED AND INSPECTED AS PER 91.411 IAW PART 43, APPENDIX E, PARAGRAPH B TO: 20000. FT.<br>BY Ralph Michalla DATE: 10/12/01<br>LEFT ALTIMETER S/N 1497<br>RIGHT ALTIMETER S/N ——<br>FORM KA104C |

Page No. 2

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| 2/4/05 | Jack | 1886.3 | Replaced altimeter - Aerosonic 101720-01545<br>S/N C128167<br>I certify that the altimeter, static system, transponder, and altitude reporter test required by FARs 91.411, 91.413 & 91.217 have been performed and found to be within the limits of FAR 43 appendices E & F and AC 43.6a. TESTED TO 20000 Feet.<br>Transponder: Mfg. None Model AT150 S/N 31295<br>Encoder: Model TCE P/N 0120-30 S/N 35597 |

1. Approving National Aviation Authority/Country: FAA/United States

2. **AUTHORIZED RELEASE CERTIFICATE**
FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG

3. Form Tracking Number: 31,213

4. Organization Name and Address: Midwest Aircraft Instruments Inc. 4215 W. 220th St., Jordan MN 55352

5. Work Order/Contract/Invoice Number: 23,197

| 6. Item: | 7. Description: | 8. Part Number: | 9. Eligibility: * | 10. Quantity: | 11. Serial/Batch Number: | 12. Status/Work: |
|---|---|---|---|---|---|---|
| 1 | ALTIMETER | 101720-01545 | To Be Determined By Installer | 1 Ea | C128167 | OVERHAUL |

13. Remarks:

SEE W.O. 31,213

14. Certifies the items identified above were manufactured in conformity to:
☐ Approved design data and are in a condition for safe operation.
☐ Non-approved design data specified in Block 13.

19. ☒ 14 CFR 43.9 Return to Service ☐ Other regulation specified in Block 13
Certifies that unless otherwise specified in Block 13, the work identified in Block 12 and described in Block 13 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

| 15. Authorized Signature: | 16. Approval/Authorization No.: | 20. Authorized Signature: | 21. Approval/Certificate No.: K05R995M |
|---|---|---|---|
| 17. Name (Typed or Printed): | 18. Date (m/d/y): | 22. Name (Typed or Printed): Russell J. Krautkremer | 23. Date (m/d/y): 6/4/03 |

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts parts/components/assemblies from the airworthiness authority of the country specified in Block 1.

Statements in Blocks 14 and 19 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

FAA Form 8130-3 (6-01) *Installer must cross-check eligibility with applicable technical data. NSN: 0052-00-012-9003

CRS # BDKR393C STC Aviation Inc. 1544 45th Ave SE St. Cloud MN 56304

Page No. 1

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | | | KALAMAZOO AIRCRAFT, INC.<br>AIRCRAFT MAINTENANCE, INSPECTION & REPAIR<br>2729 E. MILHAM RD. PORTAGE, MI. 49002<br>616 381 0790 REPAIR STATION NO. K9AR289N<br><br>I CERTIFY THAT THE ATC TRANSPONDER(S) WERE TESTED AND INSPECTED AS PER 91.413 IAW PART 43, APPENDIX F.<br>TRANSPONDER #1 S/N 31295<br>TRANSPONDER #2 S/N ____ |

Page No. 2

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| 2/4/05 | Tach | 1886.3 | Replaced altimeter - Aerosonic 101720-01545<br>S/N C128167<br><br>I certify that the altimeter, static system, transponder, and altitude reporter test required by FARs 91.411, 91.413 & 91.217 have been performed and found to be within the limits of FAR 43 appendices E & F and AC 43.6a. TESTED TO 20000 Feet.<br>Transponder: Mfg. Vacco Model AT150 S/N 31295<br>Encoder: Model TCI P/N 0120-30 S/N 35597<br>Altimeter #1: Mfg. Aerosonic P/N 101720 S/N C128167<br>Altimeter #2: Mfg. ____ P/N ____ S/N ____<br>CRYSTAL SHAMROCK QB2R103L<br>Signature [signature] for QB2R103L |
| 11-5-09 | 2006.6 | Tach | certify that the altimeter, static system, transponder and altitude reporter test required by FARs 91.411, 91.413 & 91.217 have been performed and found to be within the limits of FAR 43 appendices E & F and AC 43.6a.<br>TESTED TO ____ Kft.<br>Altimeter Model ____ #1 S/N ____ #2 S/N ____<br>Transponder Model AT150 #1 S/N 31295 #2 S/N ____<br>Altitude Reporter ____ #1 S/N ____ #2 S/N ____<br>Signed [signature] Date 11-5-09<br>STC Aviation Inc., St. Cloud, MN 56304<br>CRS BDKR393C |

Transponder check

Date: 11/17/2011; Aircraft: N30553; Type: 177A; S/N: 17701322
Performed transponder test on model AT-150 s/n 31295.
I certify that the transponder test required by FAR 91.413 has been performed and found to be within the limits of FAR43 appendix E par 2(c) and appendix F.

MAINTENANCE RELEASE
The component identified was repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service.

Name: Jim Fairchild Cert. Number: 2429051 R&I

Sign: [signature] Date: 11/17/2011

CRS # BDKR393C STC Aviation Inc. 1544 45th Ave SE St. Cloud MN 56304

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | | | Date: 11/27/2013; Aircraft: N30553; Type: 177A; S/N: 17701322<br>Performed transponder test on model AT150 s/n 31295.<br>I certify that the transponder test required by FAR 91.413 has been performed and found to be within the limits of FAR43 appendix E par 2(c) and appendix F.<br>MAINTENANCE RELEASE<br>The component identified was repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service.<br>Name: Jim Fairchild Cert. Number: 2429051 R&I<br>Sign: Jim Fairchild Date: 11/27/2013<br>CRS # BDKR393C STC Aviation Inc. 1544 45th Ave SE St. Cloud MN 56304 |

NORTHPOINT 16384 Airport Road Brainerd, MN 56401 (218) 829-3398

Date: 8/14/2024 Aircraft: N30553; Type: Cessna 177; S/N: 17701322; Hobbs:; Tach: 2170.00

Shop Order # AV-24-1844

I certify that the transponder and altitude reporter tests required by FAR 91.413 and 91.217 have been performed and found to be within the limits of FAR 43 appendix F. (VFR ONLY)

Altimeter PN 0172001645 SN C128167
Transponder PN C74C SN 31295

The aircraft, airframe, aircraft engine, propeller, or appliance identified above was repaired and inspected in accordance with current Regulations of the Federal Aviation Administration and is approved for return to service.
Pertinent details of the repair are on file at this repair station under the shop order above.

Name William Smith Signature _____ NorthPoint Aviation C.R.S 6DVR982C



| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| 7/10/20 | 2142.4 | 2142.4 | Installed Uavionix ADS-B Out Tailbeacon per manufacturers STC instruction manual. Change to Weight and Balance is negligable. Passed FAA Airborne UAT Analysis. FAA Form 337 submitted.<br>Perry W Clark 2346866 A&P |

tailBeacon Installation and Configuration Log

| | |
|---|---|
| Date: 7-10-2020 | By: PERRY W. CLARK |
| Aircraft Information | |
| Make: CESSNA | Model: C177A |
| Serial Number: 17701322 | Registration Number: N30553 |
| tailBeacon Information | |
| Serial Number: 2000669 | Wi-Fi SSID: Beacon-E5C5 |
| tailBeacon Configuration | |
| Transmit Enabled: ☒ On ☐ Off | Anonymous Mode: ☐ On ☒ Off |
| Call Sign: N30553 | ICAO Number (hex): A33508 |
| $V_{SO}$ (knots): 48 | ADS-B In Capability: ☒ 978 ☐ 1090 |
| Position Light: ☒ On ☐ Off | |
| Emitter Type: LIGHT AIRPLANE | Transponder Mon. Threshold: 35 |
| Aircraft Length: L ≤ 15 | Aircraft Width: W ≤ 35 |
| GPS Antenna Offset (Lat): Ø m | GPS Antenna Offset (Lon): 1Ø m |
| Customer Information | |
| Name: EDWARD D STANDAL | |
| Email: edstandal@hotmail.com | |
| Telephone: 612 483-7256 | |
| Address: 4115 JUNEAU LN. N.<br>PYMOUTH, MN.<br>55446-2723 | |

Page No. 5

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|

N30553 Model: 177A WO# AV-24-105110
Tach: 2189.12 S/N: 17701322 Date: 2/19/2025

TREGO-DUGAN AVIATION

Removed KLX 135A PN 060-01029-0703 SN 120451, and associated wiring. Installed GNS 530W PN 011-01064-40 SN 7E014856, GPS antenna GA35 PN 013-00233-00 SN 221637, new Klixon series 7277-2-XX breakers and associated wiring IAW Garmin STC SA01018LA-D and GNS 530W Garmin manual 190-00357-02. Installed the following breakers IAW AC 43-13 1B CH 11 and Cessna 177 Service manual. Installed 7277-2-10 breaker as Comm1 and 7277-2-5 breaker as NAV/GPS. Operational check good.

Removed Directional gyro PN C661002-0501 SN 7124A, horizon gyro PN C661001-0503 SN 7B75, vacuum pump PN 211CC SN 113010362 and associated lines. Installed G5 ADI PN 011-03809-00 SN 48Q00226, G5 HSI PN 011-03809-00 SN 48Q002144, GMU 11 PN 011-04349-01 SN 56512435L, GAD 29 PN 011-03236-21 SN 6V9503002, new Klixon series 7277-2-XX breakers and associated wiring IAW Garmin STC SA01018WE and G5 Garmin manual 190-01112-10. Installed the following breakers IAW AC 43-13 1B CH 11 and Cessna 177 Service manual. Installed three 7277-2-5 breakers as G5 ADI, G5 HSI and GAD 29. Operational check good.

Removed Existing Breakers and installed new klixon series 7277-2-XX breakers in new Breaker panel setup. New panel Fabricated from .040 2024 T3 Aluminum Cut and shaped and secured to existing breaker location. replaced breakers for existing systemsin matching current amp ratings. the following work was performed IAW AC 43-13 1B CH 11 and Cessna 177 Service manual. the following Breakers have been installed 7277-2-10 for the existing Bendix King KT 197A, 7277-2-2 for the existing JPI edm 700, 7277-2-2 For the existing Marker Beacon, 7277-2-5 For existing Narco AT150 Transponder and Encoder.

Removed Existing Blind Encoder P/N SSD 120-30 S/N 35509 and replaced with new SSD120-35C S/N SBC16249. installed I.A.W Trans-Cal Industries, INC Installation Manual 881625 REV A post calibration performed and system check good.

Tested and inspected the Pilots Altimeter, Garmin G5 ADI and Garmin G5 HSI and static pressure system I/A/W Title 14 CFR Part 91.411 and found to comply with FAR 43 Appendix E.

Tested and inspected the ATC transponder system I/A/W 14 CFR Part 91.413(a) and found to comply with Title 14 CFR Part 43, Appendix F.

The above maintenance hse been inspected and was determined to airworthy per the requirements ofFAR 145.213

See 337 Dated this date.

Signed _____
For Trego-Dugan Aviation, CRS HVJR859E
Central Nebraska Regional Airport GRI

ADI

Trego/Dugan Aviation GRI FAA CRS # HVJR859E
Model 177A S/N 17701322 Date 2-25-25
Nomenclature: Altimeter Pressure

| Test Pt. Feet | IND Reads at 25° C | Test Pt. Feet | IND Reads at 25° C |
|---|---|---|---|
| -1,000 | -990 | 10,000 | 10010 |
| 000 | 10 | 12,000 | 12010 |
| 500 | 510 | 14,000 | 14010 |
| 1,000 | 1010 | 16,000 | 16010 |
| 1,500 | 1510 | 18,000 | 18010 |
| 2,000 | 2010 | 20,000 | 20010 |
| 3,000 | 3010 | | |
| 4,000 | 4010 | | |
| 6,000 | 6010 | | |
| 8,000 | 8010 | | |

Tested by _____ for HVJR859E

Page No.

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|

HSI

Trego/Dugan Aviation GRI FAA CRS # HVJR859E
Model 177A S/N 17701322 Date 2-25-25
Nomenclature: Altimeter Pressure

| Test Pt. Feet | IND Reads at 25° C | Test Pt. Feet | IND Reads at 25° C |
|---|---|---|---|
| -1,000 | -990 | 10,000 | 10010 |
| 000 | 10 | 12,000 | 12010 |
| 500 | 510 | 14,000 | 14010 |
| 1,000 | 1010 | 16,000 | 16010 |
| 1,500 | 1510 | 18,000 | 18010 |
| 2,000 | 2010 | 20,000 | 20010 |
| 3,000 | 3010 | | |
| 4,000 | 4010 | | |
| 6,000 | 6010 | | |
| 8,000 | 8010 | | |

Tested by _____ for HVJR859E

Standby

Trego/Dugan Aviation GRI FAA CRS # HVJR859E
Model 177A S/N 17701322 Date 2-25-25
Nomenclature: Altimeter Pressure

| Test Pt. Feet | IND Reads at 25° C | Test Pt. Feet | IND Reads at 25° C |
|---|---|---|---|
| -1,000 | -980 | 10,000 | 10000 |
| 000 | 0 | 12,000 | 11990 |
| 500 | 500 | 14,000 | 14000 |
| 1,000 | 1000 | 16,000 | 15990 |
| 1,500 | 1500 | 18,000 | 18000 |
| 2,000 | 2000 | 20,000 | 20010 |
| 3,000 | 3000 | | |
| 4,000 | 4000 | | |
| 6,000 | 6000 | | |
| 8,000 | 8000 | | |

Tested by _____ for HVJR859E

GENERAL
AIRCRAFT INSPECTION
AIRFRAME
ENGINE
PROPELLER
AVIONICS
APPLICABLE AIRWORTHINESS DIRECTIVES
ADs PERMANENTLY COMPLIED WITH

Page No. _____

| DATE | AIRFRAME TIME IN SERVICE | AVIONICS TIME IN SERVICE | DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**St. Cloud Aviation**
STC Aviation Inc dba St Cloud Aviation Inc
1544 45th Avenue SE
St Cloud, MN 56304
(320) 253-1500 Phone (320) 253-2540 Fax
Repair Station #BDKR393C

**Work Order:** 11-10368 **Opened:** 11/17/2011 **Closed:** 11/17/2011

Ship To: Edward Standal
4115 Juneau Lane N
Plymouth, MN 55446-2723

ne N
5446-2723

30553 **Type:177A** **S/N: 17701322**

| S/N | Time | Cycles | Prop Type | Prop S/N | Prop Time |
|---|---|---|---|---|---|

req. in transponder.
on model AT-150 s/n 31295.
test required by FAR 91.413 has been performed and found to be within the limits of FAR43
pendix F.

was repaired and inspected in accordance
the Federal Aviation Administration and is
ice.

Number: 2429051 R&I

Sign: Date: 11/17/2011

CRS # BDKR393C STC Aviation Inc. 1544 45th Ave SE St. Cloud MN 56304

| Charges This Item: | 1.00 Hours @ 75.00 | $ 75.00 |
|---|---|---|
| | Total For This Discrepancy: | $ 75.00 |

**Summary:**
Total Labor - 1.00 Hours: $ 75.00

**Totals:**

| | |
|---|---|
| **SubTotal:** | **$ 75.00** |
| **Total Charges:** | **$ 75.00** |
| **Amount Remaining:** | **$ 75.00** |

Terms: Net Due 15 Days From Invoice Date

**NEW Remit to Address:**
St Cloud Aviation Inc
1544 45th Avenue SE
St Cloud, MN 56304

**R.C. Avionics, Inc.**
Repair Station No. KP52996M
2161 Missouri Row PO Box B-7
Blaine, MN 55449
Phone: 763-780-1428
Fax: 763-780-0563
Date: 8/5/2005, 4:51 PM

**CUSTOMER INFORMATION**

**Ed Standal**
4115 Juneau Lane N
Plymouth, Mn 55446
(000) 000-0000 Ext 0000
Accessory Unit: KLX-135A GPS/COM
Accessory Manufacturer: KING
Accessory Model: KLX-135A
Accessory Part Number: 069-01029-0703
Accessory Serial: 120421
A/C Reg. No: N30553

## Customer Invoice
## Repair Order: ANE637-08-2005

**Item: 1 - Airworthy Nav-Com** — **Hours** — **Subtotal**

**Discrepancy**
Memory battery needs replacing. (KLX-135A)

**Corrective Action**
Verify battery low message. Dissemble unit. Remove GPS board. Unsolder dead battery and install new memory battery B1. Reassemble unit and test on outside antenna. Unit locked on and showed correct distance. Test com receiver. Found meeting mfg specs. Return to service. GZ 8-5-05

Inspection Information:
Final inspection: GENE ZALABSKI on 08/05/05
Function check: GENE ZALABSKI on 08/05/05

| Qty | Unit | Part Number | Description | Serial Number | Unit Price | Subtotal |
|---|---|---|---|---|---|---|
| 1 | EA | 015-00084-0000 | Battery KLX 135A memory battery (Taxed) | | | |

**Labor:** **Parts:** **Shipping:** **Item Subtotal:**

Please see the next page for the totals for this invoice


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AVIONICS | PROPELLER | ENGINE | AIRFRAME | AIRCRAFT INSPECTION | GENERAL

# AUTHORIZED RELEASE CERTIFICATE

**FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**

| | |
|---|---|
| 1. Approving National Aviation Authority/Country: UNITED STATES | 3. Form Tracking Number: |
| 4. Organization Name and Address: R.C. Avionics, Inc. 2161 Missouri Row PO Box B-7 Blaine, MN 55449 | 5. Work Order/Contract/Invoice Number: ANE637-08-2005 |

| 6. Item: | 7. Description: | 8. Part Number: | 9. Eligibility:* | 10. Quantity: | 11. Serial/Batch Number: | 12. Status/Work: |
|---|---|---|---|---|---|---|
| 1 | KLX-135A GPS/COM | 069-01029-0703 | Tbd by installer | 1 | 120421 | REPAIRED |

**13. Remarks:**
Repaired and tested unit in accordance with applicable manufacturers maintenance manual specifications and procedures For details of repair see work order number referenced in item 5.

**14. Certifies the items identified above were manufactured in conformity to:**

☐ Approved design data and are in condition for safe operation.

☐ Non-approved design data specified in Block 13.

**19.** ■ **14 CFR 43.9 Return to Service** ☐ **Other regulation specified in Block 13**

Certifies that unless otherwise specified in block 13, the work identified in Block 12 and described in Block 13 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

| 15. Authorized Signature: | 16. Approval/Authorization No.: | 20. Authorized Signature: Gene Zalabski | 21. Approval/Certificate No.: KP52996M |
|---|---|---|---|
| 17. Name (Typed or Printed): | 18. Date: | 22. Name (Typed or Printed): Gene Zalabski | 23. Date (m/d/y): 8/5/2005 |

## User/Installer Responsibilities

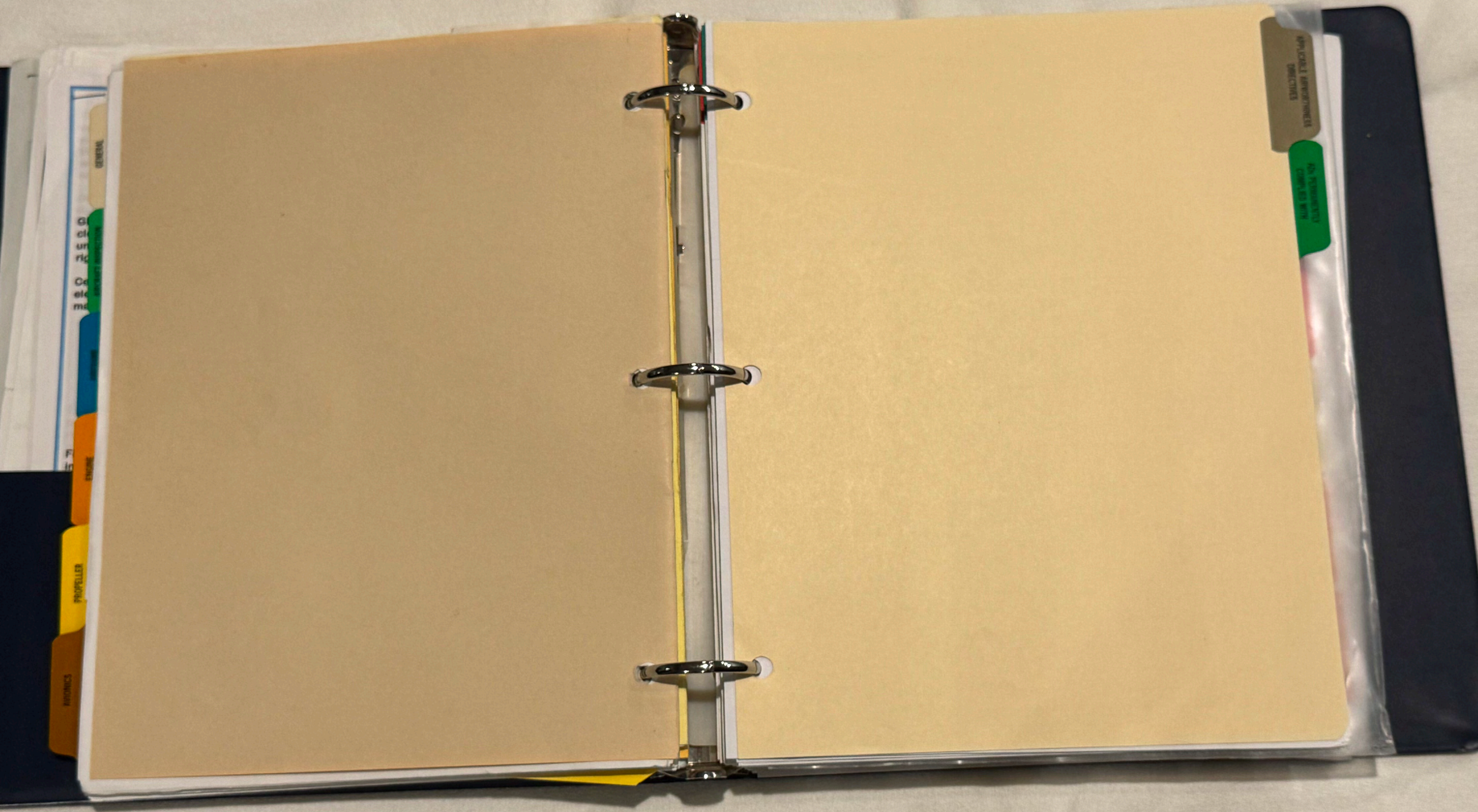
**It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.**

**Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness accepts parts/components/assemblies from the airworthiness authority of the country specified in Block1.**

**Statements in Blocks 14 and 19 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.**

FAA Form 8130-3 (6-01) *Installer must cross-check eligibility with applicable technical data. NSN: 0052-00-012-9005

NON-PERMANENTLY COMPLETED ITEM | APPLICABLE AIRWORTHINESS DIRECTIVES


INTRO
AIRFRAME
ENGINE
PROPELLER
AVIONICS
APPLICABLE AIRWORTHINESS DIRECTIVES
AD ALTERNATIVE COMPLIED WITH

adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

# Applicable Airworthiness Directives

ID No: 21146

Page No: ~~1~~ 1

Date: ~~2/18/2024~~

Model: 177A, S/N: 17701322, Tail No: N30553

| AD NUMBER | TYPE* | SUBJECT | Supersedes AD Number | N/A** |
|---|---|---|---|---|
| | | ENGINE: O-360-A2F | | |
| | | PROPELLER: 1A170/EFA | | |
| | | MAGNETO: SLICK | | |
| ~~69-24-03~~ | N | ~~MARVEL SCHEBLER CARBURETOR~~ 6/23/1986 | | |
| 70-24-04 | R | FUEL SHUT OFF VALVE | | |
| ~~71-01-03~~ | N | ~~CRACKS IN STABILIZER ATTACHMENT ANGLES~~ 11-18-1978 | | |
| 72-03-03R3 | NR | WING FLAP JACK SCREW | 70-15-16 | |
| ~~72-06-05R2~~ | N | ~~MARVEL-SCHEBLER CARBURETOR~~ 8/15/1975 | | X |
| 73-23-01R4 | N | LYCOMING ENGINE | | |
| ~~74-16-06~~ | N | ~~OIL PRESSURE GAGE LINE~~ 8/22/1974 | | X |
| 74-24-13 | N | UNITED INSTRUMENTS ALTIMETER | | X |
| 75-05-04 | N | WHELAN STROBE LIGHT FLASH TUBES | | X |
| 75-07-02 | N | AIR FILTER SEAL | | |
| 76-07-12R1 | NR | BENDIX IGNITION SWITCH | | X |
| 76-16-02 | N | AIRBORNE VACUUM PUMP | | |
| ~~79-08-03C~~ | N | ~~CIGAR LIGHTER WIRING~~ 3/1/1980 | | |
| ~~79-10-14R1~~ | N | ~~FUEL TANK VENTING~~ 7/17/1980 | 78-26-09 | |
| 79-13-08 | N | AIRBORNE VACUUM PUMP | | X |
| 79-18-05R1 | N | LITHIUM BATTERY | 79-05-02 | X |
| 80-06-05 | N | SLICK MAGNETO | | X |
| 80-25-07R1 | NM | STEWART-WARNER OIL COOLER | | X |
| ~~81-15-03~~ | NM | ~~BRACKETT ENGINE INLET AIR FILTER~~ 8/12/1993 | 78-25-05 | |
| 81-16-05 | N | SLICK MAGNETO | | X |
| ~~84-26-02~~ | R | ~~INDUCTION AIR FILTERS~~ REPLACED BY BRACKET FOAM FILTER | | |
| 86-01-06 | NM | AIRBORNE DRY AIR PUMP | | X |
| 86-05-02 | NM | UNITED INSTRUMENTS ALTIMETER | | X |
| ~~86-19-11~~ | N | ~~QUICK DRAIN INSTALLATION~~ 10/27/1998 | | |
| ~~86-24-07~~ | N | ~~ENGINE CONTROLS ATTACHMENT~~ 8/1/1987 | | |
| 87-10-06R1 | N | LYCOMING ENGINE | | X |
| 87-17-06 | N | AM-SAF SEAT BELT ASSEMBLIES | | X |
| 89-04-02 | N | FACET (MARVEL-SCHEBLER) CARBURETOR | | X |
| 92-12-05 | N | LYCOMING ENGINE | | X |
| 93-05-06 | R | IGNITION SWITCH | | |
| 93-11-11 | N | FUEL PUMP | 93-05-21 | X |

*Type of AD (*adlog* subscribers—this designation appears in the upper right corner of each *adNote* page):
N—Non-Repetitive. R—Repetitive. NM—Non-Repetitive, but has more than one compliance requirement.
NR—Can be either Repetitive or Non-Repetitive, depending on the method of compliance.

**Not applicable.

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TEL: (631) 765-9375
TEL: (800) 235-6444

APPLICABLE AIRWORTHINESS DIRECTIVES
ENGINE
PROPELLER
AVIONICS

adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

# Applicable Airworthiness Directives

ID No: 21146
Page No: 7/1/2024 2
Date: ~~2/18/2024~~

Model: 177A, S/N: 17701322, Tail No: N30553

| AD NUMBER | TYPE* | SUBJECT | Supersedes AD Number | N/A* |
|---|---|---|---|---|
| | | ENGINE: O-360-A2F | | |
| | | PROPELLER: 1A170/EFA | | |
| | | MAGNETO: SLICK | | |
| 93-19-04 | N | PRECISION AIRMOTIVE CARBURETOR | 92-15-16 | X |
| 94-25-04 | N | PRECISION AIRMOTIVE CARBURETOR | | X |
| 95-07-01 | N | DEFECTIVE CONNECTING ROD BOLTS | | X |
| 96-09-06 | NR | BRACKETT AIR FILTER | 95-03-02 | X |
| ~~96-09-10~~ | ~~NM~~ | ~~LYCOMING ENGINE~~ 1/22/2002 | 81-18-04 | |
| 97-01-13 | NM | FLUID HOSE FAILURE | | X |
| 97-15-11 | N | LYCOMING ENGINE | 97-01-03 | X |
| ~~98-02-08~~ | ~~NR~~ | ~~LYCOMING ENGINE~~ 1/10/2011 | | |
| 98-17-11 | N | NELSON REWORKED CRANKSHAFTS | 97-01-03 | X |
| 98-23-01 | NM | VAC. PUMP COUPLING | | X |
| ~~99-27-02~~ | ~~N~~ | ~~FUEL SELECTOR VALVE~~ 11/15/2000 | | |
| 2000-06-01 | N | FUEL FILTER STANDPIPE 11/15/2001 | | X |
| 2003-13-17 | NM | T AND W PROPELLER INC. | | X |
| 2004-08-16 | NM | NARCO TRANSPONDER | | |
| ~~2004-10-14C~~ | ~~R~~ | ~~LYCOMING ENGINE~~ 2/10/2011 | 91-14-22 | |
| 2004-19-01C | NM | SHOULDER HARNESS MODIFICATION | 86-26-04 | X |
| 2005-14-11 | NM | SOUTHERN CALIFORNIA PROPELLER SERVICE | | X |
| 2006-03-08 | NM | AERO ADVANTAGE VAC. PUMP | | X |
| 2006-06-16 | N | LYCOMING ENGINE | | X |
| 2006-10-21 | NM | ECI CONNECTING RODS | 2005-26-10 | X |
| 2006-12-07 | N | ECI CYLINDERS | | X |
| 2007-04-19R1 | N | SUPERIOR CYLINDERS | | X |
| 2008-10-02 | NM | ALTERNATE STATIC SOURCE VALVE | | X |
| 2008-26-10C | NM | ALTERNATE STATIC SOURCE VALVE | 2008-19-05 | X |
| 2009-26-12 | NR | ECI CYLINDERS | 87-20-03R2 | |
| 2011-10-09 | R | SEAT RAILS & SEAT ASSEMBLIES | | X |
| 2017-04-06 | NM | UNITED ALTIMETER | | X |
| 2017-16-11 | NM | LYCOMING ENGINE | | X |
| 2018-02-04 | NM | AWI MUFFLERS | | |
| ~~2023-02-17~~ | ~~NM~~ | ~~CARRY-THRU SPAR FAILURE~~ 4/22/2024 | | |

*Type of AD (*adlog* subscribers—this designation appears in the upper right corner of each *adNote* page):
N—Non-Repetitive. R—Repetitive. NM—Non-Repetitive, but has more than one compliance requirement.
NR—Can be either Repetitive or Non-Repetitive, depending on the method of compliance.

**Not applicable.

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adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

# Applicable Airworthiness Directives

ID No: 21146
Page No: 7/1/2024
Date: ~~2/18/2024~~

Model: 177A, S/N: 17701322, Tail No: N30553

| AD NUMBER | TYPE* | SUBJECT | Supersedes AD Number | N/A** |
|---|---|---|---|---|
| | | ENGINE: 0-360-A2F | | |
| | | PROPELLER: 1A170/EFA | | |
| | | MAGNETO: SLICK | | |

FAX NO: (631) 765-9359
TEL: (631) 765-9375
TEL: (800) 235-6444

*Type of AD (*adlog* subscribers—this designation appears in the upper right corner of each *adNote* page):
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NR—Can be either Repetitive or Non-Repetitive, depending on the method of compliance.

**Not applicable.

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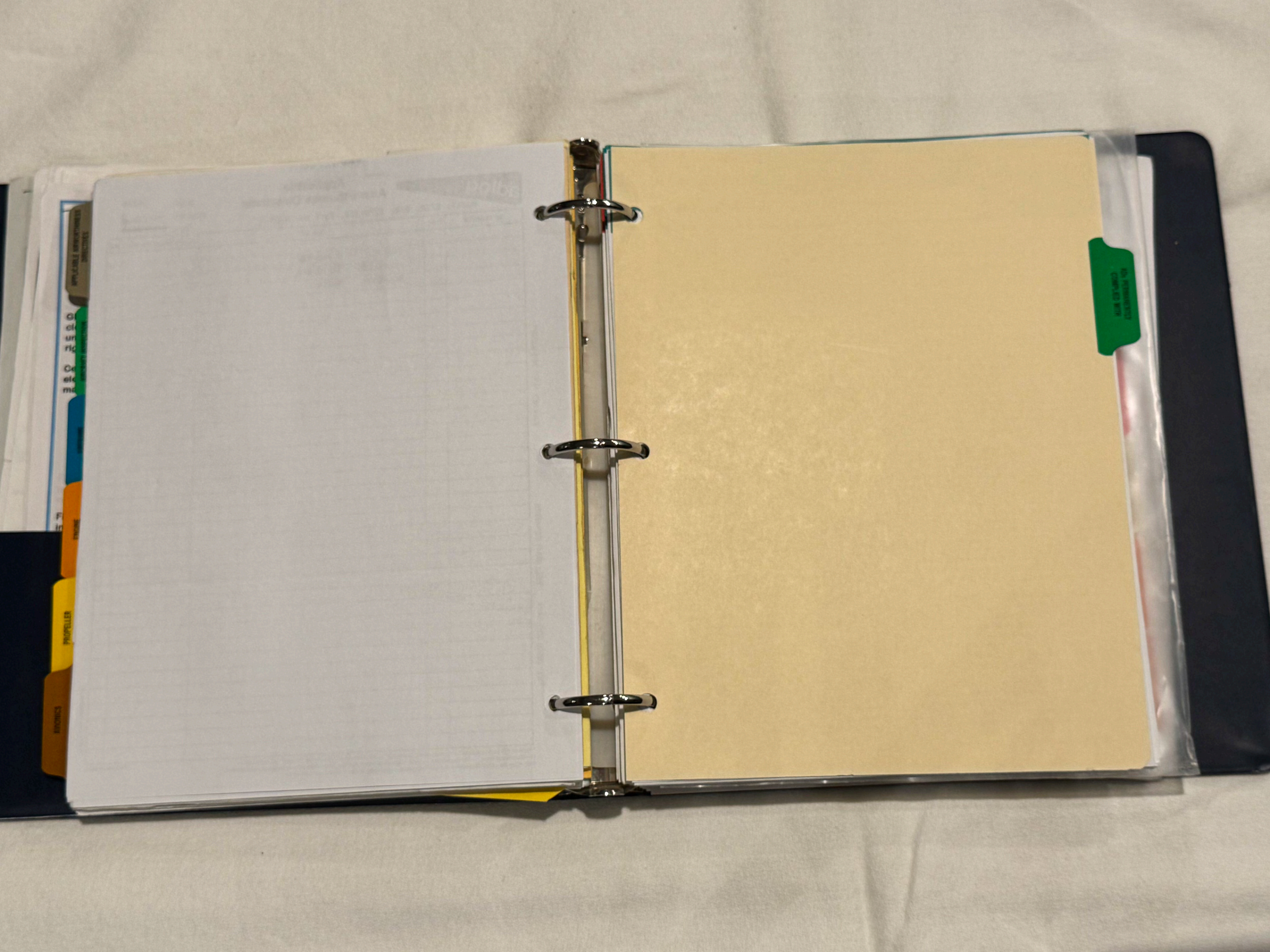
PROPELLER
ENGINE
AVIONICS

APPLICABLE AIRWORTHINESS DIRECTIVES

Rx FREQUENTLY COMPLIED WITH

AIRFRAME

ENGINE

PROPELLER

AVIONICS

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

C177A
TYPE AIRCRAFT

adNote™

2023-2-17 N/M
AD NUMBER

# Carry-Thru Spar Failure

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 4/22/2024 | | 2169.1 | c/w, SEE 4/22/2024 AIRFRAME LOG | [signature] 2286866 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-22324; Docket No. FAA-2020-1078; Project Identifier AD-2020-00716-A.

**(a) Effective Date**

This airworthiness directive (AD) is effective March 20, 2023.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Textron Aviation Inc. (Type Certificate previously held by Cessna Aircraft Company) Model 210N, 210R, P210N, P210R, T210N, T210R, 177, 177A, 177B, 177RG, and F177RG airplanes, all serial numbers, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 5310, Fuselage Main, Structure.

**(e) Unsafe Condition**

This AD was prompted by the in-flight break-up of a Model T210M airplane, due to fatigue cracking of the carry-thru spar that initiated at a corrosion pit and subsequent corrosion reports on other Model 210-series and Model 177-series airplanes. The FAA is issuing this AD to detect and correct cracking, corrosion, and other damage of the carry-thru spar lower cap, which, if not corrected, could lead to the carry-thru spar being unable to support the required structural loads and could result in separation of the wing and loss of airplane control.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Visual Inspection**

Within 200 hours time-in-service (TIS) after the effective date of this AD or within 12 calendar months after the effective date of this AD, whichever occurs first, prepare the carry-thru spar lower cap for inspection by following steps 4 and 5 of the Accomplishment Instructions in Textron Aviation Mandatory Single Engine Service Letter, SEL-57-08, Revision 2, dated August 3, 2020 (Textron SEL-57-08R2); or Textron Aviation Mandatory Single Engine Service Letter, SEL-57-09, Revision 1, dated August 3, 2020 (Textron SEL-57-09R1), as applicable to your airplane model. Visually inspect the carry-thru spar lower cap (including the lower surface, upper surface, and edge) with a 10X magnification lens looking for corrosion, cracking, and damage. You are not required to inspect the lower cap to web radius, spar web, upper cap, or lugs. Refer to the 'Spar Dimensions' and the 'Spar Detail' figures on page 7 of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, for the location of the specific spar features.

(1) If there is any cracking, before further flight, remove the carry-thru spar from service.

(2) If there is damage or evidence of previous removal of corrosion (blending), before further flight, either remove the carry-thru spar from service or repair the area using a method approved as specified in paragraph (n) of this AD. Comply with the requirements in paragraph (h) of this AD before further flight.

(3) If there is any corrosion, before further flight, remove the corrosion in the affected area by following steps 6.B.(1) through (7) of the Accomplishment Instructions in Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, and then mechanically measure the depth of the blended area using a straight edge and feeler gauge or a depth gauge micrometer.

(i) If the material removed in the blended area exceeds the allowable blend limits specified in table 1 (including the notes) of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, before further flight, either remove the carry-thru spar from service or repair the area using a method approved as specified in paragraph (n) of this AD. Comply with the requirements in paragraph (h) of this AD before further flight.

(ii) If the material removed in the blended area does not exceed the allowable blend limits specified in table 1 (including the notes) of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, comply with the requirements in paragraph (h) of this AD before further flight.

**(Continued on page 2)**

(4) If the visual inspection did not detect corrosion, cracking, or damage and there is no evidence of previous removal of corrosion, comply with the requirements in paragraph (h) of this AD within 200 hours TIS after the effective date of the AD or within 12 calendar months after the effective date of the AD, whichever occurs first.

**(h) Eddy Current Inspection**

(1) At the applicable compliance time required by paragraph (g) of this AD, complete an eddy current inspection of the carry-thru spar lower cap for cracking, corrosion, and damage in the following areas in accordance with step 7 of the Accomplishment Instructions in Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model.

(i) The kick area as depicted in the "Spar Dimensions" figure on page 7 of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane. You must complete an eddy current inspection of the lower cap kick area of your airplane regardless of whether corrosion was found and removed as a result of the visual inspection in paragraph (g) of this AD.

(ii) All areas where corrosion was found and removed as a result of the inspection in paragraph (g) of this AD.

(2) If there is any cracking, before further flight, remove the carry-thru spar from service.

(3) If there is any damage, before further flight, either remove the carry-thru spar from service or repair the area using a method approved as specified in paragraph (n) of this AD. After completing the repair, repeat the eddy current inspection of the repaired area before further flight.

(4) If there is any corrosion, before further flight, remove the corrosion by following the requirements in paragraph (g)(3) of this AD. You must repeat the eddy current inspection and comply with paragraph (h) of this AD for the area where the additional material was removed, but you do not have to repeat the eddy current inspection of the kick area.

**(i) Corrosion Protection**

Within 12 calendar months after the effective date of this AD, apply protective coating and corrosion inhibiting compound (CIC) by following steps 9 and 10 of the Accomplishment Instructions in Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model.

**(j) Installation Prohibition**

As of the effective date of this AD, do not install on any airplane a carry-thru spar unless it has been inspected as required by paragraphs (g) and (h) of this AD and corrosion protection applied as required by paragraph (i) of this AD.

**(k) Reporting Requirement**

Within 30 days after completing the inspections required by this AD or within 30 days after the effective date of this AD, whichever occurs later, report to the FAA by email ( *Wichita-COS@faa.gov*) all information requested in the Carry-Thru Spar Inspection Report Attachment to Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model.

**(l) Credit for Previous Actions**

(1) You may take credit for the visual inspection and corrosion removal required by paragraph (g) of this AD if you performed the visual inspection and corrosion removal before the effective date of this AD using Textron Aviation Mandatory Single Engine Service Letter SEL-57-08, dated November 1, 2019 (Textron SEL-57-08); Textron Aviation Mandatory Single Engine Service Letter SEL-57-08, Revision 1, dated November 19, 2019 (Textron SEL-57-08R1); Textron Aviation Mandatory Single Service Letter SEL-57-09, dated November 19, 2019 (Textron SEL-57-09); Textron Aviation Mandatory Single Engine Service Letter SEL-57-06, dated June 24, 2019 (Textron SEL-57-06); Textron Aviation Mandatory Single Engine Service Letter SEL-57-06, Revision 1, dated November 19, 2019 (Textron SEL-57-06R1); Textron Aviation Mandatory Single Engine Service Letter, SEL-57-07, dated June 24, 2019 (Textron SEL-57-07); or Textron Aviation Mandatory Single Engine Service Letter, SEL-57-07, Revision 1, dated November 19, 2019 (Textron SEL-57-07R1).

(2) You may take credit for the eddy current inspection of the lower cap kick area and all locations where corrosion was removed on the carry-thru spar lower cap and the corrosion removal as specified in paragraph (h) of this AD if you performed the eddy current inspection and corrosion removal required before the effective date of this AD using Textron SEL-57-08, Textron SEL-57-08R1, Textron SEL-57-06, Textron SEL-57-06R1, Textron SEL-57-07, Textron SEL-57-07R1, or Textron SEL-57-09.

(3) You may take credit for the corrosion protection required by paragraph (i) of this AD if you performed those actions before the effective date of this AD using Textron SEL-57-08, Textron SEL-57-08R1, or Textron SEL-57-09.

(4) To take credit for any previous action, you must have provided a completed Carry-Thru Spar Inspection Report, an attachment to Textron SEL-57-06, Textron SEL-57-06 R1, Textron SEL-57-07, Textron SEL-57-07R1, Textron SEL-57-08, Textron SEL-57-08R1, or Textron SEL-57-09 to Textron Aviation Inc. before the effective date of this AD, or you must comply with paragraph (k) of this AD within 30 days after the effective date of this AD.

**(m) Special Flight Permit**

(1) This AD prohibits a special flight permit if the inspection identifies cracking in the carry-thru spar.

(2) Special flight permits, as described in 14 CFR 21.197 and 21.199, may be issued for airplanes on which corrosion was identified to operate to a location where the requirements of this AD can be accomplished.

(3) Special flight permits, as described in 14 CFR 21.197 and 21.199, may be issued for an airplane demonstrating evidence of previous blending for which credit for previous actions, as defined in paragraph (l), cannot be granted or for an airplane demonstrating any damage other than corrosion or cracking, but concurrence by the Manager, Wichita ACO Branch, FAA is required before issuance of the special flight permit.

**(Continued on page 3)**



Send requests for a special flight permit to your local Flight Standards District Office.

**(n) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Wichita ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (o) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by a Textron Aviation, Inc. Unit Member (UM) of the Textron Organization Designation Authorization (ODA), that has been authorized by the Manager, Wichita ACO Branch, to make those findings. To be approved, the repair, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(o) Related Information**

For more information about this AD, contact Bobbie Kroetch, Aviation Safety Engineer, Wichita ACO Branch, FAA, 1801 Airport Road, Wichita, KS 67209; phone: (316) 946-4155; email: *bobbie.kroetch@faa.gov* or *Wichita-COS@faa.gov*.

**(p) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Textron Aviation Mandatory Single Engine Service Letter, SEL-57-08, Revision 2, dated August 3, 2020.

(ii) Textron Aviation Mandatory Single Engine Service Letter, SEL-57-09, Revision 1, dated August 3, 2020.

(3) For service information identified in this AD, contact Textron Aviation Inc., One Cessna Boulevard, Wichita, KS 67215; phone: (316) 517-6061; email: *structures@txtav.com*; website: *support.cessna.com*.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: *fr.inspection@nara.gov*, or go to: *www.archives.gov/federal-register/cfr/ibr-locations.html*.

Issued on February 1, 2023.

Christina Underwood, Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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**529 Eaton Street**
**St. Paul, MN 55107**

# NDT Inspection Report

Date 4/8/2024
W.O # S98-24-30080

Aircraft Model: CE 177A
Tail Number: N30553
Serial Number: 17701322
Tach Time: 2169.12

Inspection: A.D. 2023-02-17

Method: Eddy Current

Results of Test: Performed Eddy Current Inspection of the carry through wing spar IAW A.D 2023-02-17 & Cessna Service Letter SEL-57-09 R1. **NO DEFECTS NOTED**

Completed by: Shane M. Muller

Technician Signature: _____

Certificate # CRS YRJR826K
Cessna NDT Certification # C-271

Test Unit (if applicable)

Manufacturer: Olympus
Model: Nortec 600
SN: 60003150216
Cal Due Date: JAN 2025

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# AIRCRAFT WORK AUTHORIZATION

*Note: Please supply all information necessary for work to be performed*

Signature Flight Support LLC d/b/a
Signature TECHNICAIR
529 Eaton Street
St. Paul, MN 55107
Telephone: +1 (651) 209-2720
Facsimile: +1 (651) 209-2752

Please remit payment to:
Signature TECHNICAIR
P.O. Box 402458
Atlanta, Georgia 30384-2458
(Or other agreed-upon method)

Repair Station #: YRJR826K

TECHNICAir Representative: Shane Muller
(Print Name)

| CUSTOMER NAME | | | OWNER NAME (IF DIFFERENT) | | | |
|---|---|---|---|---|---|---|
| Edward Standal | | | | | | |
| DATE | | | EMAIL | | | |
| April 2, 2024 | | | edstandal@hotmail.com | | | |
| ADDRESS | | | | PHONE | | |
| 4115 Juneau Ln N | | | | 612 483-7256 | | |
| CITY | | STATE | ZIP CODE | QUOTE # | | |
| Plymouth | | MN | 55446 | | | |
| AIRCRAFT MAKE & MODEL | YEAR | SERIAL NO. | REG. NO. | TOTAL LDG | TOTAL HRS | WO # |
| Cessna, C177A | 1969 | 17701322 | N30553 | | 2157 | |

| NO. | SCOPE OF WORK |
|---|---|
| 1 | Eddy Current scan lower cap of carry thru spar per AD2023-2-17 and Cessna Service Letter SEL-57-09. |
| | |
| | |

OVERTIME AUTHORIZATION (1 ½ TIME)? ■YES □NO
PARTS ARE NEEDED, SHOULD SIGNATURE TECHNICAir SUPPLY? □YES ■NO

■FAR PART 91 IF
□FAR PART 121
□FAR PART 135

ALL MAINTENANCE AND AVIONICS TRANSACTIONS WILL BE "PAYMENT PRIOR TO DEPARTURE". A 25-50% DEPOSIT WILL BE REQUIRED ON ALL TRANSACTIONS OVER $25,000. A MISCELLANEOUS CONSUMABLES CHARGE EQUIVALENT TO 10% OF THE LABOR CHARGES WILL BE BILLED TO COVER THE COST OF CONSUMABLE MATERIALS AND DISPOSAL FEES, AND WILL CAP AT $3,500 FOR MAINTENANCE SCOPES AND $5,500 FOR AVIONICS AND/OR INTERIOR SCOPES. *PRICES EXCLUDE TAXES, SHIPPING AND HANDLING CHARGES, WHICH WILL BE APPLIED AT THE TIME OF INVOICING.*

THE PERSON SIGNING BELOW ON BEHALF OF CUSTOMER HEREBY CERTIFIES THAT SUCH PERSON **(A)** HAS FULL POWER AND AUTHORITY ON BEHALF OF CUSTOMER AND OWNER OF AIRCRAFT TO SIGN AND BIND CUSTOMER, THE AIRCRAFT'S OWNER AND THE AIRCRAFT TO THE TERMS AND CONDITIONS OF THIS AIRCRAFT WORK AUTHORIZATION, AND **(B)** HAS READ AND UNDERSTANDS THE STANDARD TERMS AND CONDITIONS INCLUDED AND INCORPORATED INTO THIS WORK AUTHORIZATION, AND **(C)** AGREES ON BEHALF OF THE CUSTOMER AND AIRCRAFT OWNER THAT SUCH STANDARD TERMS AND CONDITIONS ARE PART OF THIS AIRCRAFT WORK AUTHORIZATION AND APPLY TO THE WORK, AND **(D)** HAS READ, UNDERSTANDS, AND AGREES TO THE SPECIFICATION/QUOTE AND SCOPE OF WORK AS OUTLINED IN THIS WORK AUTHORIZATION (INCLUDING ITS ATTACHED STANDARD TERMS AND CONDITIONS) AS INCORPORATED INTO THIS AIRCRAFT WORK AUTHORIZATION.

Written price quotes remain in effect for a period of thirty (30) days, provided, however, the work is accepted by TECHNICAir and scheduled within said thirty (30) day period and the Equipment is inducted within ninety (90) days of the related quote date. Any extended or delayed schedules and inductions beyond the ninety (90) day period shall require pricing and schedule verification from TECHNICAir and could be subject to revisions.

Authorized Signature

Edward Standal
Print Name

Aircraft Owner
Title

April 2, 2024
Date

| REV. 2 1/1/2024 | MUST SIGN AND INITIAL ALL REMAINING PAGES AND RETURN TO TECHNICAir<br>Proprietary Information of Signature TECHNICAir Reproduction or redistribution without our express consent is prohibited<br>Signature TECHNICAir | Customer Initials: |
|---|---|---|

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# STANDARD TERMS AND CONDITIONS

These Standard Terms and Conditions of Aircraft Work Authorization of Signature Flight Support LLC d/b/a Signature TECHNICAir ("TECHNICAir"), together with the terms set forth in our signed Aircraft Work Authorization ("Proposal") submitted to you, if any, will be the only terms of sale applicable to our provision of repair, overhaul or servicing (collectively the "Services") of the aircraft, including, without limitation, all parts and records, including logbooks, thereto (collectively the "Equipment") described in the Proposal and will comprise the entire agreement ("Agreement") for these Services. In this Agreement "you" and "your" refer to the customer identified in the Proposal, and "we", "us" and "our" refer to TECHNICAir.

1. General Procedure. We will perform Services on your Equipment as required in the attached Proposal. Services will be in accordance with our standard commercial practices and may, with your agreement, include Designated Engineering Representative (DER) repairs on non-rotating pads and assemblies and the use of Parts Manufacturer Approval (PMA) parts. We may use parts from our rotable parts inventory to replace your repairable parts in which case your repairable parts may be repaired by us at your expense. If such removed parts are later scrapped, condemned or determined to be non-repairable, the parts will be disposed of at no expense to you and you will pay the list price for the replacement part, less any applicable exchange fee previously paid. Title to any parts/materials furnished by TECHNICAir will pass onto you upon payment in full for Services and, simultaneously, title to the parts/materials removed will pass onto us. At redelivery, we will provide you copies of all work records required by the FAA. or if specifically agreed in writing by us, another applicable aviation authority (the "Approved Aviation Authority"). Unless specifically documented by you, and agreed to by TECHNICAir, all equipment and furnishings removed and not reinstalled in accordance with the specifications shall become the property of TECHNICAir. Any work requested that is not a part of this Proposal, including the correction of over-and-above discrepancies, will be performed on a time-and-materials basis following your approval. Any such approved work that we perform will be invoiced in accordance with this Agreement. Downtime stated in this Proposal is based upon reasonable availability and timely receipt of required materials and equipment. Any changes or deviations to this Proposal may result in revised pricing, additional downtime, and revised terms and conditions. Unless specifically stated, existing hardware will be utilized. Work may be performed at one or more facility. This quote is valid for aircraft input at TECHNICAir's St. Paul, MN facility only; however, if you wish to utilize facilities other than those listed herein, revised pricing and other terms and conditions for the selected facility may apply. Due to varying interpretations of continuing airworthiness requirements by FAA FSDOs, all support of continuing airworthiness documentation, if required, will be performed on a time-and-materials basis. If any change is required as a result of a new or revised law, government regulation or requirement, or interpretation thereof by any government agency, which is effective after the date of this Proposal, such change shall be made to the work on a time-and-materials basis. Unless agreed otherwise in writing by us, this Proposal is based on the Equipment being completed as a U.S. registered airframe for FAA approval purposes. Any cost associated with certifying a foreign aircraft shall be invoiced to you at an additional cost. Hidden damages repairs shall be performed on a time-and-materials basis. Additionally, the repair of existing structures due to corrosion, or the repair of any non-conforming condition that does not meet FAA or manufacturer standards, shall be accomplished on time-and-materials basis. Unscheduled Non-Destructive Testing (NDT) services that may be required due to the performance of painting, inspection, maintenance or refurbishment work quoted in this proposal will be performed on a time-and-materials basis after approval by you.
2. Governmental Authorization. You will be the importer/exporter of record of the Equipment and, unless we agree otherwise in writing, you will be responsible for obtaining all necessary import/export licenses, permits and other required authorizations. You acknowledge that you may receive items (including technical data) from TECHNICAir that are export-controlled under export regulations, including, if applicable, the Export Authorization Regulations (EAR) and the International Traffic in Arms Regulations (ITAR) of the U.S., as well as applicable U.S. Customs Regulations, and you shall not export, reexport, release or transfer such items, except in accordance with applicable law and the terms of this Agreement.
3. Taxes. You agree to pay all taxes (excluding Company's payroll and income taxes), duties, fees, charges and assessments of any kind assessed or levied in connection with performance of this Agreement.
4. Terms and Schedule of Payment. Unless otherwise agreed to in writing, payment of all unpaid balances is due upon notification that Services have been completed. The redelivery of the repaired/replaced Equipment will occur upon payment in full without conditions. You must pay in full and retrieve the Equipment within thirty (30) days of such notification (the "Notification Period"). Terms/Schedule of Payment in U.S. Dollars will be as follows:
   a. A deposit will be required on any transactions over $25,000.00 of Twenty-Five to Fifty Percent (25-50%) of the Proposal amount (based upon work scope) and is due and payable upon execution of this Agreement. This initial payment is the required deposit necessary to secure firm schedule commitment. TECHNICAir reserves the right to expend the deposited amount for the purpose of procuring special order equipment and/or materials in support of the Services. In the event you cancel the Services, all deposits are nonrefundable and shall be retained by TECHNICAir as liquidated damages.
   b. Unless specifically stated, all time-and-materials labor hours incurred shall be invoiced at TECHNICAir's current hourly labor rates that are in effect at the time of service and all materials shall be invoiced at list price.
   c. Payment in full for all Services is due and payable upon receipt of each applicable invoice in immediately available funds. Acceptance by TECHNICAir of less than full payment shall not be a waiver of any of its rights or remedies. All remittances are due and payable at the office/address of TECHNICAir as shown on the invoice. You shall notify TECHNICAir in writing of any alleged billing discrepancies within seven (7) days from the date of the invoice and shall review such discrepancies with TECHNICAir within fifteen (15) days after such notice. No action regarding any billing discrepancies shall be commenced by you until compliance with the foregoing notice and review procedures has been completed and we have been unable to resolve the dispute within a reasonable time period. A delinquency charge of one and half percent (1.5%) per month, as well as reasonable legal and collection fees, shall accrue on all amounts not paid in accordance with this Agreement.
5. Prices. Our prices for Services are stated in U.S. Dollars and shall be at the rates quoted to you in the Proposal. Any Services provided that are not priced in the Proposal shall be charged at the current rates published in the original equipment manufacturer's catalogs. The prices quoted herein are based on the assumption that title to all materials removed from the Customer's Aircraft, and not reinstalled, transfer to TECHNICAir upon redelivery unless otherwise specifically agreed to in writing. If you desire to retain any or all of the removed materials (the "Retained Materials"), written notice to TECHNICAir must be given prior to finalizing this Agreement and, if necessary, appropriate adjustments to the quoted prices will be made. You must remove all Retained Materials from TECHNICAir's premises within the Notification Period. Customer has all risks of loss of the Retained Materials. All prices stated as part of this Proposal exclude fuel, flight time, crew expenses, federal, state and local taxes. You shall be responsible for the cost of all test flights. TECHNICAir will supply required technicians in support of such flights. Pricing for kits, components and outside services are based on the latest available pricing from our suppliers, price increases and costs associated with kits, repairs, calibrations, overhaul and/or exchange can occur and will be passed on to you. It is TECHNICAir's intent to approve modifications using an FAA Form 337 Field Approval unless otherwise stated and this Proposal has been quoted predicated upon this assumption. If a 337 approval is unacceptable to the FAA, an STC may be required. The additional

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cost and downtime for the certification effort required to generate an STC, will be paid by you, is not included in the Proposal and would either be quoted separately or performed on a time-and-material basis. Compliance with FAA, FAR Part 145.211, paragraphs (i) and (ii) (Material Receiving Inspection and Airworthiness Certification Verification) is required on all Customer Furnished Material (as defined herein) and services. A twenty percent (20%) handling fee based on the then-current list prices of all Customer Furnished Materials and services will be charged. Upon request, exceptions may be granted for customer warranty parts, spare inventory items, and maintenance program parts. Itemized pricing is for cost analysis only and not intended as a stand-alone pricing. If you chose to delete items from the quoted list, TECHNIC*Air* maintains the right to evaluate the changes and present you with new pricing and downtime. TECHNIC*Air* reserves the right to apply and charge you for additional shipping and handling charges due to shipments of large components and/or parts, or other reasons. Applicable surcharges listed herein, including those related to compliance with EPA-Mandated Hazardous Disposal Requirements, will be applied to all invoices for consumables. TECHNIC*Air* reserves the right to utilize multiple invoices.

6. Delinquency. If the Notification Period expires without full payment by you or you have not removed the Equipment/Retained Materials, you will begin to incur a daily storage fee at the rate of $0.75 per square foot for all such items not removed. Payment of the storage fee is due as you incur it. You will pay us two percent (2%) interest per month for all amounts past due for Services and/or storage fees. Unless otherwise prohibited by law, Retained Materials will conclusively be deemed abandoned by you and ownership of all such Retained Materials shall transfer to TECHNIC*Air* upon expiration of the Notification Period. At that time, Technic*Air* has the right to dispose of any and all abandoned Equipment/Retained Materials. You agree to indemnify TECHNIC*Air* and accept responsibility for additional charges it incurs to dispose of abandoned Equipment/Retained Materials.
7. Excusable Delay. You will excuse us from, and we will not be liable for, any delay in our performance due to causes beyond our reasonable control, and in the event of such delay, we may invoice you for all completed Services. If you cause a delay, your Equipment may be removed from service, which may result in a greater than day-for-day delay in the completion of Services. In addition, you will incur a storage fee for the Equipment at the rate of $0.75 per square foot for the length of the delay caused by you.
8. "First Right of Repair". TECHNIC*Air* has first right of repair within the Warranty Period as defined below before all others. If you or any third party has accessed, altered, modified and/or made any attempt to repair any Services provided by us as outlined in the Scope of Work of the Proposal, the following warranty is void and you become responsible for all costs associated with further repairs/replacement of any defect and must reimburse us for all related costs incurred by us, including travel.
9. Warranty. We warrant that for a period of ninety (90) days beginning at the start of the Notification Period ("Warranty Period"), the Services performed on the Equipment, as outlined in the Proposal, will be free from defects in workmanship and conform to final specifications of the Proposal or that which the parties have otherwise agreed to in writing to be a part of this Agreement. Consistent with our First Right of Repair, you will send us written notice of any such defect within thirty (30) days of discovery. If we reasonably determine that the Services performed do not meet this warranty then we will promptly, and at our exclusive discretion: (a) subject to our First Right of Repair, remediate the defective Services or Equipment; (b) replace the defective item; or (c) refund the repair price apportionable to the defective Services. The Warranty Period on any such repaired or replaced Services or Equipment will be the unexpired portion of the warranty for the initially repaired Service or Equipment. You will send the defective Equipment, freight prepaid, to the location we specify. We will reimburse reasonable freight charges you incur for transportation for repairs covered by this warranty. **THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WE WILL NOT BE RESPONSIBLE FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES. THIS WARRANTY IS NOT ASSIGNABLE WITHOUT OUR WRITTEN CONSENT AND IS APPLICABLE ONLY IF, FOLLOWING REDELIVERY, THE EQUIPMENT (A) HAS BEEN TRANSPORTED, STORED, INSTALLED, OPERATED, HANDLED, MAINTAINED AND REPAIRED IN ACCORDANCE WITH AIRWORTHINESS DIRECTIVES AND THE THEN-CURRENT RECOMMENDATIONS OF THE EQUIPMENT MANUFACTURER AS STATED IN ITS MANUALS, SERVICE BULLETINS OR WRITTEN INSTRUCTIONS; AND (B) HAS NOT BEEN SUBJECTED TO ACCIDENT, MISUSE, ABUSE OR NEGLECT, ALTERING THE EQUIPMENT IN THE SCOPE OF WORK OF THE PROPOSAL IN ANY WAY WHATSOEVER WILL VOID THIS WARRANTY.**
10. Indemnification By You. You shall indemnify, defend, save, and hold harmless TECHNIC*Air*, its parent companies, affiliates, directors, officers, servants, employees and insurers thereof, from and against any and all responsibilities, liabilities, claims, demands, suits, judgments, losses, damages, costs, and expenses for any loss of, damage to, or destruction of any Equipment or any injury to or death of any person arising from your use, operation, repair, maintenance, or disposition of the Equipment; provided, however, you shall not be required to indemnify TECHNIC*Air* for any claims or liabilities arising from TECHNIC*Air*'s negligence or misconduct or breach of its obligations arising under this Agreement. You shall indemnify, defend, save, and hold harmless TECHNIC*Air*, its parent companies, affiliates, directors, officers, insurers, servants, and employees thereof from and against all claims and liabilities resulting in injuries or damages suffered by your employees or contractors in connection with their services performed for you.
11. Limitation of Liability. Notwithstanding anything to the contrary in this Agreement, you agree the total liability of TECHNIC*Air* shall not exceed the dollar value of the Equipment immediately prior to the failure precipitating such a claim. Neither party shall be liable for indirect, special, incidental, or consequential damages, including, without limitation, lost revenue or profits, costs of charter, hotel stays, crew compensation, meals, diminution in value of Equipment, and lost opportunity costs.
12. Information/Trademarks. Unless agreed in writing, any information shared with each other shall be held in confidence and may not be disclosed to others. This does not apply to information which is or will become part of general public knowledge other than as a result of a breach of any confidentiality obligation or which was known prior to receipt from the non-disclosing party. This Agreement does not give you the right to use TECHNIC*Air*'s trademarks or grant you any rights to any patent owned or licensed by us.
13. Termination. Either party may terminate this Agreement upon thirty (30) days written notice for breach of any material provision, unless such breach is cured within the thirty (30) days. We may terminate this Agreement without advance notice if you, or any of your affiliated or parent companies (a) fail to make any required payment to us when due, (b) make any agreement with your creditors due to your inability to make timely payment of your debts, (c) enter into compulsory or voluntary liquidation, (d) become insolvent, or (e) become subject to the appointment of a receiver of all or a material part of your assets. Upon any such termination, you will not be relieved of your obligation to pay for Services performed and costs incurred. You hereby agree that, in the event you file or have filed against you (with an order for relief being entered) a petition for relief under the Bankruptcy Code, you shall move to either assume or reject this Agreement under section 365 of Title 11 of the United States Code (the "Bankruptcy Code") within thirty (30) days from the date upon which an order for relief is entered and you agree not to seek any extension of this deadline. In the event you seek to assume this Agreement, you agree to cure all amounts due under this Agreement immediately upon entry of an order of the Bankruptcy Court granting the assumption. Notwithstanding the foregoing, TECHNIC*Air* reserves its right to object to your assumption of the Agreement.
14. Consent to Relief from Stay. You hereby agree that, if you (by your own actions, or the action of any of your shareholders or creditors), file or have filed against you (with an order for relief being entered), a petition under the Bankruptcy Code, TECHNIC*Air* shall be entitled to relief from the automatic stay imposed by section 362(a)(1) of the Bankruptcy Code for cause pursuant to section 362(d)(1) of the Bankruptcy Code in order for TECHNIC*Air* to exercise any of its rights and remedies available to TECHNIC*Air* under this Agreement, including the right of termination pursuant to paragraph 13, *supra*, and you hereby waive the benefits of such automatic stay and consent and agree to raise no objection to such relief.
15. Customer Furnished Material. You may supply mutually agreed quantities and types of parts to us as "Customer Furnished Material", if furnished with an Approved Aviation Authority serviceability tag and ready for immediate use. If your delay in providing material would delay our performance, we

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may supply such parts and material at your expense. New and unused Customer Furnished Material will be assessed a twenty percent (20%) surcharge at the time of the installation based on Manufacturer's Suggested Retail Price ("MSRP"). For rebuilt, reworked, overhauled or refurbished parts where there is no MSRP, TECHNICAir, at its sole discretion, will determine the basis for the surcharge. Customer Furnished Materials must be accompanied by a properly executed release for return to service in accordance with FAA regulations. If such release or documentation is not supplied, any overhaul, upgrade, certification or repair necessary to be in compliance must be accomplished prior to installation of the parts. Any such overhaul, upgrade, certification or repair is the sole responsibility of the Customer. TECHNICAir disclaims any and all liability for Customer Furnished Materials and specifically excludes any and all express, implied or statutory warranties for such Customer Furnished Materials including, but not limited to, the warranties of merchantability and fitness for a particular purpose, and the warranty in this Agreement. You agree to indemnify TECHNICAir for any and all liability directly or indirectly arising from any Customer Furnished Material. You waive any claim of or right to any cause of action against TECHNICAir, its parent companies, affiliates, employees, directors, officers, agents and subcontractors, for the performance of such Customer Furnished Materials and installation by us without inspection of such Customer Furnished Materials. We will not assume responsibility for airframe/customer hardware sent with an engine. Every effort will be made, however, to return these items to you at your expense.

16. Avionics. Aircraft engineering documents must coincide with the current aircraft configuration. Incorrect systems wiring and/or inaccurate wiring diagrams and other related documents will result in additional time-and-material charges. You shall be responsible for providing wiring diagrams and any related documents for existing Equipment systems installed. Existing aircraft systems and avionics equipment that is coupled with newly installed avionics systems must be operating to current factory standards and mod status or additional repair costs will be applied. This Proposal does not assume any possible High-Intensity Radiated Field (HIRF) testing requirements that are developed at a later date. Electromagnetic interference (EMI) / radio-frequency interference (RFI) interference problems that are pre-existing, or are found because of newly installed equipment, will be corrected at an additional cost to you. Unless specifically stated in this Proposal, prices do not include any modifications or other work that is required due to antenna relocation or structural modification to gain space provisions, and any such work shall be accomplished at an additional cost to you.
17. Dispute Resolution and Governing Law. This Agreement shall be governed by the laws of the State of Florida, excluding its conflict of law provisions. The parties will try to amicably resolve any dispute relating to this Agreement within sixty (60) days from receipt of the first notice of a dispute by either party. If the parties do not timely resolve the dispute, you hereby (a) submit and consent to personal jurisdiction in the State of Florida for any action arising out of or in connection with this Agreement; (b) waive any and all personal rights under the laws of any state to object to jurisdiction within the State of Florida; and (c) agree that for any cause of action arising out of or in connection with this Agreement, the exclusive venue shall be a federal court in Orange County, Florida, and only if that court lacks jurisdiction, then venue shall be proper only in a state court physically located in Orange County, Florida.
18. Attorneys' Fees and Waiver of Jury Trial. If we must initiate legal action to enforce TECHNICAir's rights to collect for sums due and owing under this Agreement, the prevailing party (receiving judgment in its favor) shall be entitled to collect from the other party or parties all actual incurred costs of suit in such dispute, including its attorneys' fees. **ADDITIONALLY, IN ANY ACTION ARISING OUT OF THIS AGREEMENT, THE PARTIES KNOWINGLY WAIVE THEIR RIGHT TO TRIAL A BY JURY AND AGREE TO A BENCH TRIAL.**
19. General Provisions.
    (a) Right to Sub-contract. We have the right to subcontract any Service to any subcontractor properly certified and rated by the Approved Aviation Authority.
    (b) Assignment. You may not assign this Agreement without our prior written consent. You agree we may assign this Agreement to (i) one of our affiliates, or (ii) any successor of ours without your consent.
    (c) Waiver of Immunity. If you are incorporated or based outside the United States, to the extent that you or any of your property becomes entitled to sovereign or other immunity from any legal action, you waive your immunity in connection with this Agreement.
    (d) Language, Notices. All correspondence and documentation connected with this Agreement will be in English. All notices will be in writing, effective upon receipt and will be provided to the addresses set forth on the Proposal, which may be changed by written notice.
    (e) Non-Waiver of Rights and Remedies. Other than your obligation to bring suspected defects to TECHNICAir's attention within thirty (30) days, failure or delay in the exercise of any right or remedy under this Agreement will not waive or impair such right or remedy. No waiver given will require future or further waivers. Any modifications to this Agreement must be in writing and dated and executed by both parties to become valid and enforceable.
    (f) Entire Agreement. This Agreement contains the entire understanding of the parties, and there are no representations, warranties, covenants, or undertakings other than those expressly set forth herein. Any portion of this Agreement determined to be contrary to any controlling law, rule or regulation shall be revised or deleted and the remaining balance of this Agreement will remain in full force and effect. In the event of a conflict between the Proposal and this Agreement, the Proposal shall rule. This Agreement may be executed in one or more counterparts, each treated as the same binding agreement which shall be effective upon execution.
    (g) Foreign Registry. Unless otherwise agreed in writing by us, TECHNICAir standard proposals are based on a U.S. registered aircraft, and if the aircraft remains in foreign registry, then TECHNICAir will perform all work in accordance with standard and approved U.S. requirements, and the customer will be responsible for obtaining all approvals and certifications necessary to satisfy their local regulations. TECHNICAir will support certification requirements at your request and approval on a time and material basis.

Single Engine

# ATTACHMENT

Beechcraft | Cessna | Jayhawker

SEL-57-09

**MANDATORY**

| CARRY-THRU SPAR INSPECTION REPORT | |
|---|---|
| To: WICHITA-COS@FAA.GOV | Page: 1 of 2 Pages |
| Wichita Citation Service Center | Includes this cover sheet |
| Attn: Textron Aviation Team Structures | |
| 2121 S. Hoover Rd | Registration No.: N30553 |
| Wichita, Kansas 67209 | Total Time in Service (Hrs.): 2169.12 |
| Phone Number: 316-517-6061 | |
| email: structures@txtav.com | Facility Name: PWC AVIATION SERVICES |
| | Facility Address: 340 GARRETT |
| From: EDSTANDAL@HOTMAIL.COM | PINE RIVER, MN 56474 |
| Date: APRIL 22 2024 | |
| Airplane Serial Number: 17701322 | |
| Owner's Name: EDWARD STANDAL | Phone Number of Facility: 612 310-0022 |
| Owner's Address: 4115 JUNEAU LN N | Fax Number of Facility: NONE |
| PLYMOUTH, MN 55446 | |
| | |
| Owner's Phone Number: 612 483-1256 | |
| Owner's Fax Number: NONE | |

Please provide detailed and dimensioned descriptions of any crack(s) or corrosion. Attach pictures to this form as necessary.

| Comments/Notes: | Cracks: Yes (No) (Circle One) |
|---|---|
| | Corrosion: Yes (No) (Circle One) |
| | Airplane Operation: |
| | Severe: Yes No (Circle One) |
| | Typical (Yes) No (Circle One) |
| | Unknown: Yes No (Circle One) |

Any previously known or recorded blending or material removal on the carry-thru spar? Yes (No) (Circle One)

| | |
|---|---|
| List any Structural Supplemental Type Certificates (STC's) Installed: | NONE |
| | |
| | |
| | |

APPLICABLE AIRWORTHINESS DIRECTIVES

AS PERMANENTLY COMPLIED WITH

ENGINE

PROPELLER

AVIONICS

Single Engine

# SERVICE LETTER

Beechcraft | Textron Aviation

SEL-57-09

**MANDATORY**

## REVISION TRANSMITTAL

This sheet transmits Revision 1 to SEL-57-09, which:

A. Adds a separate step for a specific eddy current inspection of the Kick Area on the lower surface of the lower cap.

B. Provides information for the use of zinc chromate primer and epoxy primer on carry-thru spars.

C. Provides additional clarification for technician qualification to complete the Eddy Current Inspection.

D. List additional alternate conversion coatings and zinc chromate primer.

**NOTE:** This revision replaces the original issues of SEL-57-09 in its entirety.

**REVISION COMPLIANCE**

NO EFFECT. Airplanes previously modified by this service letter are not affected by this revision.

**LOG OF REVISIONS**

| | |
|---|---|
| Original Issue | November 19, 2019 |
| Revision 1 | August 3, 2020 |



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Single Engine

# SERVICE LETTER

Beechcraft | Textron Aviation | Hawker

SEL-57-09

**MANDATORY**

**TITLE**

WINGS - MODEL 177 CARRY-THRU SPAR ONE-TIME CORROSION INSPECTION

**EFFECTIVITY**

| MODEL | SERIAL NUMBERS |
|---|---|
| 177 | 17700001 thru 17701164 |
| 177A | 17701165 thru 17701370 |
| 177B | 17701371 thru 17702752 |
| 177RG | 177RG0001 thru 177RG1366 |
| F177RG | F177RG0001 thru F177RG0177 |

**REASON**

The carry-thru spar can develop corrosion and cracks. Corrosion can propagate and lead to crack development. A crack in the carry-thru spar can progress to a point that a structural failure of the carry-thru spar can occur, resulting in loss of airplane control and/or wing separation.

Non-compliance with this service letter may result in undetected corrosion and crack(s) in the carry-thru spar, which can result in structural failure of the carry-thru spar.

**DESCRIPTION**

This service document provides instructions and repair criteria to do a detailed inspection of the carry-thru spar to inspect for corrosion and/or cracks.

**COMPLIANCE**

**WARNING: The Carry-Thru spar inspection presented in this service letter applies to airplanes listed in the Effectivity Section. The compliance time is for unmodified airplanes, and represents the maximum allowable time. Airplanes that have been modified to alter the airplane design, gross weight, or airplane performance, may need to inspect sooner. Examples include but not limited to the following common supplemental type certificates (STC's) include vortex generators, wing cuffs, STOL kits, wing tips, and add-on wing fuel tanks. Contact the STC holder for revised inspection intervals.**

MANDATORY. This service document must be accomplished within 200 flight hours or the next Annual Inspection from date of receipt, whichever occurs first.

Airplanes which have complied with SEL-57-07 but not yet with this service letter do not need to do the inspection outlined in this service letter, however; these airplanes need to complete Steps 9 and 10 of this service letter within 200 flight hours or at the next annual inspection, whichever occurs first.

Airplanes which have not complied with SEL-57-07 must complete this service letter by the compliance time listed for the appropriate model.

After this service letter is complied with, the inspection outlined in SEL-57-07 does not need to be complied with.

If the inspection form associated with this service letter or SEL-57-07 has not been sent in, send it in whether or not cracks or corrosion were found. Refer to the Carry-Thru Spar Inspection Report for contact information.



Textron Aviation Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

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**MANDATORY**

A service document published by Textron Aviation may be recorded as *completed* in an aircraft log only when the following requirements are satisfied:

1) The mechanic must complete all of the instructions in the service document, including the intent therein.
2) The mechanic must correctly use and install all applicable parts supplied with the service document kit. Only with written authorization from Textron Aviation can substitute parts or rebuilt parts be used to replace new parts.
3) The mechanic or airplane owner must use the technical data in the service document only as approved and published.
4) The mechanic or airplane owner must apply the information in the service document only to aircraft serial numbers identified in the *Effectivity* section of the document.
5) The mechanic or airplane owner must use maintenance practices that are identified as acceptable standard practices in the aviation industry and governmental regulations.

No individual or corporate organization other than Textron Aviation is authorized to make or apply any changes to a Textron Aviation-issued service document or flight manual supplement without prior written consent from Textron Aviation.

Textron Aviation is not responsible for the quality of maintenance performed to comply with this document, unless the maintenance is accomplished at a Textron Aviation-owned Service Center.



Single Engine SERVICE LETTER
Beechcraft | Cessna | Textron Aviation
SEL-57-09

**MANDATORY**

**CONSUMABLE MATERIAL**

You must use the consumable materials that follow, or their equivalent, to complete this service document.

| NAME | NUMBER | MANUFACTURER | USE |
|---|---|---|---|
| Color Chemical Film Treatment | U074093 (Alodine 1132 Touch n Prep) | Textron Aviation Parts Distribution<br>7121 Southwest Boulevard<br>Wichita, KS 67215 | To prepare bare aluminum surface for intermediate primer. Bonderite M-CR 1132, (formerly the Alodine 1132 Touch-n-prep) are both approved for small touch up areas, generally less than 6 inches square.) |
| Corrosion Resistant Primer | K000574 (2oz Kit) | Textron Aviation Parts Distribution | Touch-up primer kit. |
| Corrosion Resistant Primer | K000479 (2 Gal Kit) | Textron Aviation Parts Distribution | Large primer kit. |
| Alumigrip 10P8-11 Epoxy Primer | Alumigrip 10P8-11 | AkzoNobel<br>1 East Water St<br>Waukegan, IL 60085<br>https://aerospace.akzonobel.com/ | Corrosion Resistant Primer. |
| Conversion Coating | Bonderite M-CR 600RTU | Commercially available | Conversion Coating of bare metal before intermediate primer. |
| Cor-Ban 23 | COR-BAN-23 (U074098) (12oz aerosol) | Textron Aviation Parts Distribution | Corrosion Inhibiting Compound coating. |
| Formit-18 Fan | Formit-18 | Textron Aviation Parts Distribution | Nozzle for Cor-Ban 23 application. |
| Aluminum oxide paper or cloth (high purity) - 180 or 220, and 320 grit | | Commercially Available | For paint/corrosion removal and surface preparation before painting. |
| Extreme Simple Green Aircraft and Precision Cleaner | | Commercially Available | Initial cleaning of soiled surface. |
| Isopropyl Alcohol | | Commercially Available | Type I Cleaning Solvent for surface cleaning prior to painting. |
| Methyl Propyl Ketone | | Commercially Available | Cleaning solvent of Corban Corrosion Inhibiting Compound. |

**CAUTION:** Do not use any other Simple Green products other than Extreme Simple Green as some have been found to be corrosive.

**NOTE:** Textron Aviation has tested and approved Cor-Ban 35 and ARDROX AV-8. These products may be used in place of Cor-Ban 23 at the owners discretion.

**NOTE:** The materials that follow are allowable alternate for the primers above and comply with standard MIL-C-8514, Type 1 Class C .

MANDATORY

| NAME | NUMBER | MANUFACTURER | USE |
|---|---|---|---|
| Zinc Chromate Primer | 1757B1C–P | Randolph Products Co.<br>33 Haynes Circle<br>Chicopee, MA 01020 | Approved Zinc Chromate Primer. |
| Zinc Chromate Primer | K000484 | Textron Aviation Parts Distribution<br>7121 Southwest Boulevard<br>Wichita, KS 67215 | Approved Zinc Chromate Primer. |

**NOTE:** As an alternate to the conversion coatings listed, the materials that follow are allowable alternate, which comply with standard MIL-DTL-81706B Class 1A.

| NAME | NUMBER | MANUFACTURER | USE |
|---|---|---|---|
| Oakite ChromiCoat L25 | | Commercially Available | Approved alternate Conversion Coating. |
| Iridite 14-2 | | Commercially Available | Approved alternate Conversion Coating. |
| Bonderite M-CR 1600 AERO | | Commercially Available | Approved alternate Conversion Coating. |
| Bonderite M-CR 1201 AERO | | Commercially Available | Approved alternate Conversion Coating. |
| Bonderite M-CR 1200S AERO | | Commercially Available | Approved alternate Conversion Coating. |
| Bonderite M-CR 1200 | | Commercially Available | Approved alternate Conversion Coating. |
| Bonderite M-CR 600 AERO | | Commercially Available | Approved alternate Conversion Coating. |

TOOLING

| NAME | NUMBER | MANUFACTURER | USE |
|---|---|---|---|
| 10X Magnifying Lense | | Commercially Available | For detailed visual inspection of carry-thru spar. |
| Micrometer (depth gauge style) | | Commercially Available | To measure depth of blended areas of carry thru spar. |
| Eddy Current Inspection Equipment | | Nondestructive Inspection Methods and Requirements, Document 2A-13-01 found in Section 2A Supplemental Inspection Documents in the appropriate Model Service or Maintenance Manual | For Eddy Current inspection of carry-thru spar lower surface. |

REFERENCES

Cessna Model 177 (1968-1978) Service Manual

Cessna Model 177RG (1971-1975) Maintenance Manual

Cessna Model 177RG Series (1976-1978) Service Manual

Inspection Time Limits - Structure, Section 2A-10-00 found in Section 2A Supplemental Inspection Documents in the appropriate Model Service or Maintenance Manual,





MANDATORY

Nondestructive Inspection Methods and Requirements, Document 2A-13-01 found in Section 2A Supplemental Inspection Documents in the appropriate Model Service or Maintenance Manual

**NOTE:** To make sure all publications used are complete and current. Refer to www.txtavsupport.com.

**PUBLICATIONS AFFECTED**

None

**ACCOMPLISHMENT INSTRUCTIONS**

1. Prepare the airplane for maintenance.
   A. Make sure that the airplane is electrically grounded.
   B. Make sure that all switches are in the OFF/NORM position.
   C. Disconnect electrical power from the airplane.
      (1) Disconnect external electrical power.
      (2) Disconnect the airplane battery.
   D. Attach maintenance warning tags to the battery and external power receptacle that have **"DO NOT CONNECT ELECTRICAL POWER - MAINTENANCE IN PROGRESS"** written on them.
2. Remove the pilot and co-pilot seats if necessary. (Refer to the applicable Model Service or Maintenance Manual.)
3. Get access to all surfaces of the carry-thru spar by removing panels, upholstery, headliner, sealant, and installed utility or oxygen systems as necessary. (Refer to the applicable Model Service or Maintenance Manual.)
4. Remove foam from bottom of carry-thru spar as applicable.
   A. Clean all adhesive residue from the carry-thru spar with a non-metallic scraper tool.
5. Clean grime or debris from all interior surfaces of the carry-thru spar with special emphasis on lower cap surface.
6. (Refer to Figure 1, Sheets 1-5.) Do a detailed visual inspection of the carry-thru spar with a 10X magnification lens looking for corrosion, nicks, gouges, drill starts, or hardware damage and must include:
   1. The visible surfaces of the Upper cap.
   2. The Spar web (include cap to web radius and outboard feed thru holes).
   3. The Lower cap (include upper and lower surface and cap edge).
   4. The lower surface of the outboard spar to wing attach lugs (include the machined channel surfaces between the lugs).

   **NOTE:** The detailed visual inspection should pay particular attention to locations where air ducts, support wires, and upholstery pads contact the lower spar structure as well as lower spar cap lower surface Kick Area between BL 9.0 and BL 12.25. (Refer to the figure titled Spar Dimensions after Table 1.)

   A. (Refer to Figure 1, Sheets 4 and 5.) If stress corrosion cracking or exfoliation corrosion (flaking) of the spar is found, contact Textron Aviation Team Structures for evaluation. (Refer to the Carry-Thru Spar Inspection Report for contact information.)

   B. If corrosion is found on the carry-thru spar, the area can be reworked as follows:

      **NOTE:** If previous evidence of blending can be determined or is recorded in the aircraft log book for the same location corrosion has been found, contact Textron Aviation Structures.

      (1) Use 180 grit or finer aluminum oxide abrasive paper, cloth or pads to carefully remove corrosion and blend that area locally around the affected region.

(2) Make sure to only remove the minimum material necessary to blend the corroded surface with the surrounding surface.

(3) Maintain a minimum of 20:1 blend to depth ratio.

(4) Leave no sharp edges after blending.

(5) Finish with a 320 grit or finer grained aluminum oxide sandpaper to 63 micro RA or smoother.

**NOTE:** When 320 grit is properly used, it will produce a 63 micro RA surface finish.

(6) Use a vacuum to remove dust.

(7) Use a clean cloth wet with isopropyl alcohol to clean the surface.

(8) Measure the depth of the blended area mechanically; such as with a straight edge and feeler gauge or a depth gauge micrometer.

(a) If material removed is greater than what is listed in the TABLE 1 for the specific spar feature, contact Textron Aviation Team Structures with the dimension of blended area for evaluation. (Refer to the Carry-Thru Spar Inspection Report for contact information.)

(b) If material removed is less than 0.010 inch for the specific spar feature in TABLE 1, go to Step 8.

(c) If material removed is greater than 0.010 but less than what is listed in TABLE 1 for the specific spar feature, complete the eddy current inspection of the blended areas and the Kick Area from buttock line 9.0 thru 12.25 inch (whether there is or is not presence of corrosion in the Kick Area), go to Step 7.

**TABLE 1 REPAIR CRITERIA**

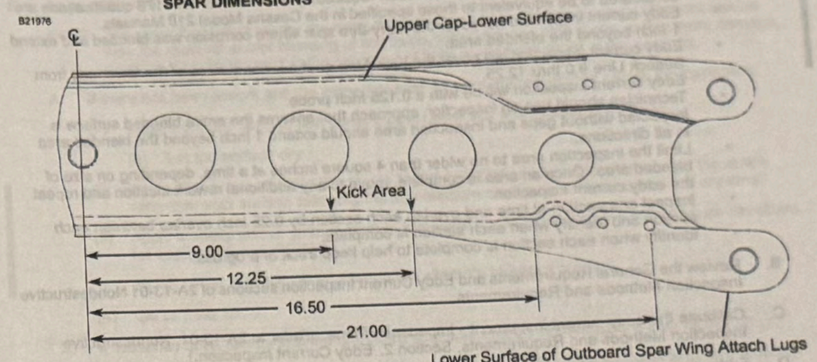
| | Carry-thru Spar Feature | Spar Buttock Line (BL) (in) | Blend Limit (in) | Description |
|---|---|---|---|---|
| 1 | Lower Cap - Lower Surface (1) | Center Line to 9.0 | 0.030 | Spar Constant Cross Section |
| | | 9.0 to 12.25 | 0.030 | Lower Cap Kick Radius |
| | | 12.25 to 21.0 | 0.030 | Outboard of Lower Cap Kick Radius |
| 2 | Lower Cap - Upper Surface (1) | Center Line to 16.5 | 0.030 | Spar Constant Cross-Section thru Cap Kick |
| 3 | Lower Cap - Edge (1) | Center Line to 16.5 | 0.100 | Forward or Aft facing cap edges |
| 4 | Lower Cap to Web Radius (1) | Center Line to 16.5 | 0.030 (2) | Forward or Aft facing web radii |
| 5 | Spar Web (1) | Center Line to 16.5 | 0.050 (2) | Includes areas common to web holes |

**NOTE:** Dimensions shown are in Inches.
(1) Limits can't be combined at the same Buttock Line location without contacting Textron Aviation. Example: Web blend and a lower spar cap blend cannot be combined at same Buttock Line location without contacting Textron Aviation.
(2) The carry-thru spar must be replaced if the blend limit is exceeded in this area.

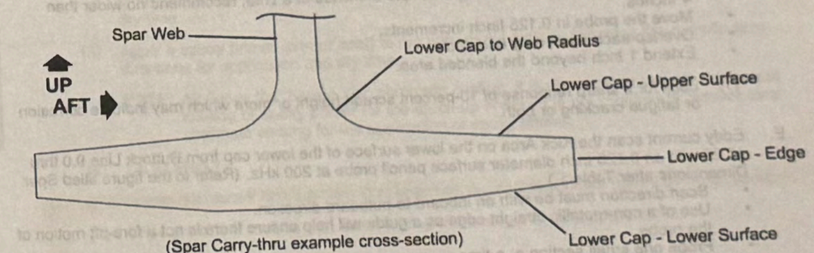




**SPAR DIMENSIONS**




**SPAR DETAIL**




(Spar Carry-thru example cross-section)

C. If no corrosion is found on the carry-thru spar but previous evidence of blending can be determined or is recorded in the aircraft log book, contact Textron Aviation Structures.

D. If no corrosion is found on the carry-thru spar, go to Step 8.

7. (Refer to Figure 1, View A-A.) (If corrosion was found and blended.) Do an eddy current inspection of the blended area as follows: (Refer to 2A-13-01, Nondestructive Inspection Methods and Requirements in the appropriate Model Service or Maintenance Manual.)

A. Plan out the inspection process to cover the items listed as follows:
- If the eddy current inspection is performed by qualified personnel that are not representing an FAA Certified Repair Station, an A&P Mechanic may supervise the inspection and make the appropriate logbook entry.
- Technician must meet the qualifications defined as being equivalent to the Cessna 210 NAS 410 Level 2 Eddy Current method as defined in the Cessna Model 210 Manuals for being qualified

to accomplish the eddy current inspection required. ISO/BSI 9712, EN 4179 qualifications are considered to be equivalent to those specified in the Cessna Model 210 Manuals.
- Eddy current inspection will cover the carry-thru spar where corrosion was blended and extend 1 inch beyond the blended area.
- Eddy current inspection will cover the Kick Area on the lower surface of the lower cap from Buttock Line 9.0 thru 12.25.
- Eddy current inspection will be with a 0.125 inch probe.
- Technician should use an inspection approach that ensures the entire blended surface is inspected without gaps and inspection area should extend 1 inch beyond the blended area in all directions.
- Limit the inspection area to no wider than 4 square inches at a time, depending on size of blended area. Once an area is complete, move to any additional rework location and repeat the eddy current inspection.
- Inspect one section at time and overlap each section by 0.25 inch overlap between each section and identify when each section is complete.
- Identify when each section is complete to help keep track of progress.

B. Review the General Requirements and Eddy Current Inspection sections of 2A-13-01 Nondestructive Inspection Methods and Requirements.

C. Calibrate the eddy current instrument - Impedance Plane. (Refer to 2A-13-01, Nondestructive Inspection Methods and Requirements, Section 2. Eddy Current Inspection.)

D. Eddy current scan the blended surface with an 0.125 inch diameter surface pencil probe at 200 kHz.
- Scan direction must be with an inboard to outboard direction.
- Use of a non-metallic straight edge as a guide will help ensure there is not a fore-aft motion of the probe.
- Probe one small section of only a couple of inches at a time, recommend no wider than 4 inches.
- Move the probe in 0.125 inch increments.
- Overlap each section by 0.25 inch.
- Extend 1 inch beyond the blended area.

(1) Look for a sharp response of 10-percent screen height or more which may indicate corrosion or fatigue cracking or both.

E. Eddy current scan the Kick Area on the lower surface of the lower cap from Buttock Line 9.0 thru 12.25 with an 0.125 inch diameter surface pencil probe at 200 kHz. (Refer to the figure titled Spar Dimensions after Table 1.)
- Scan direction must be with an inboard to outboard direction.
- Use of a non-metallic straight edge as a guide will help ensure there is not a fore-aft motion of the probe.
- Probe one small section at a time.
- Move the probe in 0.125 inch increments.
- Overlap each section by 0.25 inch.
- Extend 1 inch beyond the Kick Area.

(1) Look for a sharp response of 10-percent screen height or more which may indicate corrosion or fatigue cracking or both.

F. If you find one or more cracks, further flight is **NOT** permitted. You must replace the carry-thru spar before further flight.

8. Provide the results of the detailed visual and eddy current inspections to Textron Aviation, Team Structures. Use the Carry-Thru Spar Inspection Report form and pictures as applicable. Telephone number and email address are provided on the form.

**NOTE:** The Carry-Thru Spar Inspection Report form must be sent to Textron Aviation Team Structures to report all conditions, cracks, corrosion, or no cracks, no corrosion.





9. Apply protective coatings to the carry-thru spar as follows:

**NOTE:** The steps that follow are for the carry-thru spar located inside the fuselage. Rework can be from the removal and/or blending of corrosion, nicks, gouges, drill starts, or hardware damage, anything that would result in the exposure of bare metal by removal of the coatings.

A. If there has been rework and the carry-thru spar was not entirely primed before the inspection:

(1) Wipe the entire surface with clean wiping cloths wet with isopropyl alcohol.

(a) Let the surface dry.

(2) Apply Conversion coating (Bonderite M-CR 600RTU or allowable alternate) to the entire carry-thru spar surface following the manufacture directions for application and dry time.

(3) Apply a epoxy primer (primer coat) to the entire surface following the manufacture directions for application and dry time.

**NOTE:** Zinc chromate is an acceptable alternate to epoxy primer.

(4) Go to Step 10.

B. If there has been rework and the carry-thru spar was entirely primed before the inspection:

(1) Wipe the areas with bare metal surface with clean wiping cloths wet with isopropyl alcohol.

(a) Let the parts dry.

(2) Apply Chemical Film Treatment (Bonderite M-CR 1132, formerly Alodine 1132 Touch-n-prep) to the areas with bare metal surface following the manufacture directions for application and dry time.

(3) Apply a epoxy primer (primer coat) to the bare metal surface following the manufacture directions for application and dry time.

**NOTE:** Airplanes that have a zinc chromate coating, it is allowable to use zinc chromate coating or epoxy primer for the touch-up areas. It is not required to remove zinc chromate coating for the application of epoxy primer.

(4) Go to Step 10.

C. If there was not rework and the carry-thru spar was not entirely primed before the inspection:

(1) Wipe the entire surface with clean wiping cloths wet with isopropyl alcohol.

(a) Let the surface dry.

(2) Apply Conversion coating (Bonderite M-CR 600RTU or allowable alternate) to the entire carry-thru spar surface following the manufacture directions for application and dry time.

(3) Apply a epoxy primer (primer coat) to the entire surface following the manufacture directions for application and dry time.

**NOTE:** Zinc chromate is an acceptable alternate to epoxy primer.

(4) Go to Step 10.

D. If there was not rework and the carry-thru spar was entirely primed before the inspection:

**NOTE:** If the carry-thru spar has a zinc chromate coating, it is acceptable to keep the zinc chromate coating, it is not necessary to remove the zinc chromate coating.

(1) Go to Step 10.

10. Apply Corrosion Inhibiting Compound (CIC) to the entire surface of the carry-thru spar that is accessible in the fuselage as follows: (Refer to SEL-51-01 Standard Practices - Structures - Use of Corrosion Inhibiting Compounds.)

    **NOTE:** SEL-51-01 is a resource that provides additional detailed information about the application process of CIC such as equipment, facility, cleaning, masking, and application processes.

    A. Mask areas around the carry-thru spar areas to prevent over spray of the CIC.

    B. Spray aerosol with extension tube to minimize over spray.

    C. Apply the CIC in one full wet coat.

    D. Some sag/run is acceptable. A spot of significant sag/run needs to be cleaned by MPK (methyl propyl ketone) wiping and the CIC shall be reapplied.

    E. Wet film thickness of CIC is approximately 1 to 2 mils for Cor-Ban 23.

    **NOTE:** The coating should be tack-free after two to three hours.

    F. After the CIC coating is tack-free, remove the masking from around the application area.

    G. Let the CIC coating cure with a minimum cure temperature no less than 50 degrees F.

11. Install removed utility systems, oxygen systems, headliner and upholstery that was removed to access the carry-thru spar. (Refer to the applicable Model Service or Maintenance Manual.)

    **NOTE:** The installation of the foam padding to the bottom of the carry-thru spar is optional however; the headliner final fit may differ if the foam padding is not installed.

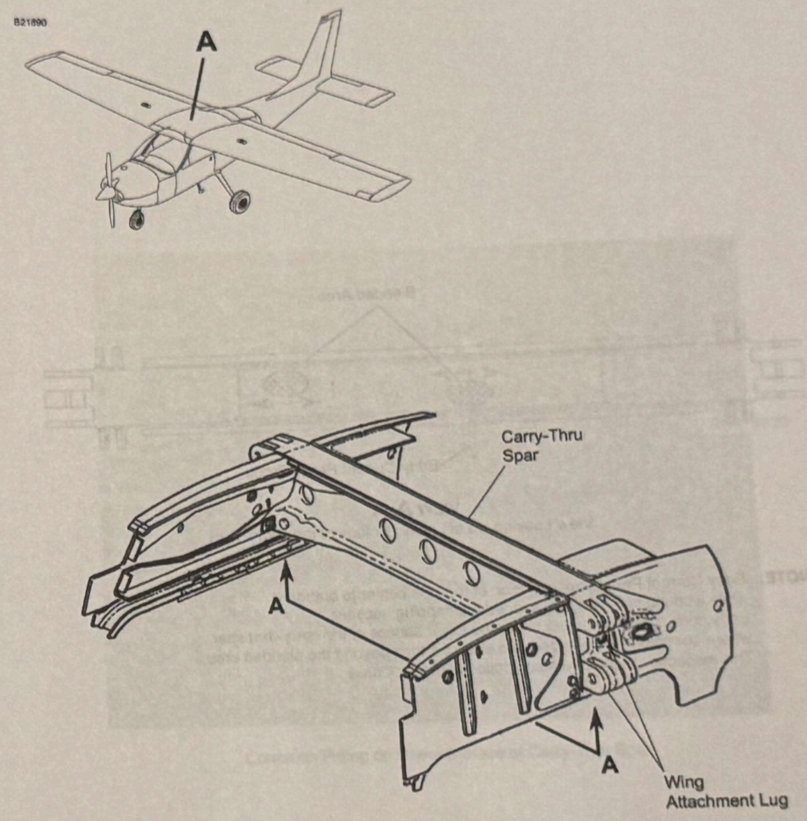
12. Install the pilot and co-pilot seats if removed. (Refer to the applicable Model Service or Maintenance Manual.)

13. Remove the maintenance warning tags and connect the airplane battery.

14. Make an entry in the airplane logbook that states compliance and method of compliance with this service document.



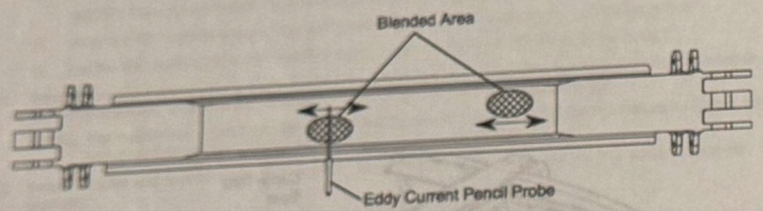





DETAIL A

0510T1035
A1210X1037

Figure 1. CARRY-THRU SPAR INSPECTION (Sheet 1)




VIEW A-A
View Looking Up at Lower Surface of the Carry-Thru

**NOTE:** Eddy Current Pencil Probe motion of travel is center to outboard while working small equally spaced overlapping sections. Eddy current inspection will cover the lower service of the carry-thru spar where corrosion was blended and extend 1 Inch beyond the blended area. This inspection technique also applies to the Kick area.

2110066-1

Figure 1. CARRY-THRU SPAR INSPECTION (Sheet 2)





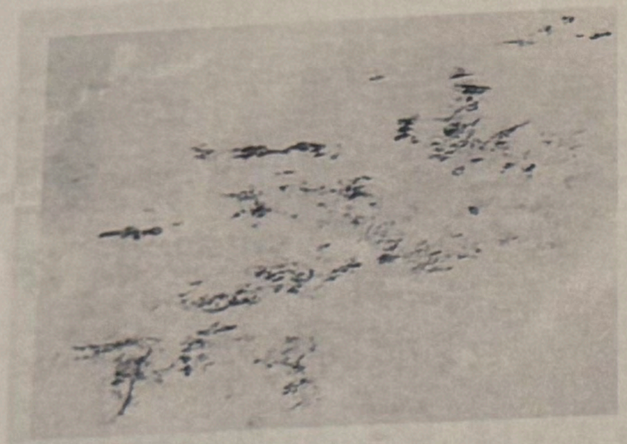



Corrosion Pitting on Lower Surface of Carry-Thru Spar

**NOTE:** Image not to scale.

Figure 1. CARRY-THRU SPAR INSPECTION (Sheet 3)

B21693



Stress Corrosion Cracking on Spar Cap

Figure 1. CARRY-THRU SPAR INSPECTION (Sheet 4)





B21694




Exfoliation Corrosion on Spar Cap

Figure 1. CARRY-THRU SPAR INSPECTION (Sheet 5)

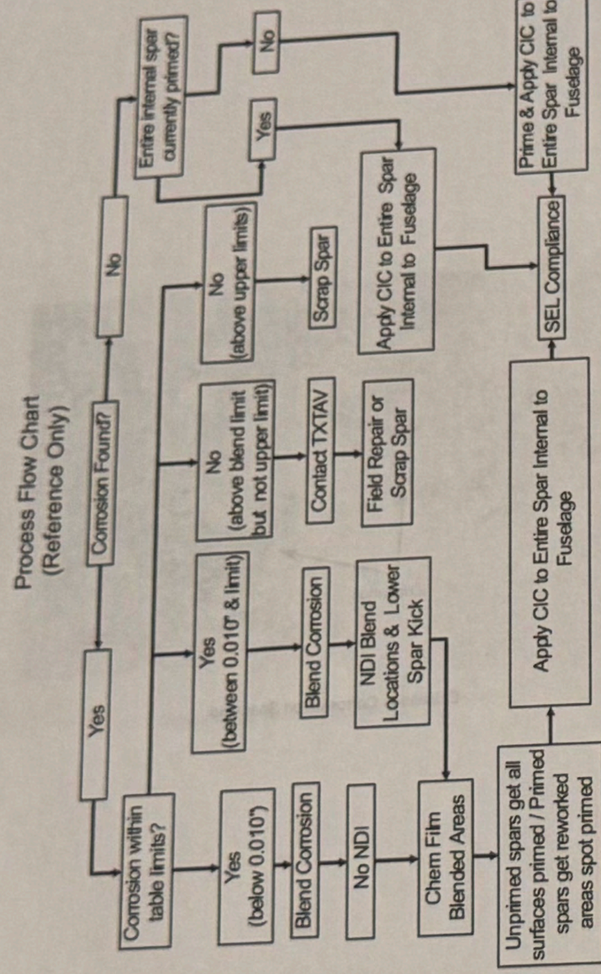



Figure 2. PROCESS FLOW CHART (REFERENCE) (Sheet 1)





**MATERIAL INFORMATION**

No parts are required to complete this service document.

Single Engine

# ATTACHMENT

Beechcraft | Citation | Textron Aviation

SEL-57-09

**MANDATORY**

| CARRY-THRU SPAR INSPECTION REPORT | |
|---|---|
| To: | Page: 1 of ___ Pages |
| Wichita Citation Service Center | Includes this cover sheet |
| Attn: Textron Aviation Team Structures | |
| 2121 S. Hoover Rd | Registration No.: |
| Wichita, Kansas 67209 | Total Time in Service (Hrs.): |
| Phone Number: 316-517-6061 | |
| email: structures@txtav.com | Facility Name: |
| | Facility Address: |
| From: | |
| Date: | |
| Airplane Serial Number: | |
| Owner's Name: | Phone Number of Facility: |
| Owner's Address: | Fax Number of Facility: |
| | |
| | |
| Owner's Phone Number: | |
| Owner's Fax Number: | |

Please provide detailed and dimensioned descriptions of any crack(s) or corrosion. Attach pictures to this form as necessary.

| Comments/Notes: | Cracks: Yes No (Circle One) |
|---|---|
| | Corrosion: Yes No (Circle One) |
| | Airplane Operation: |
| | Severe: Yes No (Circle One) |
| | Typical: Yes No (Circle One) |
| | Unknown: Yes No (Circle One) |

Any previously known or recorded blending or material removal on the carry-thru spar? Yes No (Circle One)

| | |
|---|---|
| | |
| | |
| | |
| List any Structural Supplemental Type Certificates (STC's) Installed: | |
| | |
| | |
| | |

Single Engine

# OWNER ADVISORY

Beechcraft | Cessna | Textron

SEL-57-09

**TITLE**

WINGS - MODEL 177 CARRY-THRU SPAR ONE-TIME CORROSION INSPECTION

**TO:**

Cessna Model 177 Aircraft Owner

**REASON**

The carry-thru spar can develop corrosion and cracks. Corrosion can propagate and lead to crack development. A crack in the carry-thru spar can progress to a point that a structural failure of the carry-thru spar can occur, resulting in loss of airplane control and/or wing separation.

Non-compliance with this service letter may result in undetected corrosion and crack(s) in the carry-thru spar, which can result in structural failure of the carry-thru spar.

**COMPLIANCE**

**WARNING: The Carry-Thru spar inspection presented in this service letter applies to airplanes listed in the Effectivity Section. The compliance time is for unmodified airplanes, and represents the maximum allowable time. Airplanes that have been modified to alter the airplane design, gross weight, or airplane performance, may need to inspect sooner. Examples include but not limited to the following common supplemental type certificates (STC's) include vortex generators, wing cuffs, STOL kits, wing tips, and add-on wing fuel tanks. Contact the STC holder for revised inspection intervals.**

MANDATORY. This service document must be accomplished within 200 flight hours or the next Annual Inspection from date of receipt, whichever occurs first.

Airplanes which have complied with SEL-57-07 but not yet with this service letter do not need to do the inspection outlined in this service letter, however; these airplanes need to complete Steps 9 and 10 of this service letter within 200 flight hours or at the next annual inspection, whichever occurs first.

Airplanes which have not complied with SEL-57-07 must complete this service letter by the compliance time listed for the appropriate model.

After this service letter is complied with, the inspection outlined in SEL-57-07 does not need to be complied with.

If the inspection form associated with this service letter or SEL-57-07 has not been sent in, send it in whether or not cracks or corrosion were found. Refer to the Carry-Thru Spar Inspection Report for contact information.

**LABOR HOURS**

For planning purposes only:

| WORK PHASE | LABOR-HOURS |
|---|---|
| Inspection | As Necessary |

**MATERIAL AVAILABILITY**

No part are required to complete this service document.



Textron Aviation Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

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Single Engine

# OWNER ADVISORY

SEL-57-09

**WARRANTY**

None

**NOTE:** As a convenience, service documents are now available online to all our customers through a simple, free-of-charge registration process. If you would like to sign up, please visit the Customer Access link at www.txtavsupport.com to register.



Single Engine

# SERVICE LETTER

Cessna
A Textron Company

SEL-51-01

**TITLE**

STANDARD PRACTICES - STRUCTURES - USE OF CORROSION INHIBITING COMPOUNDS

**TO:**

Cessna Distributors, Authorized Service Facilities, CPC's, and affected Owners of Record

**EFFECTIVITY**

All Cessna 300 (LC40-550FG), Cessna 350 (LC42-550FG) and 400 (LC41-550FG) model airplanes

All Cessna 172R, 172S, 182S, 182T, T182T, 206H, and T206H model airplanes

All Cessna single-engine classic model airplanes

**REASON**

Cessna recommends the use of corrosion inhibiting compounds to assist in protecting airplanes from corrosion.

**NOTE:** Cessna's warranty excludes coverage of corrosion damage. The use of corrosion inhibiting compounds does not change the warranty in any way.

**DESCRIPTION**

This service letter establishes the requirements for the application of tack-free, soft, film-based corrosion inhibiting compounds to assemblies and assembled aircraft by spray application.

**COMPLIANCE**

INFORMATIONAL. This service letter is for informational purposes only.



Cessna Aircraft Company, Cessna Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800, Fax 1-316-517-7271,
Email: customercare@cessna.textron.com

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**CONSUMABLE MATERIAL**

The consumable materials that follow are the materials that Cessna recommends be used when using corrosion inhibiting compounds.

| NAME | NUMBER | MANUFACTURER | USE |
|---|---|---|---|
| Cor-Ban 23 | COR-BAN-23 (U074098) | Cessna Aircraft Company<br>Cessna Service Parts and Programs<br>5800 East Pawnee, PO Box 1521<br>Wichita, KS 67218 | To assist in protecting airplanes from corrosion. |
| Extreme Simple Green Aircraft & Precision Cleaner or approved equivalent* | | Commercially Available | To be used for cleaning. |
| Formit-18 Fan | Formit-18 | Cessna Aircraft Company<br>Cessna Service Parts and Programs<br>5800 East Pawnee, PO Box 1521<br>Wichita, KS 67218 | To be used for spray application. |

*Other Simple Green Cleaners are not approved for use. Refer to the applicable maintenance manual for other approved cleaners.

**NOTE:** Cessna Materials and Processes has also tested and approved Cor-Ban 35, ARDROX AV-8, and ARDROX AV-15. These products may be used at the owner's discretion.

**NOTE:** Cor-Ban 23 or ARDROX AV-8 is preferred for use in areas where high penetration of corrosion inhibiting compound is needed.

**CAUTION:** Do not use any other Simple Green products other than Extreme Simple Green Aircraft & Precision Cleaner, as some have been found to be corrosive.

**REFERENCES**

None

**PUBLICATIONS AFFECTED**

None

**ACCOMPLISHMENT INSTRUCTIONS**

1. General Requirements:
   - A. Corrosion inhibiting compounds listed in this service letter are one-component. Therefore, mixing is not required.
   - B. Surfaces shall be dry, clean, and free from corrosion at the time of corrosion inhibiting compound application.
   - C. If any functional/operational testing is required after corrosion inhibiting compound application, it shall be completed as defined by the maintenance manual.
2. Equipment Requirements:
   - A. Corrosion inhibiting compound in aerosol form shall be sprayed by extension tube. The Formit-18 extension tube from Zip-Chem Products is recommended.
   - B. Corrosion inhibiting compound in bulk resin shall be sprayed by HVLP spray gun. The MF-3100 Microflex HVLP spray gun is recommended.
   - C. The operator needs to be equipped with proper protective equipment and respiratory protection. A half-face respirator with organic vapor cartridges or full supplied air hood should be used during the application.





3. Facility Requirements:
   - A. Spray booth with an air supply system is required. Air velocity should be kept to a minimum without violating OSHA regulations.
   - B. Instruments and lubricants used as a part of the air make up system shall not introduce any contaminants into the airstream.
   - C. Air temperature in spray booth shall maintain no less than 70°F during the application of corrosion inhibiting compounds.

     **CAUTION:** Only Extreme Simple Green Aircraft & Precision Cleaner or approved equivalent may be used to clean the corrosion inhibiting compound application area.
4. Cleaning Requirements:
   - A. Clean the corrosion inhibiting compound application area with a cleaner, listed in this service letter. Sanding is not required for adhesion. Direct impingement of cleaner or rinse water spray on wheel bearings or lubricated bearings shall be avoided.
   - B. Clean the surfaces to be applied with corrosion inhibiting compound as follows:
     - (1) Apply a cleaner with handheld sprayer. Cleaner pressure shall be lower than 100 psi.
     - (2) Apply a full wet coat of the cleaner to the area of corrosion inhibiting compound application.
     - (3) Allow the cleaner to dwell for 5-10 minutes and scrub with soft-bristled brush (non-metallic).
     - (4) Reapply with cleaner as needed to keep the surface wet.

       **NOTE:** If the surface dries before being rinsed, reapply the cleaner.
     - (5) Rinse with reverse osmosis or de-ionized water. Water pressure shall be lower than 100 psi.
     - (6) Completely dry the areas where corrosion inhibiting compound will be applied.
5. Masking Requirements:
   - A. Cover all windows, polished surfaces, brakes, tires, and adjacent areas of possible over spray with paint masking papers or plastics.
   - B. Mask the following parts or assemblies with aluminum foil or paint masking tape if they are in the vicinity of the corrosion inhibiting compound application:
     - (1) Landing gear components
     - (2) Actuator components
     - (3) Movable mechanical components
     - (4) Electrical components, including wires, switches, and sensors
     - (5) Seals
     - (6) Bleed air lines.

       **NOTE:** Aluminum or stainless steel tubes, sealants, and adhesives are not required to be masked prior to the corrosion inhibiting compound application.
6. Application of corrosion inhibiting compounds:
   - A. Spray aerosol with extension tube to minimize over spray. Choose the proper type of extension tube that covers application area without over spray.
   - B. Apply the corrosion inhibiting compound in one full wet coat.

     **NOTE:** The coverage of corrosion inhibiting compound is seen with slight yellow or amber color.
   - C. Some sag/run is acceptable. A spot of significant sag/run needs to be cleaned by MPK (methyl propyl ketone) wiping and the corrosion inhibiting compound shall be reapplied.

D. Wet film thickness of the corrosion inhibiting compound is approximately 1 to 2 mils for Cor-Ban 23 or ARDROX AV-8 application. Wet film thickness of the corrosion inhibiting compound is approximately 2 to 3 mils for Cor-Ban 35 or ARDROX 15 application.

E. The coating will be dry enough to be tack-free and de-mask around the application area after two to three hours.

**NOTE:** The aircraft shall remain in paint facility until tack-free.

F. After de-masking, visually inspect the oleos, actuators, control cables, pulleys, and electrical or mechanical switches.

(1) If any over spray or penetration of the corrosion inhibiting compound is suspected, thoroughly clean with MPK for removal.

G. After tack-free, the coating can be cured indoors or outdoors. The minimum cure temperature shall be no less than 50 degrees F.

7. Material Disposal:

A. Dispose of the aerosol extension tube. This item is intended for one-time use only.

B. All materials shall be disposed of as hazardous waste.

**NOTE:** Masking materials with corrosion inhibiting compound residue shall be disposed of as hazardous waste as well.

8. Repair Requirements:

A. A small area of corrosion inhibiting compound can be stripped with an MPK wipe.

**NOTE:** A corrosion inhibiting compound can be reapplied once without stripping on top of previous existing coat after cleaning per the instructions in this service letter. However, this approach is not preferred.

9. The following are areas where Cessna recommends the application of corrosion inhibiting compounds:

A. Nose landing gear wheel wells

B. Main landing gear wheel wells

C. Flap coves.



N 30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

69-24-3 N
AD NUMBER

## Marvel-Schebler Carburetor

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Part No./Serial No.

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 6-23-86 | | | D.N.A. CARB S/N | |
| | | | | |
| | | | | |
| | | | | |

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Amdt. 39-881. Applies to Marvel Schebler Models MA-3-A, MA-3-PA, MA-3-SPA, MA-4-SPA, MA-4-5, MA-5, MA-4-5-AA, MA-6AA, and HA-6 carburetors of the following listed part numbers and serial numbers installed on the Continental, Franklin and Lycoming model engines as specified below, to-wit:

| Engine Mfgr. & Model | Carburetor Model | Carburetor Part Number | Carburetor Serial Numbers |
|---|---|---|---|
| CONTINENTAL | | | |
| A-65 & A-75 Series | MA-3-PA | A10-4233 | P-22-460 thru P-22-464 |
| O-200 Series | MA-3-SPA | A10-4115-1 | AV-4-4094 |
| O-200 Series | MA-3-SPA | A10-4894 | BE-14-10218 thru BE-15-11672 |
| C-85 Series | MA-3-SPA | A10-4240 | AU-15-235 thru AU-15-244 |
| C-90 Series | MA-3-SPA | A10-4252 | Q-23-2432 thru Q-23-2436 |
| C-145 Series | MA-3-SPA | A10-4895 | BF-14-3598 thru BF-15-3855 |
| O-470-K | MA-4-5 | A10-3965-12 | H-3-6894 thru H-3-6896 |
| O-470-R | MA-4-5 | A10-4893 | BD-13-3946 thru BD-13-4060 |
| FRANKLIN | | | |
| 4A-235 Series | MA-3-SPA | A10-4654 | BN-3-112 thru BN-3-130 |
| 6A-335 Series | MA-5 | A10-4865 | BC-14-530 thru BC-16-706 |
| 6V-350 Series | MA-5 | A10-4899 | BA-14-203 thru BA-14-207 |
| 6A-350 Series | MA-5 | A10-4865 | BC-14-530 thru BC-16-706 |
| LYCOMING | | | |
| O-235 Series | MA-3-A | A10-3103-1 | Y-30-3132 thru Y-30-3275 |
| O-235 Series | MA-3-A | A10-4853 | BV-0-268 thru BV-0-538 |
| O-235 Series | MA-3-PA | A10-4978-1 | BQ-1-252 thru BQ-3-276 |
| O-235 Series | MA-3-PA | A10-5050 | BY-0-100 thru BY-1-291 |
| O-290 Series | MA-3-SPA | A10-3346-1 | B-35-342 thru B-36-359 |
| O-320 Series | MA-4-SPA | A10-3678-32 | A-25-14781 thru A-26-16248 |
| O-320 Series | MA-4-SPA | A10-5009 | BL-5-2632 thru BL-5-3435 |
| O-360 Series | MA-4-5 | A10-3878 | G-34-4851 thru G-36-5362 |
| O-360 Series | MA-4-5 | A10-4184-1 | K-27-6460 thru K-27-6602 |
| O-360 Series | MA-4-5 | A10-5034 | BU-0-283 thru BU-0-383 |
| O-360 Series | HA-6 | A10-5045 | BW-0-198 thru BW-4-550 |
| VO-435 Series | MA-4-5-AA | A10-4025-12 | Z-16-2304 thru Z-18-2434 |
| TVO-435 Series | MA-6-AA | A10-4438-1 | AH-19-3876 thru AH-21-4067 |
| O-540 Series | MA-4-5 | A10-4404 | R-24-6530 thru R-26-6916 |
| O-540 Series | MA-4-5 | A10-4404-1 | AO-20-3571 thru AO-23-3829 |
| O-540 Series | MA-4-5 | A10-5042 | BS-1-427 thru BS-1-588 |
| O-540 Series | MA-4-5 | A10-5054 | BZ-0-180 thru BZ-0-209 |
| VO-540 Series | MA-6-AA | A10-4218-1 | AK-17-1274 thru AK-19-1478 |
| VO-540 Series | MA-6-AA | A10-4975 | BK-2-125 thru BK-3-148 |

**Note:** The affected carburetors listed above were manufactured between December 5, 1968, and June 23, 1969. Approximately 25% of these carburetors have been inspected and cleaned by Marvel-Schebler or the manufacturers of the engines or aircraft on which the carburetors are installed. Marvel-Schebler Service Bulletin A1-69 lists the carburetors remaining to be inspected and covers the same subject matter as this AD. Any carburetor serial numbers included in this AD but not listed on Marvel-Schebler Service Bulletin A1-69 comply with this AD, and require no further inspection or cleaning. A logbook entry of compliance and nameplate marking must be made on these unlisted carburetors. The "A" prefix to the part numbers listed above does not appear on the carburetor nameplate.

Compliance required within the next 25 hours time in service after the effective date of this AD, unless previously accomplished.

To prevent possible power losses due to blockage of carburetor metering passages by thread lubricant or other foreign material, accomplish the following or an equivalent procedure approved by the Chief, Engineering and Manufacturing Branch, FAA, Central Region, or Chief, Engineering and Manufacturing Branch, FAA, Eastern Region:

Remove the carburetor bowl drain plug with the aircraft fuel valve in the "ON" position and allow the carburetor to flush for 20 to 30 seconds. The auxiliary pump, if installed, should be operating. After flushing, inspect the drain plug cavity and drain plug for thread lubricant or other foreign material and remove any such material noted. After cleaning, reflush 20 to 30 seconds, reinstall plug approximately one thread into cavity, apply Parker Seal Lube or equivalent on exposed threads and tighten.

**Note:** If practical, aircraft should be positioned so that bottom of bowl slopes toward drain opening during flushing and cleaning. Recommended torque for ⅛" pipe plug is 50-60 in. lbs., for ¼" pipe plug is 120-144 in. lbs.

After completion of the above, impression stamp or engrave "A1" on nameplate or apply approximately ¼-inch diameter dot of yellow enamel or similar permanent material to nameplate.

This amendment becomes effective November 29, 1969.

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

71-1-3 N
AD NUMBER

# Cracks in Stabilizer Attachment Angles

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 11-8-78 | 944 | | See Logbook # 3 | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-1138. Applies to Model 177 series (Serial Numbers 17700001 through 17701164) and Model 177A series (Serial Numbers 17701165 through 17701370) Airplanes.

Compliance required as indicated, unless already accomplished.

To prevent cracks in the stabilator attachment angles P/N 1712108, accomplish the following:

A. Within 25 hours time in service after the effective date of this AD, remove the fuselage tail stinger and inspect the stabilator attachment angles, P/N 1712108, for evidence of cracks using the dye penetrant method in conjunction with the procedure set forth in Cessna Service Kit, No. SK 177-11, dated December 8, 1970, or any other method approved by the Chief, Engineering and Manufacturing Branch, FAA, Central Region. If no cracks are found during this inspection, install stiffener brackets, P/N 1709019-3 and -4, in accordance with the instructions contained in said Service Kit.

B. If cracks are detected during the inspection required by Paragraph A, prior to further flight, rework or replace the stabilator attachment angles, P/N 1712108, and then install stiffener brackets P/N 1709019-3 and -4 in accordance with the instructions contained in Cessna Service Kit SK 177-11, dated December 8, 1970, or any other method approved by the Chief, Engineering and Manufacturing Branch, FAA, Central Region.

Cessna Service Letter SE70-32, dated December 18, 1970, or later FAA approved revisions pertain to this subject.

This amendment becomes effective January 5, 1971.

AIRCRAFT REGISTRATION NO. N30553

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

72-6-5 Rev. 2 M
AD NUMBER

# Marvel-Schebler Carburetor

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Part No./Serial No.

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | | See Log Book #2 |
| 8/15/1995 | | | | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-1411 as amended by Amendment 39-1685 is further amended by Amendment 39-5338. Applies to Models MA-3, MA-3A, MA3-PA, MA-3SPA, MA4-SPA, MA4-5, MA4-5AA, MA-5, MA-5AA, MA-6AA and HA-6 carburetors used on various Franklin (Aircooled), Continental, Lycoming and Ranger engines, having one of the throttle arm and shaft configurations shown in Illustrations A, B, C, or D.

Compliance is required within 30 days after the effective date of the AD, unless already accomplished.

To prevent looseness or separation of the throttle arm, accomplish the following or any equivalent procedure approved by Chief, Engineering and Manufacturing Branch, FAA, Great Lakes Region.

1. Inspect the throttle arm to verify that it is bottomed against the shoulder on the throttle stop and positioned so that full throttle travel is obtained, and if not, loosen clamping screw and reposition arm and/or re-rig control system in accordance with airplane manufacturers' maintenance instructions to obtain these conditions.

2. Inspect the throttle arm on Marvel-Schebler MA-3, MA-3A, MA-3PA, MA3-SPA and MA-4SPA carburetors to determine whether it has a spotfaced or milled flat for the head of the clamping screw. Replace any arm having a milled flat with one having a spotfaced flat. If not already installed, install a Marvel-Schebler P/N A15-493 clamping screw (No. 10-24 x ⅝ slotted drilled fillister head) in the throttle arm. Torque the clamping screw to 20-28 in.-lbs. and inspect the slot in the end of the arm for clearance. If the slot has closed so that no clearance remains, replace the arm and retorque to the above specifications. After the specified torque is established safety wire the throttle arm and clamping screw to the throttle stop as shown in Illustration A.

3. On Marvel-Schebler MA-4-5, MA4-5AA, MA-5, MA-5AA, MA-6AA and HA-6 series carburetors with throttle arms having a 10-32 bolt and nut clamping the arm on the throttle stop, torque the nut to 35 to 40 in.-lbs. and safety wire the throttle arm to the throttle stop as shown in Illustration B. On these series carburetors having a throttle arm threaded for a 10-24 screw, if not already installed, install a Marvel-Schebler P/N A15-493 clamping screw (No. 10-24 x ⅝ slotted drilled fillister head) in the throttle arm and torque the screw to 20 to 28 in lbs. Safety wire the throttle arm to the throttle stop as shown in Illustration C or D.

**Note:** The procedures specified in American Aviation Corporation Service Letter No. 69-4, dated October 3, 1969, Cessna Service Letter SE71-17 revised February 25, 1972, and Lycoming Service Bulletin No. 330A, dated October 30, 1970, are approved as equivalent procedures to those prescribed in this AD for the applicable carburetors.

Upon request, an equivalent means of compliance with the requirements of this AD may be approved by the Manager, New York Aircraft Certification Office, Aircraft Certification Division, Northeast Region, 181 South Franklin Avenue, Room 202, Valley Stream, NY 11581.

Amendment 39-1411 became effective March 24, 1972.

Amendment 39-1685 became effective July 9, 1973.

This Amendment 39-5338 becomes effective July 3, 1986.

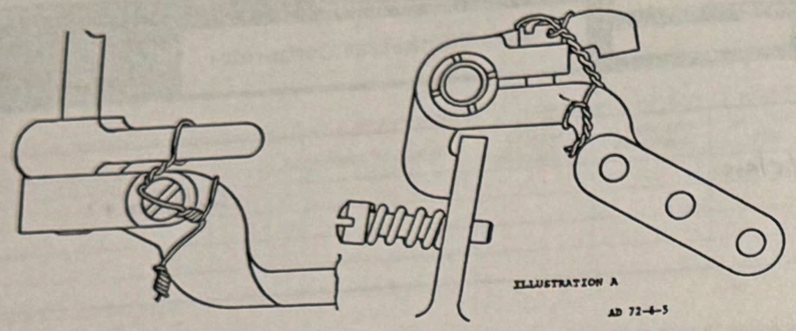

ILLUSTRATION A

AD 72-4-5

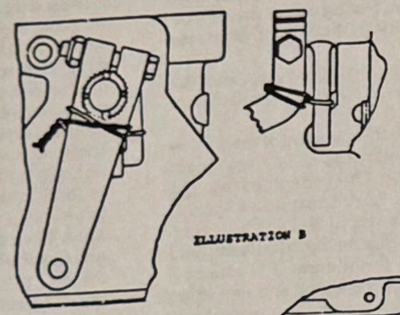

ILLUSTRATION B

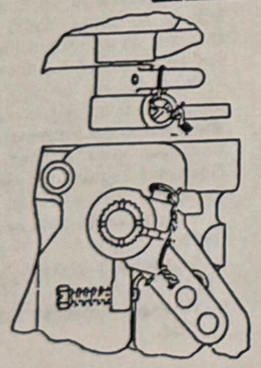

ILLUSTRATION C

72-06-05 R2

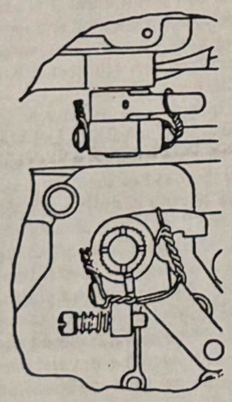

ILLUSTRATION D

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

# Lycoming Engine

73-23-1 Rev. 4 N
AD NUMBER

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | O.N.A. S/N | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-1738 as amended by Amendment 39-1825, 39-1984 and 39-2188 is further amended by Amendment 39-2804. Applies to all Lycoming series engines and all engines overhauled by Lycoming (also known as remanufactured) listed below and in Lycoming Service Bulletin No. 367F and in Supplement No. 1 for Lycoming Service Bulletin No. 367F.

**O-320 Series.** Serial Numbers: L-6798-39A thru L-6815-39A

**IO-320 Series.** Serial Number: L-4952-53

**O-360 Series.** Serial Numbers: L-17369-36A thru L--17408-36A, L-17410-36A thru L-17427-36A, L-17429-36A thru L-17452-36A, L-17454-36A thru L-17479-36A, L-17481-36A thru L-17495-36A, L-17497-36A thru L-17500-36A, L-17503-36A thru L-17505-36A, L-17516-36A thru L-17518-36A, RL-523-36A, RL-2030-36, RL-3933-36A, RL-7173-36A, RL-11189-36A, RL-18937-36A.

**IO and HIO-360C Series.** Serial Numbers: L-9409-51A, L-9410-51A, L-9415-51A thru L-9417-51A, L-9419-51A, thru L-9427-51A, L-9438-51A thru L-9453-51A, L-9455-51A thru L-9457-51A thru L-9498-51A, L-9500-51A thru L-9517-51A, L-9519-51A thru L-9584-51A, L-9566-51A thru L-9616-51A, L-9618-51A, L-9620-51A thru L-9640-51A, L-9642-51A thru L-9651-51A, L-9653-51A thru L-9713-51A, L-9716-51A, L-9718-51A thru L-9768-51A, L-9770-51A thru L-9774-51A, L-9776-51A thru L-9826-51A, L-9828-51A thru L-9848-51A, L-9850-51A thru L-9930-51A, L-9932-51A thru L-9962-51A, L-9964-51A thru L-9995-51A, L-9997-51A thru L-10090-51A, L-10092-51A thru L-10113-51A, L-10115-51A thru L-10249-51A, L-10257-51A thru L-10261-51A, L-10263-51A thru L-10273-51A, L-10279-51A thru L-10281-51A, L-10284-51A thru L-10290-51A, RL-191-51A, RL-591-51A, RL-595-51A, RL-702-51A, RL-778-51A, RL-778-51A, RL-935-51A, RL-993-51A, RL-1267-51A, RL-1272-51A, RL-1435-51A, RL-1481-51A, RL-1515-51A, RL-1642-51A, RL-1769-51A, RL-1845-51A, RL-1847-51A, RL-2143-51A, RL-2227-51A, RL-2249-51A, RL-2464-51A, RL-2478-51A, RL-2508-51A, RL-2562-51A, RL-2629-51A, RL-2672-51A, RL-2923-51A, RL-3048-51A, RL-3113-51A, RL-3195-51A, RL-3235-51A, RL-3318-51A, RL-3344-51A, RL-3392-51A, RL-3427-51A, RL-3464-51A, RL-3540-51A, RL-3573-51A, RL-3738-51A, RL-3832-51A, RL-3868-51A, RL-3974-51A, RL-4787-51A, RL-4980-51A, RL-5082-51A, RL-5085-51A, RL-5652-51A, RL-5685-51A, RL-5751-51A, RL-5824-51A, RL-6331-51A, RL-6345-51A, RL-6350-51A, RL-6417-51A, RL-6469-51A, RL-6823-51A, RL-6952-51A, RL-6993-51A, RL-6724-51A, RL-6744-51A, RL-6950-51A, RL-7043-51A, RL-7201-51A, RL-7357-51A, RL-7422-51A, RL-7475-51A, RL-7806-51A, RL-7852-51A, RL-7866-51A, RL-8000-51A, RL-8354-51A, RL-8872-51A, RL-9611-51A, RL-9812-51A.

**AIO-360 Series.** Serial Numbers: L-165-63A thru L-171-63A.

**TIO-360 Series.** Serial Numbers: L-112-64A thru L-115-64A.

**LIO-360 Series.** Serial Numbers: L-440-67A thru L-480-67A, L-487-67A thru L-512-67A, L-514-67A thru L-537-67A, L-545-67A thru L-591-67A, L-593-67A thru L-632-67A, L-634-67A thru L-648-67A, L-650-67A thru L-655-67A, L-660-67A.

**GO-480-G1D6 Series.** Serial Numbers: RL-288-37, RL-482-37

**IGSO-480-A1E6 Series.** Serial Numbers: 4L-829-44, TL-1258-44, RL-1508-44, RL-1509-44, RL-1518-44, RL-1586-44.

**IGO-540 Series.** Serial Number: L-320-49.

**VO-540 Series.** Serial Numbers: L-2280-43, L-2281-43. RL-343-43, RL-376-43, RL-456-43, RL-485-43, RL-522-43, RL-564-43, RL-691-43, RL-694-43, RL-846-43, RL-849-43, RL-1125-43, RL-1148-43, RL-1186-43, RL-1333-43, RL-1452-43, RL-1571-43, RL-1700-43, RL-1731-43, RL-1828-43, RL-1900-43, RL-1913-43, RL-1929-43, RL-1931-43, RL-2041-43, RL-2125-43, RL-2142-43, RL-2208-43, RL-2224-43, RL-2245-43, RL-2269-43, RL-2275-43 thru RL-2279-43.

**O-540-A1C5, -A1D5, -B1A5, -B2B5, -B4B5, -B2C5, E4A5, -E4B5 Series.** Serial Numbers: L-15062-40, L-15063-40, L-15108-40, L-15117-40, L-15132-40, L-15133-40, L-15161-40, L-15221-40, L-15222-40, L-15225-40 thru L-15227-40, L-15242-40 thru L-15249-40, L-15297-40, L-15300-40, L-15304-40 thru L-15320-40, L-15322-40 thru L-15367-40, L-15372-40. RL-1040-40, RL-1207-40, RL-3330-40, RL-6768-40, RL-7670-40, RL-9416-40, RL-10859-40, RL-11312-40, RL-11377-40, RL-11420-40, RL-11882-40, RL-13058-40RL-13637-40, RL-14194-40.

**IO-540-A1A5, -B1A5, -C1A5, C4B5, -D4A5, -E1A5, -E1B5, -G1D5, -J4A5, -K1A5, -K1B5, -K1C5, -K1E5, -K1ED5 Series.** Serial Numbers: L-10118-48 thru L-10122-48, L-10124-48 thru L-10127-48, L-10144-48, L-10145-48, L-10209-48, L-10213-48, L-10221-48 thru L-10260-48, L-10263-48 thru L-10267-48, L-10303-48, L-10304-48, L-10306-48 thru L-10308-48, L-10317-48 thru L-10320-48, L-10398-48, L-10459-48, L-10487-48 thru L-10548-48, L-10548-48 thru L-10562-48, L-10564-48 thru L-10569-48, L-10571-48 thru L-10584-48. RL-113-48, RL-622-48, RL-918-48, RL-1170-48, RL-1506-48, RL-1840-48, RL-2015-48, RL-2050-48, RL-2210-48, RL-2271-48, RL-2276-48, RL-3610-48, RL-3614-48, RL-3732-48, RL-4057-48, RL-4103-48, RL-4506-48, RL-5778-48, RL-7116-48.

**TIO-540-A2B, -A2C, -C1A; TIO-540-J2BD Series.** Serial Number: L-2412-61 thru L-2414-61, L-2416-61 thru L-2419-61, L-2489-61 thru L-2498-61, L-2501-61 thru L-2503-61, L-2550-61, L-2557-61, L-2562-61, L-2566-61, L-2567-61, L-2572-61, L-2583-61, L-2585-61 thru L-2597-61. RL-122-61, RL-226-61, RL-759-61, RL-771-61, RL-1283-61, RL-1268-61, RL-1346-61, RL-1468-61, RL-1879-61, RL-1883-61, RL-2189-61.

**LIO-540 Series.** Serial Numbers: L-102-68, L-105-68, L-109-68, L-113-68 thru L-117-68, L-125-68, L-126-68 thru L-130-68, L-147-68 thru L-152-68, L-154-68, L-155-68. RL-106-68.

**IGSO-540 Series.** Serial Numbers: L-3060-50, L-3061-50, L-3070-50, L-3071-50, L-3074-50, L-3085-50 thru L-3087-50, L-3090-50, L-3093-50, L-3094-50. RL-315-50, RL-518-50, RL-528-50, RL-821-50, RL-1014-50, RL-1100-50, RL-1151-50, RL-1174-50, RL-1216-50, RL-1517-50, RL-1558-50, RL-1591-50, RL-1682-50, RL-1694-50, RL-1700-50, RL-1773-50, RL-1788-50, RL-1821-50, RL-2003-50, RL-2157-50, RL-2187-50, RL-2385-50, RL-2479-50, RL-2543-50, RL-2804-50, RL-2907-50.

**TIO-541 Series.** Serial Numbers: L-866-59 thru L-873-59

**TIGO-541 Series.** Serial Numbers: L-343-62 thru L-352-62. RL-181-62.

**IO-720-A, -B and -C Series.** Serial Numbers: L-505-54, L-506-54, L-508-54 thru L-529-54, L-532-54 thru L-538-54, L-540-54, L-541-54, L-548-54 thru L-549-54, L-551-54 thru L-554-54.

Compliance required within 50 hours in service after the effective date of this AD, unless already accomplished.

To prevent piston pin failures resulting from grinding cracks which occurred during manufacture, comply with Lycoming Service Bulletin No. 367F or equivalent procedure approved by Chief, Engineering and Manufacturing Branch, FAA, Eastern Region.

The manufacturer's specifications and procedures identified and described in this directive are incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive who have not already received these documents from the manufacturer, may obtain copies upon request to Avco Lycoming Division, Service Department, Williamsport, Pennsylvania 17701. These documents may also be examined at the Engineering and Manufacturing Branch, Federal Aviation Administration, Eastern Region, Federal Building, John F. Kennedy International Airport, Jamaica, New York 11430. A historical file on this AD which includes the incorporated material in full is maintained by the FAA at its Eastern Region Headquarters.

Amendment 39-1738 was effective November 1, 1973. Amendment 39-1825 was effective May 1, 1974. Amendment 39-1984 was effective October 10, 1974. Amendment 39-2188 was effective April 30, 1975.

This amendment 39-2804 is effective January 13, 1977.

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

74-16-6 N
AD NUMBER

# Oil Pressure Gauge Line

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 8-22-74 | 5-41 | | D.C.W | Logbook #2 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-1911. Applies to Models 177 (Serial Numbers 17700001 thru 17702041), 177RG (Serial Numbers 177RG00001 thru 177RG0445) and F177RG (Serial Numbers F177RG0001 thru F177RG0092) airplanes.

Compliance required within the next 50 hours time in service after the effective date of this AD, unless already accomplished.

To prevent failure or chafing of the oil pressure gage line located between the firewall and the oil pressure gage, install clamps between the flap control cable and the oil pressure gage line in accordance with Cessna Service Letter SE74-2 dated January 25, 1974, or later approved revisions. Any alternate method of compliance must be approved by Chief, Engineering and Manufacturing Branch, FAA, Central Region.

This amendment becomes effective August 9, 1974.

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

74-24-13 N
AD NUMBER

# United Instruments Altimeter

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 8/15/75 | | | N/A By MANUFACT. | See Logbook #2 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-2028. Applies to P/N 5932 ( ) (Serial Numbers 47851 thru 69000) and P/N 5934 ( ) (Serial Numbers 70,000 thru 102,000, A1 thru A9999, B1 thru B9999, and C1 thru C2860) altimeters installed on various aircraft, such as Piper, Beech, Cessna, Bell, Aero Commander, Schweizer, Enstrom, Helio, American Aviation, Bellanca, et al.

**Note 1:** United Instruments P/N 5932 ( ) altimeters may be additionally identified as TKK Model LA 4 TSO C-10b. United Instrument P/N 5934 ( ) altimeters may be additionally identified as TKK Model LA 7 TSO C-10b.

**Note 2:** These altimeters may also be identified by various aircraft manufacturer's part numbers. Some but not all are: **Beech:** P/N 50-380094-( ), 50-384119-( ), 58-380011-( ), 58-380012-( ) , 58-380041-( ), 100-324056-( ), 169-380073-( ) **Cessna:** P/N C661011-( ), C661071-( ), C661025-( ), C661014-( )**Piper:** P/N 99009-( ), 450-611-( ), 450-694-( ), PS50008-( )-( ), 550-488- ( ), 550-489-( ), 550-490-( ), 550-491-( ), 550-492-( ), 550-493-( ), 322-81-03, 322-81-04 **Bell:** P/N 206-070-263-( ), 47-711-303-( )

**Compliance:** Required as indicated, unless already accomplished.

To prevent being deprived of altimeter readings during certain aircraft operating conditions, accomplish the following:

A) Within the next 10 hours' time in service after the effective date of this AD, check each altimeter installed in all aircraft or check the aircraft's permanent maintenance record to determine if the altimeter falls within the Part Number and Serial Number designations set forth in the applicability statement. The owner/operator of the aircraft may make these checks.

B) If, as a result of the determinations required by Paragraph A, an altimeter falls within the Part Number and Serial Number designations in the applicability statement, prior to further flight, either comply with Paragraph C or install a placard on the instrument panel in clear view of the pilot which states:

**"AIRCRAFT APPROVED FOR DAY VFR FLIGHT ONLY"** and operate the aircraft in accordance with this limitation.

C) On or before November 30, 1976, on any altimeter which falls within the Part Number and Serial Number designations set forth in the applicability statement, either replace the altimeter with an approved replacement part, an altimeter from outside the applicable Serial Numbers, or modify the existing altimeter in accordance with the United Instruments, Inc., Service Bulletin No. 1, dated September 19, 1974, or subsequent approved revisions. A modified altimeter will be identified by a 1/4-inch white dot painted alongside the nameplate on the back of the case. Upon compliance with this paragraph, the requirements of Paragraph B are no longer applicable.

D) Any alternate means of compliance with this AD must be approved by the Chief, Engineering and Manufacturing Branch, FAA, Central Region.

E) Compliance with Paragraph B of this AD is not required if the aircraft has two sensitive altimeters installed. In the event of failure of one of the altimeters, where both altimeters are noted in the applicability statement, compliance with Paragraph B and/or C is required.

This amendment becomes effective December 5, 1974.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

74-26-9 N
AD NUMBER

# Bendix Magneto

If multi-engine: ☑ Left ☐ Right ☐ Front ☐ Rear  Part No/Serial No: _____

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 9-7-76 | | | Drive Shaft Bushing Replaced | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-2050. Applies to certain Bendix (Scintilla) S-20, S-200 and S-1200 Series Magnetos listed on Bendix Service Bulletin No. 556B.

A. Red nameplate magneto models listed in the Equipment Affected section excepting those with change designations as shown in Table No. 1 or later.

B. Blue nameplate (Bendix remanufactured) magneto models listed in the Equipment Affected section excepting those having serial number 349001 or higher.

C. Black nameplate magnetos bearing a part number listed in the Equipment Affected section.

Compliance required as indicated unless already accomplished. Within 200 hours in service or 90 days after the effective date of this AD, whichever occurs first, insure that the affected magnetos incorporate a solid steel drive shaft bushing by complying with all provisions, except the compliance paragraph of Bendix Electrical Components Division Service Bulletin No. 556B or subsequent FAA approved revision or an equivalent procedure approved by the Chief, Engineering & Manufacturing Branch, FAA, Eastern Region.

The manufacturer's specifications and procedures identified and described in this directive are incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive who have not already received these documents from the manufacturer may obtain copies upon request to the Bendix Electrical Components Division, Sidney, New York 13838. These documents may also be examined at FAA Eastern Region, Federal Building, John F. Kennedy International Airport, Jamaica, New York 11430, and at FAA headquarters, 800 Independence Avenue S.W., Washington, DC. A historical file on this AD which includes the incorporated material in full is maintained by the FAA at its headquarters in Washington, DC and at the Eastern Region.

As permitted by FAR's 21.197 and 21.199, aircraft may be flown to a base where maintenance required by this Airworthiness Directive can be accomplished.

This amendment is effective December 24, 1974.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

74-26-9 N
AD NUMBER

# Bendix Magneto

If multi-engine: ☐ Left ☑ Right ☐ Front ☐ Rear  Part No/Serial No: _____

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | O.S.A. per s/b | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-2050. Applies to certain Bendix (Scintilla) S-20, S-200 and S-1200 Series Magnetos listed on Bendix Service Bulletin No. 556B.

A. Red nameplate magneto models listed in the Equipment Affected section excepting those with change designations as shown in Table No. 1 or later.

B. Blue nameplate (Bendix remanufactured) magneto models listed in the Equipment Affected section excepting those having serial number 349001 or higher.

C. Black nameplate magnetos bearing a part number listed in the Equipment Affected section.

Compliance required as indicated unless already accomplished. Within 200 hours in service or 90 days after the effective date of this AD, whichever occurs first, insure that the affected magnetos incorporate a solid steel drive shaft bushing by complying with all provisions, except the compliance paragraph of Bendix Electrical Components Division Service Bulletin No. 556B or subsequent FAA approved revision or an equivalent procedure approved by the Chief, Engineering & Manufacturing Branch, FAA, Eastern Region.

The manufacturer's specifications and procedures identified and described in this directive are incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive who have not already received these documents from the manufacturer may obtain copies upon request to the Bendix Electrical Components Division, Sidney, New York 13838. These documents may also be examined at FAA Eastern Region, Federal Building, John F. Kennedy International Airport, Jamaica, New York 11430, and at FAA headquarters, 800 Independence Avenue S.W., Washington, DC. A historical file on this AD which includes the incorporated material in full is maintained by the FAA at its headquarters in Washington, DC and at the Eastern Region.

As permitted by FAR's 21.197 and 21.199, aircraft may be flown to a base where maintenance required by this Airworthiness Directive can be accomplished.

This amendment is effective December 24, 1974.

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

75-5-4 N
AD NUMBER

# Strobe Light Flash Tubes

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-2098. Applies to aircraft incorporating Whelen Engineering Company Incorporated A427 strobe light flash tubes manufactured before November 1, 1974.

Compliance required within the next 100 hours time in service unless already accomplished.

A. To preclude possible ignition of flammable fluids or vapors by arcing at the strobe light flash tube, install on the base of Whelen Engineering Company Incorporated A427 flash tubes a pressure sensitive vinyl label conforming to Whelen Engineering Company Incorporated Drawing A-30052, Revision 1, dated October 15, 1974, or latter FAA approved revision. Scotch Brand Type 33+ vinyl plastic electrical tape or equivalent tape approved by an FAA Maintenance/Avionics Inspector can be used in lieu of the vinyl label. If vinyl plastic electrical tape is used, it must be formed to cover the rivet at the rear of the flash tube without covering the identifying part number. If the flash tube incorporates a label, the new label or tape may be installed directly over the old label. Install the label or tape only when the label or tape and the flash tube are at a temperature above 50 °F.

B. The installation required by this AD constitutes preventive maintenance and may be performed by persons authorized to perform preventive maintenance under FAR 43.

C. Upon request with substantiating data submitted through an FAA Maintenance/Avionics Inspector, equivalent methods of compliance with this AD may be approved by the Chief, Engineering and Manufacturing Branch, Federal Aviation Administration, New England Region.

**Note:** For the requirements regarding the listing of compliance and method of compliance with this AD the airplane's permanent maintenance record, see FAR 91.173.

This amendment becomes effective thirty (30) days after publication in the Federal Register.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

75-7-2 M
AD NUMBER

# Ait Filter Seal

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 6-23-86 | 1207 | | D.N.A P/N | |
| | | | BRACKET Air Filter | |
| | | | Installed | |
| | | | | |

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Amendment 39-2132. Applies to Models 177, 177RG and F177RG airplanes.

Compliance: Required as indicated, unless already accomplished.

To preclude separation of the foam rubber air filter seal, within 25 hours' time in service, after the effective date of this AD, accomplish the following:

A) On Models 177 (Serial Numbers 17702040 through 17702220); 177RG (Serial Numbers 177RGO433 through 177RGO625); and Model F177RG (Serial Numbers F177RGO093 through F177RGO122) airplanes, remove the air filter seal attached with double-backed adhesive tape and replace with a new P11-0766 air filter seal using EC130OLP adhesive in accordance with Cessna Service Lefter SE 75-3, dated January 24, 1975, or later revision.

B) On Models 177 (Serial Numbers 601 and 17700001 through 17702039); 177RG (Serial Numbers R177RGO001 through 177RGO442); and F177RG (Serial Numbers F177RGO001 through F177RGO092) airplanes, visually inspect the air filter for the date of manufacture and on those air filters manufactured between November 1, 1973, and November 1, 1974, replace the air filter seal in accordance with Paragraph A above.

C) Any alternate method of compliance with this AD must be approved by the Chief, Engineering and Manufacturing Branch, FAA, Central Region.

This amendment becomes effective March 26, 1975.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

76-16-2 R
AD NUMBER

# Airborne Vacuum Pump

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Part No/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A By S/N | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-2685. Applies to Models 113A, 200CC, 200CW, 220CC, 220CW, 221CC, 222CW engine driven pumps.

Compliance required within the next 25 hours time in service, or by next annual inspection, whichever occurs first, after the effective date of this AD, unless already accomplished.

To prevent loss of vacuum pressure with the accompanying loss of directional or attitude gyro function accomplish the following:

Remove from service and replace with another serviceable approved vacuum pump all Airborne engine driven vacuum pumps manufactured prior to 1966 for which the model and serial numbers are listed below:

| Model | Year | Serial Nos. |
|---|---|---|
| 113A..... | 1960 | 1D1 through 12D1199 inclusive. |
| | 1961 | 1E1 through 12E2288 inclusive. |
| | 1962 | 1F1 through 12F3411 inclusive. |
| | 1963 | 1G1 through 12G4230 inclusive. |
| | 1964 | 1H1 through 12H1688 inclusive. |
| | 1965 | 1J1 through 12J210 inclusive. |
| 200CC, 200CW..... | 1963 | 5G43 through 12G903 inclusive. |
| | 1964 | 1H1 through 12H5623 inclusive. |
| | 1965 | 1J1 through 12J9397 inclusive. |
| 220CC, 220CW..... | 1964 | 2H1 through 12H680 inclusive. |
| | 1965 | 1J1 through 4J393 inclusive. |
| 221CC, 222CW..... | 1965 | 3J1 through 12J371 inclusive. |

Airborne Manufacturing Company Service Letter No. 16, dated January 29, 1976, also pertains to this subject.

This amendment becomes effective August 11, 1976.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

79-8-3 N
AD NUMBER

# Cigar Lighter Wiring

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 3-1-80 | | | Disconnected | See Logbook #3 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-3428. Applies to the following models and serial numbered airplanes certified in all categories:

Models 120, 140 S/Ns 8000 through 15075 and 15200 through 15724; Model 150 S/Ns 150065062 through 15075564; Model A150 S/Ns A1500001 through A1500480; Model 170 S/Ns 18000 through 20999 and 25000 through 27169; Model 172 S/Ns 28000 through 29999, 46001 through 47746, 17247747 through 17250572, and 17259224 through 17267584; Model R172 S/Ns R1722000 through R1722724; Model P172 S/Ns P17257120 through P17257189; Model 175 S/Ns 55001 through 56777 and 17556778 through 17557119; Model 177 S/Ns 17700001 through 17702314; Model 177RG S/Ns 177RG0001 through 177RG0788; Model 180 S/Ns 30000 through 32999, 50000 through 50355, and 18051608 through 18052770; Model 182 S/Ns 33000 through 34999, 51001 through 51556, and 18254680 through 18265965; Model 185 S/Ns 1850968 through 18503458; Model 188 S/Ns 188-0001 through 188-0572 and 18800573 through 18803046; Models 190, 195 S/Ns 7001l through 7999 and 16000 through 16183; Models 210-5(205) and 210-5A(205A) S/Ns 205-0320 through 205-0577; Models 206, U206, TU206, P206, TP206 S/Ns 206-0001 through 206-0275, U206-0276 through U206-1444, U20601445 through U20604074, P206-001 through P206-0603 and P20600604 through P20600647; Model 207 S/Ns 20700001 through 20700414 (except those aircraft with factory installed 24-volt electrical system); Models 210, T210 S/Ns 21058162 through 21061093 and T210-0001 through T210-0454.

Compliance at the next appropriate inspection prescribed by Federal Aviation Regulation 91.169 following the effective date of this AD, unless previously accomplished.

To prevent an inflight electrical system failure, smoke in the cockpit, and/or fire in the wire bundle behind the instrument panel, accomplish the following:

A. Disconnect the wire, at the ammeter or at the electrical system bus as applicable, that connects the bus to the cigar light receptacle. (The wire is connected to either the bus side or equipment side of a circuit breaker or to the ammeter.) Following the disconnection of this wire either:

1. Reconnect the wire to the electrical bus by using an existing or newly installed circuit protection device that is properly rated to protect the wire gauge used for this circuit, or

2. Disconnect the wire from the lighter receptacle at the opposite end and remove it from the airplane, or

3. Protect the wire by insulating its disconnected end, fold this wire end back against the wire bundle in which it is routed and secure it to that bundle.

NOTE: For those installations reconnected in accordance with paragraph (A)(1) the proper rated circuit protection device to be used may be determined by consulting FAA Advisory Circular 43.13-1a.

B. Any equivalent method of compliance with this AD must be approved by the Chief, Engineering and Manufacturing Branch, FAA, Central Region.

This amendment becomes effective May 21, 1979.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

79-10-14 Rev. 1 N
AD NUMBER

# Fuel Tank Vent

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 7/17-10 | | | P.C.W. Fuel Caps Installed | See Logbook #3 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-3475 as amended by Amendment 39-5901. Applies to the following Models and serial numbered airplanes, certificated in any category.

| SERIES | SERIAL NUMBERS |
|---|---|
| 140A<br>150 | 15200 through 15724<br>617, 628, 649, 17001 through 17999, 59001 through 59018; 15059019 through 15077005 |
| A150<br>170<br>172 | 15064970,A1500001 through A1500609<br>609,18729 through 27169<br>610, 612, 615, 622, 625, 630, 638, 28000 through 29999, 36000 through 36999, 46001 through 47746,17247747 through 17265684 |
| 175 | 619, 28700A, 55001 through 56777, 17556778 through 17557119 |
| P172D<br>R172 | P17257120 through P17257188<br>P17257189, R1720001 through R1720617 |
| 177 | 661, 17700001 through 17701471, 17701473 through 17701597 |
| 180 | 604, 624, 645, 30000 through 32999, 50001 through 50911, 18050912 through 18052202 |
| 182 | 613, 631, 634, 33000 through 34999, 51001 through 53007, 18253008 through 18260638 |
| 185/A185 | 632,185-0001 through 185-1599, 18501600 through 18501896 |
| 188/A188 | With wing tanks; Serials; 653, 188-0446 through 188-0572, 18800573 through 18800762 |
| 205<br>206<br>U206/TU206 | 641, 205-0001 through 205-0577<br>206-0001 through 206-0275<br>U206-0276 through U206-1444, U20601445 through U20601666 |
| P206/TP206 | P206-0001 through P206-0603, P20600604 through P20600647 |
| 207/T207<br>210/T210 | 20700001 through 20700203<br>616, 618, 57001 through 57575, 21057576 through 21059361, T210-0001 through T210-0454 |
| 336<br>337/T337 | 336-0001 through 336-0195<br>337-0001 through 337-1193, 33701194 through 33701405 |
| M337B | 337-0001 and up |

**Compliance**: Required as indicated, unless already accomplished.

To provide an alternate source of fuel tank venting in case of fuel tank vent obstruction by foreign material and/or sticking of the fuel vent valve, within the next 100 hours time-in-service after the effective date of this AD, accomplish the following:

(A) Install applicable vented fuel cap(s) with related adapters and fuel servicing placards in accordance with Cessna Service Letter SE77-6 dated March 4, 1977; or as an alternative for fuel bladder equipped airplanes, Cessna Service Kit SK182-85 dated September 21, 1984, or modify existing fuel tank caps in accordance with STC SA728NW, SA3318NW or SA2967SW and for 336 and 337/T337 Series airplanes, in accordance with Cessna Service Letter ME78-47 (Rev. 1) dated February 12, 1979.

**NOTE 1**: On those airplanes having two fuel tank caps in each fuel tank, only one vented cap is required in each tank. A vented cap must be installed in the outboard filler opening of each tank.

(B) The modification required by this AD may be accomplished by those owner/operators authorized to perform preventive maintenance under FAR 43 provided only installation of a different fuel tank cap is necessary. The person accomplishing this modification must make an entry in the aircraft maintenance record indicating compliance with this AD; i.e., **"AD 79-10-14 complied with by installing replacement fuel filler cap; Cessna P/N_____ this date_____ Signature and Certificate Number."**

(C) An equivalent means of compliance with this AD may be used if approved by the Manager, Aircraft Certification Office, Federal Aviation Administration, 1801 Airport Road, Room 100, Mid- Continent Airport, Wichita, Kansas 67209.

All persons affected by this directive may obtain copies of the document(s) referred to herein upon request to Cessna Aircraft Company, Customer Service, P.O. Box 1521, Wichita, Kansas 67201; or may examine the document(s) referred to herein at the Federal Aviation Administration, Office of the Regional Counsel, Room 1558, 601 East 12th Street, Kansas City, Missouri 64106.

**NOTE 2**: Supplemental Type Certificates SA728NW and SA3318NW are held by Mr. Denies H. Ward, Venting Engineering, 5420 A Street, Tacoma, Washington 98408, Phone (206) 474-6458. Supplemental Type Certificate SA2967SW is held by Mr. Charles M. Seibel, Flight Bonus Inc., P.O. Box 665, Hurst, Texas 76053, Phone (817) 265-1650.

This amendment revises AD 79-10-14, Amendment 39-3475, effective May 29, 1979, which superseded AD 78-26-09, Amendment 39-3379.

This Amendment 39-5901 becomes effective on May 30, 1988.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

79-13-8
AD NUMBER

# Airborne Dry Air Pump

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.N.A. | |
| | | | | |
| | | | | |
| | | | | |

Amendment 39-3570. Applies to the below listed part number Dry Air Pumps installed on piston engine aircraft certificated in all categories.

| Airborne Part Number | Serial Numbers |
|---|---|
| U211 CC | 5E9318 thru 5E9347 |
| | 5E9407 thru 5E11419 |
| 211 CC-9 | 5E616 thru 5E715 |
| 211 CC TR | 5E1264 thru 5E1406 |
| 212 CW | 5E3403 thru 5E4197 |
| | 5E9129E thru 5E9131E |
| 212 CW-6 | 5E9 thru 5E25 |
| 242 CW-4 | 5E8 thru 5E11 |
| 441 CC | 5E332 thru 5E401 |
| | 5E450 thru 5E483 |
| 441 CC-7 | 5E911 thru 5E981 |
| 441 CC-9 | 5E75 thru 5E80 |
| 441 CC-11 | 5E4 |
| 441 CC-13 | 5E7 thru 5E12 |
| 441 CC-17 | 5E106 thru 5E116 |
| 442 CW | 5E926 thru 5E1023 |
| 442 CW-4 | 5E137 thru 5E149 |
| 442-CW-6 | 5E765 thru 5E785 |
| 442 CW-8 | 5E114 |
| 442 CW-12 | 5E431 thru 5E435 |

These pumps were not available for installation before May 15, 1979, therefore dry air pumps installed previous to that date are exempt from this AD. Compliance is required prior to next flight.

To prevent catastrophic failure of the pump and subsequent loss of the vacuum system, remove above listed dry air pumps from service and replace with an airworthy pump of the same part number. An airworthy pump is one which has a serial number not listed above or if listed above also has an "A" or "2" ink stamped by the manufacturer with black ink on the periphery of the body near the mounting flange. The aircraft may be flown, under day VFR conditions, in accordance with FAR 21.197 to a base where the corrective action can be performed. Additional information concerning disposition of the affected pumps is contained in Airborne Manufacturing Company, Aviation Products Group, Service Letter, Number 22A, dated June 5, 1979.

This amendment becomes effective upon publication in the Federal Register, as to all persons except those to whom it was made immediately effective by the airmail letter dated June 7, 1979, which contained this amendment.

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N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

79-18-5 Rev. 1 N
AD NUMBER

# Lithium Batteries

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-3549 as amended by Amendment 39-3708. Applies to all Lithium Sulfur Dioxide ($LiSO_2$) batteries installed in aircraft or in equipment used in aircraft.

$LiSO_2$ batteries have been used in, but not necessarily limited to, the following Emergency Locator Transmitters (ELT's):

**Communications Components Corp:** Model CIR 10, all serial numbers; Battery pack BP-60, BP-60A, BP-60B, and BP-60C; Model CIR 11-2, all serial numbers; Battery pack BP-60-11, BP-60-11A, BP-60-11B, and BP-60-11C

**Cessna Aircraft Co.:** Part Number C589511-0103; Part Number C589510-0202; Part Number C589510-0209; Part Number C589510-0109.

**Dorne & Margolin:** Model DMELT 6 serial number 1 to 24,999 with battery pack DMELT 6.11, except those ELT's which have been modified by the change to battery pack DMELT 6.13.

**Garrett:** Model No. 627-810--all serial numbers, Model No. 627-818--all serial numbers; Model No. 627-934--all serial numbers; Model No. 625-088--all serial numbers; Battery part number--616-246-1, 616-246-2

**Leigh:** Model SHARC 7 with a 3 or 4 cell battery pack. The ELT including battery weighs approximately 1.8 pounds.

**Pathfinder:** Model No. 2052

**Pointer:** Model 2000; Model 2000, Series Mod A; Model 3000, Series Mod A; Model 3000-2; $LiSO_2$ battery pack--P/N 2018, P2018, M2018, 2018 HSP, and 2018 HSM.

Other aircraft equipment that have used $LiSO_2$ batteries:

1. Bendix RNAV Computer Model RNS3500 Control Display Unit CD--3501D.
2. Emergency lighting, sliderafts, and flashlights.

Manufacturers have not used $LiSO_2$ batteries in the following ELT's. However, such batteries may have been substituted after manufacture.

**Pacific Communication Corp.:** Alert Model 50, 60, & 70.

**Pacific Avionic Co., Inc.:** Model ELT-1

**DME Corp.:** Model RLB-5 (A); Model RLB-9 (A) and (B)

**Micro Electronics**

**Emergency Beacon Corp.:** All models

**Larago/Merl, Inc.:** Larago 79007; Merl 1005

**Dorne and Margolin:** Model DMELT 6 serial no. 25,000 & above.

Compliance is required as indicated, unless already accomplished.

To prevent fire, venting violently, explosion, corrosion, or leakage of gas associated with certain $LiSO_2$ batteries, accomplish the following:

A. Before further flight, remove all $LiSO_2$ batteries which do not meet the requirements of TSO-C97 from U.S. registered civil aircraft, including any installed in equipment used in such aircraft.

**Note:** This AD requires that $LiSO_2$ batteries used in U.S.-registered civil aircraft meet the requirements of TSO-C97. $LiSO_2$ batteries removed from equipment in accordance with AD 79-05-02 or this AD may be replaced by $LiSO_2$ batteries which meet the requirements of TSO-C97 or another power source. However, in either case the equipment must meet all applicable requirements of the Federal Aviation Regulations.

B. Before further flight, remove from U.S.-registered civil aircraft any ELT powered by $LiSO_2$ batteries which do not meet the requirements of TSO-C97, and comply with the recordkeeping and placarding requirements of FAR 91.52 (f)(10)(i).

C. For any aircraft from which an ELT has been removed to comply with AD 79-05-02 or this AD, before March 28, 1980 (October 15, 1980 for ELT's specified in paragraph (F) of this AD), either--

1. Install $LiSO_2$ batteries which meet the requirements of TSO-C97 in the ELT and, provided the ELT meets the requirements of FAR 37.200, reinstall it in the aircraft; or
2. Install in the aircraft an ELT which meets the requirements of FAR 37.200 which is powered by a source other than $LiSO_2$ batteries.

D. Upon installation of an ELT in accordance with paragraph (C) of this AD, record in the aircraft records the action taken, and remove the placard which states "ELT not installed".

E. Notwithstanding FAR 91.52 (f)(10)(ii), an aircraft from which an ELT has been removed in accordance with AD 79-05-02 or this AD, may operate without an ELT required by FAR 91.52 (a) and (b) until complying with paragraph (C) of this AD, but in no event later than March 28, 1980 (October 15, 1980 for ELT's specified in paragraph (F) of this AD).

F. The later alternate compliance date specified in paragraphs (C) and (E) of this AD applies when a removed ELT was manufactured by:

1. Communications Components Corporation
2. Garrett Manufacturing Ltd; and
3. Leigh Systems, Inc.

This supersedes Amendment 39-3422, AD-79-05-02.

Amendment 39-3549 became effective August 24, 1979.

This amendment 39-3708 becomes effective February 28, 1980.

N30053
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

DH-177A
TYPE AIRCRAFT

adNote

80-6-5 N
AD NUMBER

# Slick Magneto

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear  Part No./Serial No.

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | N/A Model 4373/9370 | | | |
| | | | | |
| | | | | |

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Amendment 39-3718. Applies to the following Slick magneto models and associated serial and impulse coupling numbers:

| Magneto Model No.[1] | Serial No.[1][2] | Impulse Coupling Number[1] |
|---|---|---|
| 447 and 447R | 9040001 to 9040049 | M2374 |
| 662 and 662R | 9020462 to 9070000 | M2362 |
| 664 and 664R | 9040001 to 9040086 | M2370 |
| 680 and 680R | 9020462 thru 9070000 | M2369 |
| 4151 and 4151R | 9020017 to 9070000 | M1709 |
| 4152 and 4152R | 9020017 to 9070000 | M1709 |
| 4181 and 4181R | 9020017 to 9020000 | |
| 4201 and 4201R | 9020210 to 9070000 | M3007 |
| 4230 and 4230R | 9040001 to 9040197 | M3068 |
| 4251 and 4251R | 9030001 to 9070000 | M3163 |
| 4281 and 4281R | 9030001 to 9070000 | M3007 |
| 6210 | 8090073 thru 9070000 | M3050 |
| 6214 | 8050001 thru 9070000 | M3089 |
| | | M2371[3] |
| | | M3100[3] |
| | | M3165[3] |

[1]Any of the units listed were manufactured subsequent to January 1979.
[2]Any magneto serial number between and including the lower and upper numbers shown are affected by this AD.
[3]These coupling numbers are for parts used as spares and also must be tested.

These magnetos are installed on, but not limited to, the following engines:

**Lycoming**
AEIO-360, AEIO-320, IO-320, O-235, O-320, O-360.

**Continental**
A-65-8, A-75-8, C-85-8, C-90-8, O-200, O-200-A, O-300-A, -B, -C, -D, O-470-U, IO-360-KB, IO-470, IO-520-A, -B, -F, TSIO-470, TSIO-520-T.

Compliance is required as indicated unless already accomplished. To prevent a possible magneto failure and subsequent engine or accessory malfunction, accomplish the following:

Prior to the next ten (10) hours of aircraft time in service, or within the next (30) calendar days from the date of this AD, whichever occurs first, complete the following comparative metal hardness test procedures:

1. Remove the impulse coupling magneto(s) from the engine, per engine manufacturers instructions.

2. Remove the impulse coupling assembly from he magneto frame per Slick's maintenance and overhaul instructions.

3. Establish a reference level for metal hardness by sliding the flat surface of a fine cut mill file over the flat surface of either pawl. The file will slide freely and will only burnish the hard surface of the pawl.

4. By a similar filing action, test for hardness of each of the two rivet heads.

5. If there is resistance to sliding and material is removed from the rivet head, the rivet has not been heat treated, and the coupling assembly must be replaced. Return the defective coupling assembly to a Slick Electro, Inc. distributor.

6. If hardness of the rivet heads and pawls are equivalent, reassemble and identify AD compliance by metal stamping a letter "C" on the Slick insignia located on the left side of the magneto identification plate.

7. If the results of the comparative hardness test on the rivet(s) are questionable, the coupling assembly must be replaced.

This amendment becomes effective March 28, 1980, as to all persons except those to whom it was made immediately effective by airmail letter dated February 4, 1980, which contained this amendment.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

C-177A
TYPE AIRCRAFT

adNote

80-6-5 N
AD NUMBER

# Slick Magneto

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear  Part No./Serial No.

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | N/A | | Mag 4370/4373 | |
| | | | | |
| | | | | |

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Amendment 39-3718. Applies to the following Slick magneto models and associated serial and impulse coupling numbers:

| Magneto Model No.[1] | Serial No.[1][2] | Impulse Coupling Number[1] |
|---|---|---|
| 447 and 447R | 9040001 to 9040049 | M2374 |
| 662 and 662R | 9020462 to 9070000 | M2362 |
| 664 and 664R | 9040001 to 9040086 | M2370 |
| 680 and 680R | 9020462 thru 9070000 | M2369 |
| 4151 and 4151R | 9020017 to 9070000 | M1709 |
| 4152 and 4152R | 9020017 to 9070000 | M1709 |
| 4181 and 4181R | 9020017 to 9020000 | |
| 4201 and 4201R | 9020210 to 9070000 | M3007 |
| 4230 and 4230R | 9040001 to 9040197 | M3068 |
| 4251 and 4251R | 9030001 to 9070000 | M3163 |
| 4281 and 4281R | 9030001 to 9070000 | M3007 |
| 6210 | 8090073 thru 9070000 | M3050 |
| 6214 | 8050001 thru 9070000 | M3089 |
| | | M2371[3] |
| | | M3100[3] |
| | | M3165[3] |

[1]Any of the units listed were manufactured subsequent to January 1979.
[2]Any magneto serial number between and including the lower and upper numbers shown are affected by this AD.
[3]These coupling numbers are for parts used as spares and also must be tested.

These magnetos are installed on, but not limited to, the following engines:

**Lycoming**
AEIO-360, AEIO-320, IO-320, O-235, O-320, O-360.

**Continental**
A-65-8, A-75-8, C-85-8, C-90-8, O-200, O-200-A, O-300-A, -B, -C, -D, O-470-U, IO-360-KB, IO-470, IO-520-A, -B, -F, TSIO-470, TSIO-520-T.

Compliance is required as indicated unless already accomplished. To prevent a possible magneto failure and subsequent engine or accessory malfunction, accomplish the following:

Prior to the next ten (10) hours of aircraft time in service, or within the next (30) calendar days from the date of this AD, whichever occurs first, complete the following comparative metal hardness test procedures:

1. Remove the impulse coupling magneto(s) from the engine, per engine manufacturers instructions.

2. Remove the impulse coupling assembly from he magneto frame per Slick's maintenance and overhaul instructions.

3. Establish a reference level for metal hardness by sliding the flat surface of a fine cut mill file over the flat surface of either pawl. The file will slide freely and will only burnish the hard surface of the pawl.

4. By a similar filing action, test for hardness of each of the two rivet heads.

5. If there is resistance to sliding and material is removed from the rivet head, the rivet has not been heat treated, and the coupling assembly must be replaced. Return the defective coupling assembly to a Slick Electro, Inc. distributor.

6. If hardness of the rivet heads and pawls are equivalent, reassemble and identify AD compliance by metal stamping a letter "C" on the Slick insignia located on the left side of the magneto identification plate.

7. If the results of the comparative hardness test on the rivet(s) are questionable, the coupling assembly must be replaced.

This amendment becomes effective March 28, 1980, as to all persons except those to whom it was made immediately effective by airmail letter dated February 4, 1980, which contained this amendment.

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

80-25-7 Rev. 1 N/M
AD NUMBER

# Stewart-Warner Oil Cooler

Model No/Serial No: 840SE S/N 4636

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D. NA. | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-4028 as amended by Amendment 39-4220. Applies to the following Stewart-Warner oil cooler models:

| Stewart-Warner Model Nos. | Beginning Serial Nos. | Ending Serial Nos. |
|---|---|---|
| 8406J | 12558 | 16212 |
| 8406L | 1496 | 1763 |
| 8432K | 514 | 541 |
| 8432L | 631 | 964 |
| 10568C | 1105 | 1141 |
| 10578B | 2212 | 2316 |
| 10599A | 7369 | 9013 |
| 10610A | 1815 | 1956 |
| 10614A | 732 | 947 |
| 10622A | 333 | 394 |
| 10634D | 105 | 907 |
| 8446C | 372 | 629 |
| 8437C | 422 | 472 |
| 10641B | 101 | 162 |
| 8493B | 1269 | 1603 |

Note: The affected oil coolers were manufactured between July 1, 1979 and November 1, 1980. Oil coolers of the above model and serial numbers that have a date ink stamped next to the nameplate have been inspected by Stewart-Warner and found satisfactory for continued use.

These oil coolers may be installed on, (but not limited to), the following aircraft:

Bellanca Models: 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC and 8KCAB.

Cessna Models (including Reims Aviation): 152, A152, F152, FA152, 172I, 172K, 172L, 172M, 172N, 172P, 172RG, F172L, F172M, F172P, 177, 177A, 177B, 177RG, F177RG, R182, FR182, TR182, T182, A188B, T188C, 210N, T210N and P210N.

Piper Model: PA-38-112.

Mooney Models: M20C, M20E, M20F, M20G and M20J.

Great Lakes Models: 2T-1A-1 and 2T-1A-2.

Beech Models: 76, 77 and C-23.

Hughes Models: 269 series.

Compliance is required prior to further flight after the effective date of this AD, unless already accomplished. To prevent the loss of engine oil, accomplish the following:

1. If the oil cooler has accumulated 10 hours or less total time in service since new, prior to further flight, replace with an airworthy oil cooler not of the above serial numbers or with an airworthy oil cooler of the above serial numbers that have a date ink stamped next to the oil cooler name plate.

Note: Removed oil coolers may be returned to: Stewart-Warner Corp., Attn: Mr. Ben Gillen, 1514 Drover Street, Indianapolis, Indiana 46221.

2. If the oil cooler has accumulated more than 10 hours time in service since new, visually inspect the cooler for oil leakage prior to further flight.

Note: Removal of the engine cowling is not required if it can be positively determined from the inspection of areas adjacent to the oil cooler that the oil cooler is not leaking.

A. If oil leakage is evident, prior to further flight, replace with an airworthy oil cooler not of the above serial numbers or with an airworthy oil cooler of the above serial numbers that have a date ink stamped next to the oil cooler name plate.

B. If oil leakage is not detected:

i. Fabricate and install the following placard on the aircraft instrument panel in plain view of the crew, using letters [1/8] inch high minimum:

"Visually check oil cooler for leakage prior to each flight. If leakage is detected, refer to AD Number 80-25-07."

Note: The owner or operator may make and install this placard and conduct the preflight check. This check does not require a logbook entry. The inspection procedures identified in the note following paragraph (s) also apply to this preflight check.

ii. If the oil cooler is replaced with an airworthy oil cooler of the above serial numbers that have a date ink stamped next to the oil cooler name plate, the placard can be removed.

3. Any equivalent method of compliance with this AD must be approved by the Chief, Engineering and Manufacturing Branch, 2300 East Devon Avenue, Des Plains, Illinois 60018, telephone (312) 694-4500.

This amendment becomes effective September 24, 1981, as to all persons except those to whom it was made immediately effective by the priority letter dated December 5, 1980, which contained this amendment.

N30503
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

C-177A
TYPE AIRCRAFT

adNote

81-16-5 N
AD NUMBER

# Slick Magneto

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | | |
| | | N/A | Model 4370/4373 | |
| | | | | |
| | | | | |

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Amendment 39-4173. Applies to the following Slick Magneto models and serial numbers:

**Magneto Model Numbers***

| | | |
|---|---|---|
| 4250, 4250R | 4251, 4251R | 4216, 4216R |
| 4230, 4230R | 4252, 4252R | 6210, 6210R |
| 4201, 4201R | 4281, 4281R | 6214, 6214R |

*All 4200 series magnetos use Slick Coil part number M-3114
All 6200 series magnetos use Slick Coil part number M-3009

**Serial Numbers****

| | | |
|---|---|---|
| 8100000-8109999 | 9050000-9059999 | 9110000-9119999 |
| 8110000-8119999 | 9060000-9069999 | 9120000-9129999 |
| 8120000-8129999 | 9070000-9079999 | 0010000-0019999 |
| 9010000-9019999 | 9080000-9089999 | 0020000-0029999 |
| 9020000-9029999 | 9090000-9099999 | 0030000-0039999 |
| 9030000-9039999 | 9100000-9109999 | 0040000-0049999 |
| 9040000-9049999 | | |

**Year and month of manufacture is given by first three numbers of serial number; for example 9032576 was manufactured March 1979.

The above magneto models are installed on, but not limited to, the following engines:

**Teledyne-Continental**

| | | |
|---|---|---|
| A-65 | C-90 | O-470 |
| A-75 | O-200 | IO-470 |
| C-75 | IO-360 | IO-520 |
| C-85 | TSIO-360 | TSIO-520 |

**Lycoming**

| | | |
|---|---|---|
| O-235-C2C | O-320-D3G | O-360-A4M |
| O-235-H2C | O-320-E1J | O-360-C1E |
| O-235-K2C | O-320-E2D | O-360-C1F |
| O-235-L2C | O-320-E2G | O-360-C2E |
| O-320-A2D | O-320-E3D | O-360-F1A6 |
| O-320-D1D | AEIO-320-E1B | AEIO-360-B1G6 |
| O-320-D2G | AEIO-320-E2B | AEIO-360-H1A |
| O-320-D2J | O-360-A4K | |

To prevent magneto failure due to cracked coil, accomplish the following within the next 25 hours time in service after the effective date of this AD unless already accomplished:

A. Remove magneto and visually inspect coil for cracks in accordance with Slick Electro, Inc. Service Bulletin No. 1-81 revised June 29, 1981.

B. Replace cracked coils and coils with less than 250 hours time in service with serviceable coils manufactured prior to October 1, 1978, or subsequent to April 30, 1980. The date of manufacture is stamped on each coil.

C. Accomplishment of this AD should be indicated by stamping the lefter "C" into the metal name plate following the last digit of the magneto serial number, as well as the appropriate logbook entry.

Alternate methods of compliance with this AD must be approved by the Chief, Engineering and Manufacturing Branch, FAA Great Lakes Region.

This amendment becomes effective August 6, 1981.

N3053
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

C-177A
TYPE AIRCRAFT

adNote

81-16-5 N
AD NUMBER

# Slick Magneto

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | | |
| | | N/A | Model 4373/4370 | |
| | | | | |
| | | | | |

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Amendment 39-4173. Applies to the following Slick Magneto models and serial numbers:

**Magneto Model Numbers***

| | | |
|---|---|---|
| 4250, 4250R | 4251, 4251R | 4216, 4216R |
| 4230, 4230R | 4252, 4252R | 6210, 6210R |
| 4201, 4201R | 4281, 4281R | 6214, 6214R |

*All 4200 series magnetos use Slick Coil part number M-3114
All 6200 series magnetos use Slick Coil part number M-3009

**Serial Numbers****

| | | |
|---|---|---|
| 8100000-8109999 | 9050000-9059999 | 9110000-9119999 |
| 8110000-8119999 | 9060000-9069999 | 9120000-9129999 |
| 8120000-8129999 | 9070000-9079999 | 0010000-0019999 |
| 9010000-9019999 | 9080000-9089999 | 0020000-0029999 |
| 9020000-9029999 | 9090000-9099999 | 0030000-0039999 |
| 9030000-9039999 | 9100000-9109999 | 0040000-0049999 |
| 9040000-9049999 | | |

**Year and month of manufacture is given by first three numbers of serial number: for example 9032576 was manufactured March 1979.

The above magneto models are installed on, but not limited to, the following engines:

**Teledyne-Continental**

| | | |
|---|---|---|
| A-65 | C-90 | O-470 |
| A-75 | O-200 | IO-470 |
| C-75 | IO-360 | IO-520 |
| C-85 | TSIO-360 | TSIO-520 |

**Lycoming**

| | | |
|---|---|---|
| O-235-C2C | O-320-D3G | O-360-A4M |
| O-235-H2C | O-320-E1J | O-360-C1E |
| O-235-K2C | O-320-E2D | O-360-C1F |
| O-235-L2C | O-320-E2G | O-360-C2E |
| O-320-A2D | O-320-E3D | O-360-F1A6 |
| O-320-D1D | AEIO-320-E1B | AEIO-360-B1G6 |
| O-320-D2G | AEIO-320-E2B | AEIO-360-H1A |
| O-320-D2J | O-360-A4K | |

To prevent magneto failure due to cracked coil, accomplish the following within the next 25 hours time in service after the effective date of this AD unless already accomplished:

A. Remove magneto and visually inspect coil for cracks in accordance with Slick Electro, Inc. Service Bulletin No. 1-81 revised June 29, 1981.

B. Replace cracked coils and coils with less than 250 hours time in service with serviceable coils manufactured prior to October 1, 1978, or subsequent to April 30, 1980. The date of manufacture is stamped on each coil.

C. Accomplishment of this AD should be indicated by stamping the lefter "C" into the metal name plate following the last digit of the magneto serial number, as well as the appropriate logbook entry.

Alternate methods of compliance with this AD must be approved by the Chief, Engineering and Manufacturing Branch, FAA Great Lakes Region.

This amendment becomes effective August 6, 1981.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

81-15-3 N/M
AD NUMBER

# Brackett Engine Inlet Air Filter

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

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 8-12-93 | 1543 | | c/w By Inspection | See AD Log Book #4 |
| | | | steel Screen | |
| | | | | |
| | | | | |

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Amendment 39-4160. Applies to Brackett Aircraft Company, Inc., engine inlet air filters installed in accordance with Supplemental Type Certificate (STC) SA693CE and STC SA71GL on the following aircraft:

*Beech* A65, 70, 65-B80, 65-88, C-23, A-24R, and B-24R; Bonanza 33, 35, and 36, all models; *Cessna* Model 120, 140, 140A, 150, 150A, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150L, and A150M, 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H, 172I, 172K, 172L, and 172M, 177, 177A, 177B, 177RG, and F177RG, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 185, 185A, 185B, 185C, 185D, 185E, and A185F, 210A, B, C, D, E, and 310A, B, C, D, F, G, H, I, J, K, L; *Consolidated Aeronautics (Lake)* LA4-200; *Grumman American* Model AA-1, AA-1A, AA-1B, and AA-5; *Mooney* M18C, M20, M20A, M20B, M20C, M20D, and M20G; *Piper* Model PA-20, PA-20-115, and PA-20-135, PA-23-150, 160, PA-24-180 to S/N 1477, PA31, 31-300, 31-350; and *Varga (Shinn)* Model 2150, certified in all categories.

Compliance required as indicated, unless already accomplished.

To prevent possible failure of the aluminum air filter retainer screen or gaskets with potential ingestion of the screen, filter element and/or gasket particles into the carburetor throat, which could result in partial or complete loss of engine power, accomplish the following:

A. Within 25 hours of time in service after the effective date of this AD, inspect aircraft as identified in Brackett Service Bulletin No. 3, Revision 1, dated March 1, 1981, as applicable, equipped with the Brackett Aircraft Company, Inc. engine inlet air filters, to determine

1. whether the air filter retainer screen is aluminum or steel, and

2. whether or not certain air filter frames incorporate a gasket retainer. Brackett filter assemblies Part Number BA 100, BA 2310, BA5710, BA 7110, BA 7210, BA 7310, BA 7410 and BA 7510 are required to have a gasket retainer incorporated. The gasket retainer may be a gasket retainer strip kit installed in accordance with Brackett Service Bulletin No. 5, dated July 28, 1980, or an extruded lip which is 1/32 inch high and an integral part of the filter frame furnished by Brackett Aircraft Company, Inc.

Note: The aluminum air filter retainer screen can be identified by any one of the following: The screen has diamond shaped mesh with openings 1|3/4| inch x |3/4| inch; aluminum screen is not magnetic; the date of manufacture was ink stamped on each retainer and may still be legible. Only retainers dated August 1978 and earlier have aluminum mesh screen.

Note: The steel retainer screen can be identified by any one of the following: The screen is |1/8| inch diamond mesh; the screen is magnetic; date of manufacture is ink stamped on each retainer and still may be legible. Retainers dated September 1978 and later have steel mesh screen.

B. A determination that the air filter retainer screen is steel and that a gasket retainer is incorporated in the filter frame constitutes terminating action for this AD.

C. Upon determination that the retainer screen is aluminum, visually inspect the aluminum retainer assembly for cracks or failed areas.

1. If cracks or failed areas are found, prior to further flight, replace the aluminum retainer screen assembly with a steel screen assembly kit in accordance with Brackett Service Bulletin No. 3, Revision 1 dated March 1, 1979 or No. 6, Revision 1 dated June 29, 1981, as applicable. Each model air filter required that a different Brackett kit be installed to comply with this AD.

2. If cracks or failed areas are found, the air filter assembly may be temporarily be returned to service. Remove retainers with aluminum screen from service prior to the accumulation of 100 hours additional time in service.

D. After the inspection required in Paragraph (A) and upon determination that a gasket retainer is not incorporated in the filter retainer, prior to the accumulation of 25 additional hours of service, install gasket retainer strips in accordance with Brackett Service Bulletin No. 5, dated July 28, 1980.

Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate aircraft to a base for the accomplishment of inspections or modifications required by this AD.

Alternative inspections, modifications or other actions which provide an equivalent level of safety may be used when approved by the Chief, Engineering and Manufacturing Branch, FAA Western Region.

The manufacturer's specifications and procedures identified and described in this directive are incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive, who have not already received these documents from the manufacturer, may obtain copies upon request to: Brackett Aircraft Company, Inc., 5015 Roadrunner Drive, Falcon Field, Mesa, Arizona 85205. These documents may also be examined at: FAA Western Region Office, 15000 Aviation Boulevard, Hawthorne, California 90261 and at FAA Headquarters, 800 Independence Avenue, S.W., Washington, D.C. 20591. A historical file on this AD, which includes the incorporated material in full, is maintained by the FAA at its Headquarters in Washington, D.C. and at FAA Western Region Office.

This supersedes AD 78-25-05, Amendment 39-3365.^@|M|This amendment becomes effective July 20, 1981.

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

82-13-1 NR
AD NUMBER

# Bendix Magneto

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Part No/Serial No: _____

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMP. DUE AT: TOTAL TIME | NEXT COMP. DUE AT: DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 6-25-86 | 1207 | | D.N.A. Not installed | | | See Logbook #3 |
| | | | | | | |
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Amendment 39-4405. Applies to Bendix Engine Products Divisions S-1200 series magnetos which have green distributor blocks and do not have the letter "R", metal stamped on the identification plate as described under "Identification plate as described under "Identification," in Bendix Service Bulletin No. 613. Compliance required as indicated unless already accomplished.

To reduce the possibility of magneto and engine malfunction resulting from loose distributor block bushings, accomplish the following:

A. Comply with the inspection, replacement, and identification procedures outlined under "Detailed Instructions" shown in Bendix Service Bulletin No. 613, dated April 1981, or later approved revisions in accordance with the following schedule:

| Magneto time in service since new or overhaul | Accomplish |
|---|---|
| Less than 1,000 hours.... | Inspect within the next 25 hours in service and every 25 hours in service thereafter, unless replaced with new "Gripper Bushing" distributor block. |
| 1,000 hours or more..... but less service than 1,900 hours | Inspect within the next 100 hours in service unless replaced with new "Gripper Bushing" distributor block. |
| 1,900 hours or more..... | Replace the distributor block with the new "Gripper Bushing" distributor block within the next 100 hours in service. |

Any distributor block discovered having a loose bushing must be replaced before further flight.

B. If compliance with Paragraph A reveals the distributor block to be contaminated with brass filings or bronze colored dust, inspect the engine as follows:

1. Observe engine pistons throught spark plug holes for evidence of burning.

2. Check valve dry tappet clearance per engine manufacturer's instructions.

If piston damage or lower than specified dry tappet clearance is present, the engine must be inspected and maintained in accordance with the engine manufacturer's instructions, for continued airworthiness.

Make an engine log entry of each compliance with Paragraph (A) including the magneto serial number.

Equivalent means of compliance may be approved by the Chie of the New York Aircraft Certification Office, ANE-170, Federal Aviation Administration, New England Aircraft Certification Division, Federal Building, JFK International Airport, Jamaica, NY 11430. As permitted by FAR 21.197 aircraft may be flown to a base where maintenance required by this AD can be accomplished.

This AD is effective June 28, 1982.

MAJOR REPAIR & ALTERATION

SERVICE BULLETIN AD

AD Number (continued)

Page No.

adNote

Aircraft Registration No.

Type Aircraft

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT TOTAL TIME | NEXT COMPL. DUE AT DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |

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N 30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

82-13-1 N/R
AD NUMBER

## Bendix Magneto

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear  Part No/Serial No:

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMP. DUE AT TOTAL TIME | NEXT COMP. DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 6-23-86 | 1207 | | D.NA. $ NOT INSTALLED | | | See Logbook #3 |

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Amendment 39-4405. Applies to Bendix Engine Products Divisions S-1200 series magnetos which have green distributor blocks and do not have the letter "R", metal stamped on the identification plate as described under "Identification plate as described under "Identification," in Bendix Service Bulletin No. 613. Compliance required as indicated unless already accomplished.

To reduce the possiblility of magneto and engine malfunction resulting from loose distributor block bushings, accomplish the following:

A. Comply with the inspection, replacement, and identification procedures outlined under "Detailed Instructions" shown in Bendix Service Bulletin No. 613, dated April 1981, or later approved revisions in accordance with the following schedule:

| Magneto time in service since new or overhaul | Accomplish |
|---|---|
| Less than 1,000 hours.... | Inspect within the next 25 hours in service and every 25 hours in service thereafter, unless replaced with new "Gripper Bushing" distributor block. |
| 1,000 hours or more..... but less service than 1,900 hours | Inspect within the next 100 hours in service unless replaced with new "Gripper Bushing" distributor block. |
| 1,900 hours or more..... | Replace the distributor block with the new "Gripper Bushing" distributor block within the next 100 hours in service. |

Any distributor block discovered having a loose bushing must be replaced before further flight.

B. If compliance with Paragraph A reveals the distributor block to be contaminated with brass filings or bronze colored dust, inspect the engine as follows:

1. Observe engine pistons throught spark plug holes for evidence of burning.

2. Check valve dry tappet clearance per engine manufacturer's instructions.

If piston damage or lower than specified dry tappet clearance is present, the engine must be inspected and maintained in accordance with the engine manufacturer's instructions, for continued airworthiness.

Make an engine log entry of each compliance with Paragraph (A) including the magneto serial number.

Equivalent means of compliance may be approved by the Chie of the New York Aircraft Certification Office, ANE-170, Federal Aviation Administration, New England Aircraft Certification Division, Federal Building, JFK International Airport, Jamaica, NY 11430. As permitted by FAR 21.197 aircraft may be flown to a base where maintenance required by this AD can be accomplished.

This AD is effective June 28, 1982.

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES OR

AD Number (continued) _____ Page No. _____

adNote

Aircraft Registration No. _____
Type Aircraft _____

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

84-26-2 R
AD NUMBER

## Induction Air Filters

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

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMP. DUE AT: TOTAL TIME | NEXT COMP. DUE AT: DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | Replace By Bleeder | | | |
| | | | Form Filter | | | |

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Amendment 39-4966. Applies to all paper induction air filters used in small airplanes.

Compliance required as indicated unless already accomplished.

To prevent possible engine power loss or stoppage caused by engine ingestion of fragments of a deteriorated induction air filter, accomplish the following:

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:

A. Replace the air filter with a new filter that is FAA approved for the airplane installation.

B. Within 100 hours time-in-service, replace any filter on which the time-in-service cannot be determined utilizing the airplane maintenance records for this determination.

NOTE: This AD does not alter current maintenance procedures which require inspection of paper induction air filters at 100 hours time-in-service and annual inspections and replacement as necessary based on filter condition.

This amendment becomes effective January 29, 1985.

AD Number (continued)

Page No.

adNote

Aircraft Registration No.

Type Aircraft

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

86-5-2 NM
AD NUMBER

# United Instruments Altimeter

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.NA | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-5317. Applies to altimeter P/Ns 5934, 5934A, 5934M, 5934AM, 5934P, 5934PA, 5934PM, 5934PAM, 5934D, 5934PH, 5934AD, and 5934PAD with the following serial numbers:

6C461 thru 6C999
7C000 thru 7C999
8C000 thru 8C999
9C000 thru 9C999
1D000 thru 1D999
2D000 thru 2D869

**Note 1:** This AD is applicable to pressure sensitive altimeters that do not have encoding capabilities. The affected altimeters were manufactured after February 1, 1985.

Compliance required as indicated unless already accomplished.

To prevent possible erroneous altitude information from being displayed to the pilot, accomplish the following:

A. For all altimeters that are installed in an aircraft, prior to further flight.

1. Check each installed altimeter or check the aircraft's permanent maintenance record to determine if the altimeter falls with the Serial Number designations set forth in this AD. The owner/operator of the aircraft may make this check.

2. If, as a result of this check, it is determined that the altimeter falls with these designations, check the altimeter by applying a slight outward pull on the adjustment knob while turning the knob and determine that the altitude indication pointers and the barometric pressure dial remain sychronized.

3. The holder of a pilot certificate issued under Part 61 of the Federal Aviation Regulations (FAR) may conduct this check on any airplane owned or operated by him. The person accomplishing this must make the appropriate aircraft maintenance record entry as prescribed by FAR 91.173.

4. If the altitude pointers do not move simultaneously with the barometric dial, prior to further flight remove the altimeter and return it to United Instruments, Inc., 3625 Comotar Avenue, Wichita, KS 67226, no later than July 1, 1986. Replacement altimeters must be serviceable units.

**Note2:** It is recommended but not required by this Ad, that the above check for synchronized movement be accomplished each time the altimeter barometric pressure dial is adjusted.

B. Regardles of the results of the check specified in paragraph (A) of this AD, on or before July 1, 1986, for all affected altimeters installed in an aircraft, remove the altimeter and return it to United Instruments, Inc. at the above address. Replacement altimeters must be serviceable units.

C. For all affected altimeters not installed in an aircraft, prior to further use but no later than July 1, 1986, return the altimter to United Instruments, Inc., at the above address, for examination and modification as required.

D. For each altimeter returned to United Instruments, Inc. per the instructions of paragraphs (A), (B), and (C) above, the examination and rework by United Instruments, Inc. will be identified by a yellow dot approximately ¼ inch (6.4mm) diameter on the lower half of the rear case and the letter 'M', approximately ⅛ inch (3.2mm) in height stamped on the data plate just before the word "altimeter". Units that have been reworked and so marked may be used as serviceable replacement parts.

E. Aircraft may be flown in accordance with Federal Aviation Regulation (FAR) 21.197 to a location where this AD can be accomplished. Prior to dispatch, set the altimeter to field elevation and do not reset in flight.

F. An equivalent method of compliance with this AD, if used, must be approved by the Manager, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, KS 67209.

This amendment becomes effective on May 28, 1986, to all persons except those persons to whom it has already been made effective by priority letter AD from the FAA dated February 28, 1986 and is identified as AD 86-05-02.

N 30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

86-19-11 N
AD NUMBER

# Quick-Drain Installation

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 10-27-89 | 1449 | | P.C.W. | See Logbook #3 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-5407. Applies to Models R172 thru R172K, FR172E thru FR172K, 177 thru 177B and 177RG, F177RG, 185 thru 185E, A185E, A185F, A188, A188A, A188B, T188C, 205 and 205A, 206, U206, U206A thru U206G, TU206A thru TU206G, P206, P206A thru P206E, TP206A thru TP206E, 207 and 207A, T207 and T207A, 210B thru 210R, T210F thru T210R, P210N and P210R (all Serial Numbers (S/N)) airplanes equipped with fuel reservoir(s) certified in any category.

Compliance required within 100 hours time-in-service or at the next annual inspection, whichever comes first after the effective date of this AD, unless already accomplished.

To eliminate the possibility of engine power reduction due to contaminated fuel, accomplish the following:

A. On Cessna Models R172, R172E thru R172H, (S/Ns R172-0001 thru R1720625) FR172E thru FR172J (S/Ns FR17200001 thru FR17200530) 177 thru 177A (S/Ns 17700001 thru 17702123) Model 177RG (S/Ns 177RG0001 thru 177RG0592) F177RG (S/Ns F177RG0001 thru F177RG0122) 210G and T210G thru 210L and T210L (S/Ns 21058819 thru 21060539 and T210-0198 thru T2100454) airplanes, install quick drains in the fuel reservoirs and wing fuel tanks if not presently equipped in accordance with Cessna Single Engine Customer Care Service Information Letters SE79-45 dated September 10, 1979, and SE84-8 dated March 16, 1984, or using equivalent aircraft standard hardware.

B. On all Cessna Models R172, R172E, R172F, R172G, R172H, R172J, R172K, (S/Ns R172-0001 thru R172-0409 and R1720410 and on) FR172E, FR172F, FR172G, FR172H, FR172J, FR172K (S/Ns FR17200001 thru FR17200675) 177, 177A, 177B (S/Ns 17700001 and on), 177RG (S/Ns 177RG0001 and on) F177RG (S/Ns F177RG0001 thru F177RG0177) 185, 185A, 185B, 185C, 185D, 185E, A185E, A185F (S/Ns 632, 185-0001 thru 185-1599, 18501600 and on) A188 (S/Ns 653, 188-0001 thru 188-0572) A188A (S/Ns 18800573 thru 18800832) A188B (S/Ns 678T, 18800833 and on) T188C (S/Ns T18803307T, T18803308T, T18803325T and on) 205, 205A (S/Ns 205-0001 and on) 206, U206, U206A, U206B, U206C, U206D, U206E, U206F, U206G, TU206A, TU206B, TU206C, TU206D, TU206E, TU206F, TU206G (S/Ns 206-0001 thru 206-0275, U206-0276 and on) P206, P206A, P206B, P206C, P206D, P206E, TP206A, TP206B, TP206C, TP206D, TP206E (S/Ns P206-0001 thru P20600647) 207, 207A, T207, T207A (S/Ns 20700001 and on) 210B, 210C, 210D, 210E, 210F, 210G, 210H, 210J, 210K, 210L, 210M, 210N, 210R, T210F, T210G, T210H, T210J, T210K, T210L, T210M, T210N, T210R (S/Ns 21057841 and on) P210N and P210R (S/Ns P21000001 and on) airplanes, attach the information that is included in the appendix to this AD (entitled PILOT OPERATING PROCEDURES — PREFLIGHT FUEL SYSTEM CHECK) to the airplane documents.

C. An equivalent means of compliance with this AD may be used if approved by the Manager, Aircraft Certification Office, FAA, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209.

All persons affected by this directive may obtain copies of the document(s) referred to herein upon request to Cessna Aircraft Company, Piston Aircraft Marketing Division, Post Office Box 1521, Wichita, Kansas 67201; or FAA, Office of the Regional Counsel, Room 1558, 601 East 12th Street, Kansas City, Missouri 64106.

This amendment becomes effective October 4, 1986.

## APPENDIX

### PILOT OPERATING PROCEDURES— PREFLIGHT FUEL SYSTEM CHECK

Fuel sampling: Fuel strainer, wing tank and reservoir quick drains.

1. Place a suitable container under the fuel strainer drain outlet prior to operating the strainer drain control for at least 4 seconds. Check strainer drain closed.

2. Inspect the fluid drained from the fuel strainer and each wing tank quick drain for evidence of fuel contamination in the form of water, rust, sludge, ice or any other substance not compatible with fuel. Also check for proper fuel grade before the first flight of each day and after each refueling. If any contamination is detected, comply with 4 below.

3. Repeat steps 1 and 2 on each wing tank quick drain.

4. If the airplane has been exposed to rain, sleet or snow, or if the wing fuel tanks or fuel strainer drains produce water, the fuel reservoir(s) must be checked for the presence of water by operating the fuel reservoir quick drains. The airplane fuel system must be purged to the extent necessary to insure that there is no water, ice or other fuel contamination.

**Note 1:** The fuel reservoir(s) are located under the fuselage between the firewall and forward door post on all airplane models. Consult the Pilots Operating Handbook or Owners Manual in order to determine if one or two reservoir(s) are installed.

**Note 2:** A check for the presence of water using the reservoir quick drains prior to the first flight of each day is considered good operating practice.

AIRCRAFT REGISTRATION NO: N30553

AIRCRAFT SERIAL NO:

TYPE AIRCRAFT:

adNote

86-24-7 N
AD NUMBER

# Engine Controls Attachment

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 8-1-87 | | | | See Logbook #4 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-5475. Applies to the following model and serial number single-engine airplanes certificated in any category manufactured thru Model year 1978 equipped with ball type rod ends on the engine controls.

| MODELS | SERIAL NUMBERS |
|---|---|
| 150C thru 150M | S/N 15059701 thru 15079405 |
| A150K thru A150M | S/N A1500001 thru A1500734 |
| 152 | S/N 15279406 thru 15282031 |
| A152 | S/N A1520735 thru A1520808 |
| 172D thru 172N | S/N 17249545 thru 17271034 |
| R172K | S/N R1722000 thru R1722929 |
| P172D | S/N P17257120 thru P17257188 |
| 177 thru 177B | S/N 17700001 thru 17702752 |
| 177RG | S/N 177RG0001 thru 177RG1366 |
| 180F thru 180K | S/N 18051184 thru 18053000 |
| 182F thru 182Q | S/N 18254424 thru 18266590 |
| R182 | S/N R18200001 thru R18200583 |
| 185B thru 185E | S/N 185-0513 thru 185-1599 |
| A185E, A185F | S/N 18501600 thru 18503683 |
| 188, A188 | S/N 188-0001 thru 188-0572 |
| A188A, 188B | S/N 18800573 thru 18803296 |
| A188B | S/N 18800967T thru 18803296T |
| 205, 205A | S/N 205-0001 thru 205-0577 |
| 206, U206 | S/N 206-0001 thru 206-0275 |
| U206A thru U206G | S/N U206-0276 thru U206-1444 |
| TU206A thru TU206G | S/N U20601445 thru U20604649 |
| P206, P206A thru P206E | S/N P206-0001 thru P206-0603 |
| TP206A thru TP206E | S/N P20600604 thru P20600647 |
| 207, 207A, T207, T207A | S/N 20700001 thru 20700482 |
| 210C thru 210M and | |
| T210K thru T210M | S/N 21058066 thru 21062954 |
| T210F thru T210J | S/N T210-0001 thru T210-0454 |
| P210N | S/N P21000001 thru P21000150 |
| F150F thru F150M | S/N F150-0001 thru F150-0529 |
| | S/N F15000530 thru F15001428 |
| FA150K, FA150L | S/N FA1500001 thru FA1500120 |
| FRA150L, FRA150M | S/N FRA1500121 thru FRA1500336 |
| F152 | S/N F15201429 thru F15201528 |
| FA152 | S/N FA1520337 thru FA1520347 |
| FP172 | S/N FP172-0001 thru FP172-0003 |
| F172D thru F172N | S/N F172-0001 thru F172-0654 |
| FR172E thru FR172K | S/N F17200655 thru F17201749 |
| F177RG | S/N FR17200001 thru FR17200830 |
| F182P, F182Q | S/N F177RG0001 thru F177RG0177 |
| FR182 | S/N F18200001 thru F18200094 |
| R172E thru R172H | S/N FR18200001 thru FR18200020 |
| | S/N R172-0001 thru R172-0409 |
| | S/N R1720410 thru R1720625 |

**Compliance:** Required within the next 100 hours time-in-service after the effective date of this AD, unless already accomplished.

To prevent engine power interruption due to loss of attachment of the engine controls, accomplish the following:

(a) Modify the engine controls installation by installing a drilled steel bolt, AN310 type castellated nut and a steel cotter pin in accordance with Cessna Single-Engine Customer Care Service Information Letter SE79-6.

(b) Airplanes may be flown in accordance with FAR 21.197 to a location where this AD can be accomplished.

(c) An equivalent means of compliance with this AD may be used if approved by the Manager, Wichita Aircraft Certification Office, Federal Aviation Administration, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209.

All persons affected by this directive may obtain copies of the document(s) referred to herein upon request to Cessna Aircraft Company, Customer Services, Post Office Box 1521, Wichita, Kansas 67201; or the FAA, Rules Docket, Office of the Regional Counsel, Room 1558, 601 East 12th Street, Kansas City, Missouri 64106.

This amendment becomes effective on January 7, 1987.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

86-26-4
AD NUMBER

# Shoulder Harness Modification

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.N.A. Not installed | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-5503. Applies to the following airplanes certificated in any category:m

| MODELS | SERIAL NUMBERS |
|---|---|
| 120, 140 | All |
| 140A | All |
| 150 | 7001 thru 17,999; 59001 thru 59018 |
| 150A, 150B, 150C, 150D<br>150E, 150F, 150G, 150H<br>150J, 150K, 150L<br>F150F, F150G, F150H<br>F150K | 15059019 thru 15072003<br>F150-0001 thru F150-0529<br>F15000530 thru F15000638 |
| 170, 170A, 170B | All |
| 172, 172A | 28,000 thru 29,999<br>36,000 thru 36,999<br>46,001 thru 47,748 |
| 172B, 172C, 172D, 172E<br>172F, 172G, 172H, 172I<br>172J, 172K<br>F172D, F172E, F172F, F172G<br>F172H, F172K<br>FR172E, FR172F, FR172G<br>P172 | 17247747 thru 17259333<br>F172-0001 thru F172-0654<br>F17200655 thru F17200754<br>FR17200001 thru FR17200225<br>All |
| 175, 175A, 175B, 175C | All |
| 177, 177A, 177B | 17700001 thru 17701530 |
| 180, 180A | 30000 thru 32999 |
| 180A, 180B, 180C<br>180D, 180E, 180F,<br>180G, 180H | 50,000 thru 50911 |
| 182, 182A, 182B, 182C | 18050912 thru 18052173<br>33,000 thru 34999,<br>51,001 thru 53,007 |
| 182D, 182E, 182F<br>182G, 182H, 182J<br>182K, 182L, 182M, 182N | 18253008 thru 18260445 |
| 185, 185A, 185B, 185C<br>185D, 185E, A185E<br>A185E | 185-0001 thru 185-1599<br>18501600 thru 18501832<br>All |
| 190, 195, 195A, 195B | All |
| 205, 205A | All |
| 206<br>U206, U206A, U206B,<br>U206C, U206D, TU206A,<br>TU206B, TU206C, TU206D<br>U206E, TU206E<br>P206, P206A, P206B, P206C,<br>P206D, TP206A, TP206B,<br>TP206C, TP206D<br>P206E, TP206E | 206-0276 thru 206-1444<br>20601445 thru 20601587<br><br>P206-0001 thru P206-0603<br>P20600604 thru P20600647 |
| 207, T207 | 2070001 thru 20700190 |
| 210 | 57001 thru 57573 |
| 210A, 210B, 210C, 210D,<br>210E, 210F, 210G, 210H,<br>210J, 210K, T210K<br>T210G, T210H, T210J | 21057576 thru 21059351 |
| 336 | All |
| 337, 337A, 337B, 337C<br>337D, 337E, T337B, T337C<br>T337, T337E | All<br><br>33700001 thru 33701316 |

Compliance required within the next 25 hours time in service (TIS) after the effective date of this AD, unless already accomplished.

To prevent slippage of the pilot/co-pilot shoulder harnesses, accomplish the following on airplanes which have had the shoulder harnesses installed by any of the following Cessna Accessory Kits (AK):

| | | |
|---|---|---|
| AK140-10 | AK182-75 | AK210-172 |
| AK150-7 | AK195-10 | AK210-173 |
| AK150-121 | AK210-77 | AK210-174 |
| AK170-10 | AK210-93 | AK336-32 |
| AK177-10 | AK210-171 | AK336-36 |
| AK336-103 | | |

A. Inspect the upper shoulder harness adjuster in accordance with Cessna Single Engine Service Bulletin, SEB86-8 or Cessna Multi-Engine Service Bulletin, MEB86-22, as appropriate, for the presence of a retainer spring. If installed, prior to further flight, remove the spring and stamp out the -401 identification number in accordance with the service bulletin instructions.

NOTE: There are two adjusters in each shoulder harness assembly. This AD applies only to the upper adjuster.

B. Airplanes may be flown in accordance with FAR 21.197 to a location where this AD may be accomplished.

C. The holder of a pilot certificate issued under Part 61 of the Federal Aviation Regulations (FAR) on any airplane owned or operated by him may conduct the inspection and modifications required by this AD on any airplane not used in air carrier service. The person accomplishing this AD must make the appropriate maintenance record entry as prescribed by FAR 91.173.

D. Any equivalent method of compliance with this AD, if used, must be approved by the Manager, Wichita Aircraft Certification Office, FAA, 1801 Airport Rd., Room 100, Wichita, Kansas 67209; Telephone (316) 946-4400.

All persons affected by this directive may obtain copies of the documents referred to herein upon request to Cessna Aircraft Company, Customer Service, POB 1521, Wichita, Kansas 67201; or FAA, Office of the Regional Counsel, Room 1558, 601 E. 12th St., Kansas City, Missouri 64106.

This amendment becomes effective January 6, 1987.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

87-10-6 R1
AD NUMBER

# Lycoming Engine

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear  Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A By S/N | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-5604 as revised by Amendment 39-6293.

Applicability: Textron Lycoming (formerly AVCO Lycoming Textron) reciprocating engine series having serial numbers as listed herein.

O-320-A and -E Series engines with serial numbers L-50154-27A thru L-50175-27A, L-50177-27A thru L-50188-27A.

O-320-B and D Series engines with serial numbers L-13971-39A, L-13972-39A, L-13975-39A, L-13976-39A, L-13980-39A, L-13983-39A thru L-14235-39A, L-14242-39A, L-14243-39A, L-14249-39A thru L-14415-39A, L-14421-39A, L-14428-39A.

IO-320 Series engines with serial numbers L-5890-55A thru L-5897-55A.

O-360 Series engines with serial numbers L-31144-36A thru L-31148-36A, L-31150-36A thru L-31357-36A, L-31363-36A thru L-31507-36A.

IO-360-B Series engines with serial numbers L-24152-51A, L-24163-51A, L-24170-51A, L-24246-51A, L-24337-51A thru L-24344-51A, L-24352-51A.

AEIO-360-B Series engines with serial numbers L-24168-51A, L-24193-51A, L-24337-51A thru L-24344-51A, L-24357-51A.

The O-540 serial numbers that follow may or may not have the letter 'A' as part of the suffix of the serial number on the engine dataplate.

O-540 Series engines with serial numbers L-23948-40A, L-23949-40A thru L-24059-40, L-24061-40A.

IO-540-C4B5 engines with serial numbers L-22974-48A, L-22975-48A, L-23010-48A thru L-23016-48A, L-23038-48A, L-23039-48A, L-23050-48A thru L-23052-48A, L-23118-48A, L-23138-48A, L-23193-48A, L-23195-48A, L-23196-48A, L-23328-48A, L-23331-48A, L-23348-48A, L-23349-48A, L-23352-48A, L-23353-48A, L-23372-48A, L-23375-48A, L-23376-48A.

IO-540-C4D5D engines with serial numbers L-22920-48A, L-22923-48A, L-22924-48A, L-22956-58A thru L-22963-48A, L-23022-48A thru L-23027-48A, L-23079-48A thru L-23082-48A, L-23088-48A, L23095-48A thru L-23099-48A, L-23148-48A thru L-23153-48A, L-23185-48A thru L-23180-48A, L-23237-48A thru L-23239-48A, L23284-48A thru L-23273-48A, L-23307-48A thru L-23316-48A, L-23358-48A, L-23359-48A.

IO-540-D4A5 engine with serial number L-23089-48.

IO-540-V4A5D engines with serial numbers L-22943-48A thru L-22945-48A, L-22953-48A thru L-22957-48A, L-23061-48A thru L-23063-48A.

IO-540-W1A5D engines with serial numbers L-22964-48A, L-22965-48A, L-22976-48A thru L-22979-48A, L-23020-48A, L-23021-48A, L-23033-48A, L-23034-48A, L-23036-48A, L-23040-48A thru L-23042-48A, L-23056-48A, L-23057-48A, L-23067-48A, L-23074-48A, L-23090-48A thru L-23094-48A, L-23139-48A, L-23154-48A, L-23181-48A, L-23192-48A, L-23197-48A thru L-23199-48A, L-23223-48A, L-23326-48A, L-23327-48A, L-23346-48A, L-23347-48A.

IO-540-W3A5D engines with serial numbers L-22918-48A, L-22966-48A, L-22967-48A, L-23350-48A, L-23351-48A.

AEIO-540-D Series engines with serial numbers L-22927-48A, L-22994-48A, L-22995-48A, L-23035-48A, L-23037-48A, L-23043-48A, L-23044-48A, L-23065-48A, L-23066-48A, L-23075-48A thru L-23077-48A, L-23100-48A, L-23101-48A, L-23108-48A thru L-23110-48A, L-23114-48A, L-23127-48A, L-23135-48A, L-23143-48A thru L-23147-48A, L-23159-48A thru L-23164-48A, L-23180-48A thru L-23191-48A, L-23200-48A, L-23201-48A, L-23232-48A, L-23233-48A, L-23245-48A, L-23259-48A, L-23260-48A, L-23274-48A thru L-23294-48A, L-23329-48A, L-23330-48A, L-23343-48A, L-23344-48A, L-23368-48A, L-23369-48A, L-23373-48.

TIO-540-AA1AD engines with serial numbers L-8753-61A, L-8782-61A, L-8783-61A, L-8837-61A, L-8845-61A.

TIO-540-AB1AD engines with serial numbers L-8751-61A, L-8752-61A, L-8758-61A, L-8763-61A thru L-8765-61A, L-8777-61A thru L-8779-61A, L-8784-61A, L-8785-61A, L-8788-61A thru L-8790-61A, L-8798-61A thru L-8800-61A, L-8803-61A thru L-8806-61A, L-8813-61A thru L-8816-61A, L-8821-61A thru L-8824-61A, L-8833-61A thru L-8836-61A.

Also applies to any of the following parallel valve-type engines, regardless of serial number, that were remanufactured or overhauled between July 1, 1985, and October 8, 1988, inclusive. Any applicable engine that has had a P/N LW-18790 rocker arm assembly installed (if the assembly was shipped from Lycoming Textron, Williamsport Division) during this same time period:

Engine Models: O-320 series except O-320-H; IO-320 Series; AIO-320 Series, AEIO-320 Series; LIO-320 Series, O-340 Series, O-360 Series except O-360-E, IO-360-B, -E, -F Series, AEIO-360B, -H Series; HO-360 Series, HIO-360-B Series; VO-360 Series; IVO-360 Series, O-540 Series, IO-540-C, -D, -J, -N, -R, -T, -V, -W Series; AEIO-540-D Series; TIO-540-C, -E, -G, -H, -K, -AA, -AB Series, LTIO-540-K.

Compliance: Required (1) within the next 25 hours in service after the effective date of this AD for all applicable engines, and (2) prior to installation, for all P/N LW-18790 rocker arm assemblies not installed in engines, unless already accomplished.

NOTE: Rocker arm assemblies complying with this AD are identified by a letter "F" per AVCO Lycoming Textron Service Bulletin (SB) No. 477A, page 4, paragraph 6. All new and remanufactured engines shipped from the AVCO Lycoming Textron Williamsport Division Factory, and all overhauled engines shipped from the AVCO Lycoming Textron Service Center at Montoursville, Pennsylvania, after October 8, 1988, are in compliance with this AD.

To prevent possible rocker arm failure and loss of engine power, inspect and rework or replace rocker arm assembly P/N LW-18790, as necessary, in accordance with Sections 1 through 9 of AVCO Lycoming Textron SB No. 477A, dated February 16, 1987.

Measure and deburr the rocker arm as follows:

(1) Measure the wall thickness at the specified thinnest point (outer edge) within the indicated circumferential limits using a ball-type micrometer, measuring microscope, or other instrument capable of providing equivalent accuracy.

(2) Deburr the oil drip hole to obtain .030 inch radius at rocker arm wall surface.

(3) If it is not possible to determine the wall thickness or the oil drip hole radius within sufficient accuracy to assure compliance with SB 477A requirements, replace rocker arm with new or serviceable rocker arm.

NOTE: Textron Lycoming SB No. 477A, Supplement No. 1, dated October 12, 1988, changes the affected models in accordance with changes in this amendment, but does not change the inspection or rework procedures.

Aircraft may be ferried in accordance with the provisions of FAR 21.197 and 21.199 to a base where the AD can be accomplished.

Upon request, an equivalent means of compliance with the requirements o this AD may be approved by the Manager, New York Aircraft Certification Office, ANE-170, Federal Aviation Administration, 181 South Franklin Avenue, Room 202, Valley Stream, NY 11581.

Upon submission of substantiating data by an owner or operator through an FAA maintenance inspector, the Manager of the New York Aircraft Certification Office, Valley Stream, NY, may adjust the compliance time specified in this AD.

AVCO Lycoming Textron SB No. 477A, dated February 16, 1987, identified and described in this document, is incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive who have not already received this document from the manufacturer may obtain copies upon request to Customer Support, AVCO Lycoming Textron, 652 Oliver St., Williamsport, PA 17701.

This document also may be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA 01803, Room 311, Rules Docket Number 88-ANE-48, between the hours of 8:00 a.m. and 4:30 p.m., Monday thru Friday, except federal holidays.

This AD, 87-10-06 R1, revises Amendment 39-5604, AD 87-10-06, which became effective on May 13, 1987.

This amendment (39-6293, AD 87-10-06 R1) becomes effective on September 1, 1989.

MAJOR REPAIR & ALTERATION

AIRWORTHINESS DIRECTIVES

FACTORY SERVICE NOTES ON

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

87-17-6 N
AD NUMBER

# Am-Safe Seat Belt Assemblies

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.N.A. NOT INSTALLED | |
| | | | | |
| | | | | |
| | | | | |

Amendment 39-5710. Applies to Am-Safe, Inc., occupant restraint system assemblies, P/N's 501825-403, 501907-401, 501907-403, 501907-405, 502061-401, 502147-401, and 502147-403, which may be installed in large or small aircraft. (Seat belt portion approved under Technical Standard Order C22f.). Compliance required within 90 days after the effective date of this AD, unless previously accomplished.

To eliminate restraint system connectors with the incorrect dimensions, which could allow inadvertent opening of occupant restraint system assemblies, accomplish the following:

A. Inspect the affected restraint system assemblies in accordance with Am-Safe, Inc., Service Bulletin No. AS001, dated November 6, 1986, or later FAA approved revisions, to determine the Lot Number of the connector. If the connector is not of Lot 04, no further action is required. If the connector is found to be of Lot 04, the connector must be removed and replaced with a connector of a different lot number before further flight.

B. Alternate means of compliance which provide an acceptable level of safety may be used when approved by the Manager, Western Aircraft Certification Office, FAA, Northwest Mountain Region.

C. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service information from the manufacturer may obtain copies upon request to Am-Safe, Inc., 240 No. 48th Ave., Phoenix, AZ 85043. These documents may be examined at the FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, WA, or at 15000 Aviation Blvd., Hawthorne, CA.

This amendment becomes effective September 22, 1987.

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

89-4-2 N
AD NUMBER

# Facet (Marvel-Schebler) Carburetor

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear  Engine Model/Serial No: MA4-5 P/N 105034 : S/N BU0217

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.N.A. NOT INSTALLED. | |
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Amendment 39-6109.

Applicability: Facet Models MA-4-5, MA-5, and MA-6AA carburetors manufactured after April 1984, having Part Numbers (P/N) and Serial Numbers (S/N) as listed herein:

| CARBURETORS | SERIAL NUMBERS |
|---|---|
| **Model: MA-4-5** | |
| P/N 10-3878 | G-54-11129 thru G-54-11136, G-55-11500 thru G-55-12064 |
| P/N 10-4164-1 | K-49-9001 thru K-49-9023 |
| P/N 10-4404 | R-48-11501 thru R-48-11721 |
| P/N 10-4404-1 | R-45-11005 and R-45-11007, AO-45-11000 thru AO-45-11101 |
| P/N 10-5054 | BZ-16-3000 thru BZ-22-3110 |
| P/N 10-5193 | CP-5-3500 thru CP-5-3967 |
| P/N 10-4893 | BD-5-10000 |
| P/N 10-4893-1 | CL-4-3700 thru CL-7-3776 |
| P/N 10-5284 | DV-0-500 thru DV-0-505, DV-1-1000 thru DV-1-1392 |
| **Model: MA-5** | |
| P/N 10-4665 | BC-33-5001 thru BC-33-5005 |
| **Model: MA-6AA** | |
| P/N 10-4401-1 | AC-38-3278 thru AC-38-3298, AC-40-4001 thru AC-40-4021 |
| P/N 10-4438-1 | AH-29-6000 thru AH-29-6009 |

The carburetors listed above are used on, but not limited to: Textron Lycoming Models O-360, O-540, VO-540, and TVO-435 series engines.

Teledyne Continental Model O-470 series engines.

Pezetel (Franklin) Model 6A-350 series engines.

Compliance: Required within the next 200 hours time in service, or when the carburetor is removed from the engine, whichever occurs first, unless already accomplished.

To prevent possible jamming of the carburetor throttle, accomplish the following:

(a) Check all Facet (Marvel Schebler) Model MA-4-5, MA-5, and MA-6AA carburetors manufactured after April 1984 to determine the carburetor part number and serial number. These numbers can be found on the carburetor nameplate which is located on the throttle body.

NOTE: When checking the carburetor serial number for comparison to the above listing, disregard the center number, as described in the service bulletin, since this is used for Facet internal blueprint control only.

(b) If the part number and serial number are listed above, remove the carburetor, disassemble it, and replace the air metering stop pin, P/N 62-226, with the air metering stop pin, P/N 62-F1, in accordance with the instructions given in Facet Service Bulletin A1-88, dated August 1988.

(c) Stamp or etch a 'P' on the lower portion of the carburetor nameplate and make an engine logbook entry to indicate compliance.

NOTE: If the serial number is not one of those listed above, corrective action is not required.

(d) Aircraft may be ferried in accordance with the provisions of FAR 21.197 and 21.199 to a base where the AD can be accomplished.

(e) Upon request, an equivalent means of compliance with the requirements of this AD may be approved by the Manager, New York Aircraft Certification Office, ANE-170, Engine and Propeller Directorate, Aircraft Certification Service, Federal Aviation Administration, 181 South Franklin Avenue, Room 202, Valley Stream, New York 11581.

(f) Upon submission of substantiating data by an owner or operator through an FAA Airworthiness Inspector, the Manager, New York Aircraft Certification Office, ANE-170, may adjust the compliance time specified in this AD.

Facet Service Bulletin A1-88, dated August 1988, identified and described in this document, is incorporated herein and made a part hereof pursuant to 5 U.S.C. 551(a)(1). All persons affected by this directive, who have not already received this document from the manufacturer may obtain copies upon request to Facet Aerospace Products, Co., 1048 Industrial Park Road, Bristol, Virginia 24201. This document may also be examined at the Office of the Assistant Chief Counsel, Federal Aviation Administration, New England Region, 12 New England Executive Park, Burlington, Massachusetts 01803, Room 311, Docket No. 88-ANE-39, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, except federal holidays.

This amendment (39-6109, AD 89-4-2) becomes effective on March 8, 1989.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

91-14-22 R
AD NUMBER

# Lycoming Engine

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear  Engine Model/Serial No:

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMP. DUE AT TOTAL TIME | NEXT COMP. DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 2/10/11 | 2015.4 | 2015.4 | C/W DURING ENGINE OVERHAUL | — C/W — | | [signature] 2746666 |
| | | | | | | |
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Amendment 39-6916.

Applicability: Textron Lycoming (formerly Avco Lycoming) direct drive piston aircraft engines (except: 0-320-H, O-360-E, LO-360-E, TO-360-E, LTO-360-E and TIO-541 series engines).

Compliance: Required at each engine overhaul, after a propeller strike, sudden stoppage, or whenever gear train repair is required. A propeller strike for the purpose of this AD, is defined as a sudden engine stoppage, or loss of a propeller blade or tip.

NOTE: Avco Lycoming Service Letter No. L163B dated December 23, 1977, "Recommendations Regarding Accidental Engine Stoppage, Loss of Propeller Blade or Tip," contains additional information on the subject.

To prevent loosening or failure of the crankshaft gear retaining bolt, which may cause sudden engine failure, accomplish the following:

(a) Inspect the crankshaft counterbored recess, the alignment dowel, the retaining bolt and lock plate, the bolt hole threads, and the crankshaft gear for wear, galling, corrosion, and fretting in accordance with Sections 1 through 7, including all tables and figures in Textron Lycoming Service Bulletin (SB) No. 475, Revision A, dated July 16, 1990.

(b) Prior to further flight, repair, rework, or replace damaged or worn parts as identified in paragraph (a) of this AD.

(1) Repair and rework crankshaft pilot diameter in accordance with Textron Lycoming SB 475, Revision A, dated July 16, 1990, and replace dowel pin with appropriate size dowel as shown in Table 1 of the service bulletin.

(2) Insure that the tapped threads in the gear retaining bolt-hole of the crankshaft are clean and undamaged. If threads are damaged, replace crankshaft with a serviceable unit, or have threads repaired by an FAA approved facility specifically approved to do that repair.

(3) Inspect the counterbored gear mounting face of the crankshaft to ensure there is no damage due to fretting or galling, as damage of this nature is unrepairable.

(4) Repair crankshaft counterbore pilot diameter, if necessary, in accordance with Section 3 of Textron Lycoming SB No. 475, Revision A, dated July 16, 1990.

(5) Verify that the crankshaft gear incorporates three .75 inch radius scallops on the flange as shown in Figure 5 of Textron Lycoming SB No. 475, Revision A, dated July 16, 1990. Assemble gear onto crankshaft using a new retaining bolt and lockplate and insure fit of mating parts as described in Section 6 and Figure 6 of the Textron Lycoming Service Bulletin No. 475, Revision A, dated July 16, 1990.

(c) Aircraft may be ferried in accordance with the provisions of FAR 21.197 and 21.199 to a base where the AD can be accomplished.

(d) Upon submission of substantiating data by an owner or operator through an FAA Inspector (maintenance, avionics, or operations, as appropriate), an alternate method of compliance with the requirements of this AD or adjustments to the compliance schedule specified in this AD may be approved by the Manager, New York Aircraft Certification Service, FAA, 181 South Franklin Avenue, Room 202, Valley Stream, New York 11581.

The inspection procedures shall be done in accordance with the following Textron Lycoming document:
DOCUMENT NO.: SB 475; PAGE NO.: 1-4; ISSUE/REV.: A; DATE: 07/16/90

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, Oliver Street, Williamsport, Pennsylvania 17701. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, Massachusetts 01803, or at the Office of the Federal Register, 1100 L Street, NW, Room 8401, Washington, DC.

This amendment (39-6916, AD 91-14-22) becomes effective on August 19, 1991.

AD's REQUIRING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES OR

AD Number (continued) _____ Page No. _____

adNote

Aircraft Registration No. _____

Type Aircraft _____

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |

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N34557 AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

92-12-5 N AD NUMBER

## Lycoming Engine

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No: _____

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-8265.

Applicability: Textron Lycoming O-320 series, IO-320 series, LIO-320 series, AIO-320 series, AEIO-320 series, O-340 series, O-360 series, LO-360 series, HO-360 series, VO-360 series, IVO-360 series, IO-360 series, AIO-360 series, HIO-360 series, LHIO-360 series, LIO-360 series, AEIO-360 series, TO-360 series, LTO-360 series, TIO-360 series, O-480 series, GSO-480 series, IGSO-480 series, IGO-480 series, GO-480 series, O-540 series (excluding models O-540-J and O-540-L), VO-540 series, IO-540 series (excluding model IO-540-W), HIO-540 series, AEIO-540 series, IGSO-540 series, IGO-540 series, TVO-540 series, TIVO-540 series, IVO-540 series, TIO-540 series, LTIO-540 series, TIO-541 series, TIGO-541 series, and IO-720 series opposed piston engines; and in addition those engine models and serial numbers listed in Textron Lycoming Service Bulletin (SB) No. 501, Revision B, dated November 15, 1991; installed on but not limited to Cessna 172 and Piper PA-28 aircraft.

Compliance: Required as indicated, unless accomplished previously.

To prevent piston pin failure, or piston release, and engine failure, accomplish the following:

(a) For engines with serial numbers listed in Textron Lycoming SB No. 501, Revision B, dated November 15, 1991, with more than 75 hours time in service (TIS) since new, since remanufacture, or since factory overhaul on the effective date of this AD, remove all piston pins, Part Number (P/N) LW-14077, within 25 hours TIS after the effective date of this AD, and replace with serviceable parts.

(b) For engines with serial numbers listed in Textron Lycoming SB No. 501, Revision B, dated November 15, 1991, with 75 hours or less TIS since new, since remanufacture, or since factory overhaul on the effective date of this AD, remove all piston pins, P/N LW-14077, within 100 hours TIS since new, since remanufacture, or since factory overhaul and replace with serviceable parts.

(c) For engines not listed in Textron Lycoming SB No. 501, Revision B, dated November 15, 1991, accomplish the following:

(1) Within 15 days after the effective date of this AD, conduct a search and review of maintenance and purchase records to determine if piston pin, P/N LW-14077, had been purchased from Textron Lycoming or a Textron Lycoming distributor from June 18, 1991, through August 5, 1991.

(2) For installed piston pins, P/N LW-14077, purchased from Textron Lycoming or a Textron Lycoming distributor from June 18, 1991, through August 5, 1991, accomplish the following:

(i) For engines with more than 75 hours TIS since piston pin installation on the effective date of this AD, remove all piston pins, P/N LW-14077, purchased from Textron Lycoming or a Textron Lycoming distributor from June 18, 1991, through August 5, 1991, within 25 hours TIS after the effective date of this AD, and replace with serviceable parts.

(ii) For engines with 75 hours or less TIS since piston pin installation on the effective date of this AD, remove all piston pins, P/N LW-14077, purchased from Textron Lycoming or a Textron Lycoming distributor from June 18, 1991, through August 5, 1991, within 100 hours TIS since piston pin installation and replace with serviceable parts.

(d) Piston pins, P/N LW-14077, purchased from Textron Lycoming or a Textron Lycoming distributor from June 18, 1991, through August 5, 1991, that are not installed in engines are considered unairworthy and shall not be placed in service.

(e) 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, Engine and Propeller Directorate. The request should be forwarded through an FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, New York Aircraft Certification Office.

NOTE: 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.

(f) 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.

(g) The identification of certain engines to which this AD is applicable shall be done in accordance with the following Textron Lycoming service document:

| DOCUMENT NO. | PAGES | REVISION | DATE |
|---|---|---|---|
| SB No. 501 | 1-3 | Rev. B | Nov. 15, 1991 |

Total pages: 3

This incorporation 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 Street, Williamsport, PA 17701. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, Room 311, 12 New England Executive Park, Burlington, Massachusetts; or at the Office of the Federal Register, 1100 L Street, NW., Room 8401, Washington, DC.

(h) This amendment becomes effective on July 10, 1992.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

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: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | N/A S.N. | | | |
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Amendment 39-851 1.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 |
| FAI52 | FAI520337 through FAI520425 |
| 172 | 17261486 through 17276673 |
| R172 | R1722000 through R1723454 |
| 172RG | 172RG0001 through 172RG1191 |
| F172 | F17201045 through F17202254 |
| FRI72 | FRI7200441 through FRI7200675 |
| 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 |
| F182 | F18200001 through F18200169 |
| FRI82 | FRI8200001 through FRI8200070 |
| 185 | 18502154 through 18504448 |
| U206 | U20601980 through U20607020 |
| 207 | 20700222 through 20700788 |
| 210 | 21059893 through 21065009 |
| P210 | P21000001 through P21000874 |

**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 suppressor 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 SEB91-5RI, 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 SEB91-5RI, 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's RECURRING, ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES, OB

AD Number _____
(continued)

Page No. _____

adNote

Aircraft Registration No. _____

Type Aircraft _____

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH. OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |
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AIRCRAFT REGISTRATION NO. N30553

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

93-19-4 N
AD NUMBER

# Precision Airmotive Carburetor

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A | |
| | | | | |
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Amendment 39-8700. Docket 93-AN-E-61. Supersedes Priority Letter AD 92-15-16 issued on July 9, 1992.

Applicability: Precision Airmotive (formerly Facet Aerospace Products (formerly Marvel-Schebler)) Model MA3, MA3A, MA3PA, MA3SPA, and MA4SPA carburetors installed on but not limited to Textron Lycoming Model O-235, O-290, and O-320 series engines, and Teledyne Continental A-65, A-75, C-75, C-85, C-90, C-115, C-125, C-145, O-200, and O-300 series engines installed on but not limited to normally aspirated piston engine powered aircraft manufactured by Cessna, Piper, Beechcraft, and Mooney.

Compliance: Required as indicated, unless accomplished previously.

To prevent a disruption of fuel flow to the engine, resulting in engine power loss, engine failure, and damage to the aircraft, accomplish the following:

(a) Prior to further flight, for carburetors repaired or rebuilt from November 1, 1991, through July 15, 1992, accomplish the following:

(1) Visually inspect the float for Consolidated Fuel Systems (CFS) Part Number (P/N) CF 30-766 and remove the float if the date "10 91" is stamped on the top of the float lever arm, and replace with a serviceable float.

NOTE: CFS Mandatory Service Bulletin CF-1-92, Revision 1, dated July 6, 1992, gives a listing of those known carburetors repaired or rebuilt during the suspect time period.

NOTE: Guidance on replacing floats is contained in either Precision Airmotive (Facet) Aircraft Carburetor Service Manual, dated September 1984, or CFS Carburetor Float Kit Installation Instructions, CF 666-915.

(2) Floats identified with Precision Airmotive P/N 30-766 with any date stamped on the float lever arm, or CFS P/N CF 30-766 with dates 8 89, 12 89, 1 90, 2 90, 8 90, 10 90, 1 91, 2 91, 4 91, 4 92, or 7 92 stamped on the float lever arm do not need to be removed.

(b) 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, Engine Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

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

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

(d) This amendment becomes effective on October 18, 1993.

N30557
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

94-1-3 Rev. 2 N
AD NUMBER

# TCM (Bendix) Magneto

If multi-engine: ☐ Left ☒ Right ☐ Front ☐ Rear Part No/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 9/25/94 | | | N/A S.N. | See Logbook Ent |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-9271. Docket 93-ANE-44. Revises AD 94-01-03 R1, Amendment 39-9006.

Applicability: Teledyne Continental Motors (TCM), formerly Bendix magnetos:

S-20, S-200, and S-600 series magnetos with red or black Bendix (not TCM) data plates having serial numbers (S/N's) lower than 2000000 without any letter prefix; or S/N's lower than A16056 having the letter "A" prefix.

S-20, S-200, and S-600 series magnetos with blue Bendix (not TCM) data plates marked "REMANUFACTURED" having S/N's lower than 901001.

S-1200 series magnetos with red Bendix (not TCM) data plates having S/N's lower than 2000000 without any letter prefix; or S/N's lower than A132844 having the letter "A" prefix.

S-1200 series magnetos with blue Bendix (not TCM) data plates marked "REMANUFACTURED" having S/N's lower than 901001.

These magnetos are installed on but not limited to reciprocating engine powered aircraft manufactured by Beech, Cessna, Maule, Mooney, and Piper.

NOTE 1: The FAA has received reports of some confusion as to what is meant by S-20, S-200, S-600, and S-1200 series magnetos as referenced in TCM Mandatory Service Bulletin (MSB) No. MSB644, dated April 4, 1994, and this AD. A typical example is S6RN-25, where the S designates single type ignition unit, the 6 designates the number of engine cylinders, the R designates right hand rotation, the N is the manufacturer designator (this did not change when TCM purchased the Bendix magneto product line), and the number after the dash indicates the series (a -25 is a S-20 series magneto, while a -1225 is a S-1200 series magneto).

NOTE 2: This AD applies to each magneto 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 magnetos that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (k) to request approval from the FAA. This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any magneto from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To prevent magneto failure and subsequent engine failure, accomplish the following:

(a) No action is required for those magnetos in compliance with AD 94-01-03 or 94-01-03 R1.

(b) An optional method of compliance with this AD is to replace the Bendix magnetos with Slick magnetos where FAA approval has been granted for that application.

(c) If a Bendix magneto data plate has been replaced with an overhaul facility's data plate, this AD is still applicable to that magneto since the magneto is a Bendix magneto.

(d) Yellow Bendix or TCM service spare data plates may have been installed during a field overhaul; use model and S/N to determine applicability.

(e) Magnetos built by Bendix in Jacksonville, Florida, and Magnetos built by TCM in Atlanta, Georgia, as indicated on the data plate, are not affected by this AD.

(f) The paint on some early data plates may have been obliterated and the data plate will appear silver in color; use model and serial number to determine applicability.

(g) For Bendix S-20 and S-200 series magnetos, replace Bendix ignition coils and rotating magnets identified in the Detailed Instructions of TCM MSB No. MSB644, dated April 4, 1994, with serviceable TCM or Parts Manufacturer Approval (PMA) ignition coils and rotating magnets at the next 100 hour inspection, the next annual inspection, the next progressive inspection, or the next 100 hours time in service (TIS) after the effective date of this AD, whichever occurs first.

(h) For the Bendix S-600 series magnetos, replace Bendix rotating magnets identified in the Detailed Instructions of TCM MSB No. MSB644, dated April 4, 1994, with serviceable TCM or PMA rotating magnets at the next 100 hour inspection, the next annual inspection, the next progressive inspection, or the next 100 hours TIS after the effective date of this AD, whichever occurs first.

NOTE: The ignition coils on the S-600 series magnetos already incorporate the improved design.

(i) For the Bendix S-1200 series magneto, replace Bendix ignition coils identified in the Detailed Instructions of TCM MSB No. MSB644, dated April 4, 1994, with servicable TCM or PMA ignition coils at the next 100 hour inspection, the next annual inspection, the next progressive inspection, or the next 100 hours TIS after the effective date of this AD, whichever occurs first.

NOTE: The rotating magnets on the S-1200 series magnetos already incorporate the improved design.

(j) After compliance with paragraphs (d), (e), or (f) of this AD, as applicable, and prior to further flight, mark the magneto in accordance with the Identification Instructions of TCM SB No. MSB644, dated April 4, 1994.

(k) An alternative method of compliance or adjustment of the initial compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

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

(l) 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.

(m) The actions required by this AD shall be done in accordance with the following service document:

| Document No. | Pages | Date |
|---|---|---|
| TCM SB No. MSB644 | 1-3 | April 4, 1994 |

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 as of September 6, 1994. Copies may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (205) 438-3411. 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.

(n) This amendment becomes effective on June 28, 1995.

N3553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

94-6-9 N
AD NUMBER

# TCM (Bendix) Magneto

If multi-engine: ☐ Left ☑ Right ☐ Front ☐ Rear  Part No/Serial No: 10-349305-1 S/N 734060

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D. NA. | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-8895. Docket 94-ANE-12.

Applicability: Teledyne Continental Motors (TCM) (formerly Bendix) magnetos new and rebuilt TCM Model SC-20, Part Number (P/N) 10-500XXX-X series; Model SC-200, P/N 10-600XXX-X series; and Model S-1200, P/N 10-349XXX-X series, magnetos with Serial Numbers (S/N) J2793XXX(R) through J3193XXX(R), K0193XXX(R) through K3093XXX(R) and L0193XXX(R) through L2293XXX(R) inclusive, with capacitor, P/N 10-349276, with date code 93-40 or 93-42. In addition, all TCM Model SC-20, P/N 10-500XXX-X series; SC-200, P/N 10-600XXX-X series; and S-1200, P/N 10-349XXX-X series, magnetos that have capacitor, P/N 10-349276, identified with date code 93-40 or 93-42, installed after October 27, 1993. Also, any TCM or Bendix magneto regardless of serial number that was fitted after October 27, 1993, with capacitors P/N 10-349276, sold as individual replacement parts with date code 93-40 or 93-42. These magnetos are installed on but not limited to reciprocating engine powered Beech, Cessna, Maule, Mooney, Piper, and Robinson aircraft.

NOTE: The "X" represents numbers in the P/N and S/N that have no significance in determining applicability; only the first five digits are needed. The "(R)" at the end of the S/N indicates a rebuilt magneto. The absence of an "(R)" indicates a new magneto.

Compliance: Required as indicated, unless accomplished previously.

To prevent possible injury or death to ground personnel due to a non-grounded magneto, accomplish the following:

NOTE: WARNING: Do not move propellers by hand on engines that may contain affected capacitors until the inspection procedures required by this airworthiness directive (AD) are completed. Ground personnel should avoid the propeller arc.

(a) Within the next 10 hours time in service after the effective date of this AD, inspect affected magnetos for the presence of capacitor P/N 10-349276, in accordance with the Detailed Instructions, paragraphs 1, 1.1, and 1.2 of TCM Critical Service Bulletin (CSB) 641, dated February 1, 1994, and, if necessary, replace with a serviceable part as follows:

(1) If the capacitor is marked with a date code other than 93-40 or 93-42, reinstall the capacitor in the magneto and metal stamp the letter "E" in accordance with the Identification paragraph of TCM CSB641, dated February 1, 1994, to show compliance with this AD. No further action is required.

(2) If the capacitor is marked with either date code 93-40 or 93-42, replace with a serviceable capacitor of the same P/N but with a date code other than 93-40 or 93-42, and metal stamp the letter "E" in accordance with the Identification paragraph of TCM CSB641, dated February 1, 1994, to show compliance with this AD.

(b) Prior to installation, inspect uninstalled capacitor, P/N 10-349276, and replace, if necessary, with a serviceable part, in accordance with the Detailed Instruction, paragraph 2.1 of TCM CSB641, dated February 1, 1994.

NOTE: TCM Critical Service Bulletin CSB94-1 dated February 1, 1994, and Lycoming Service Bulletin 517 dated February 25, 1994, refers to this subject.

(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, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

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

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

(e) The inspections shall be done in accordance with the following service bulletin:

| Document No. | Pages | Revision | Date |
|---|---|---|---|
| TCM CSB641 | 1-2 | Original | February 1, 1994 |

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 Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (205) 438-3411. 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.

(f) This amendment becomes effective May 20, 1994, to all persons except those persons to whom it was made immediately effective by priority letter AD 94-06-09, issued March 9, 1994, which contained the requirements of this amendment.

AD'S REQUIRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES ON

AIRCRAFT REGISTRATION NO. N30553

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

94-6-9 N
AD NUMBER

# TCM (Bendix) Magneto

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Part No/Serial No: 10-3499365-3 S/N 39201

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.N.A. | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-8895. Docket 94-ANE-12.

Applicability: Teledyne Continental Motors (TCM) (formerly Bendix) magnetos new and rebuilt TCM Model SC-20, Part Number (P/N) 10-500XXX-X series; Model SC-200, P/N 10-600XXX-X series; and Model S-1200, P/N 10-349XXX-X series, magnetos with Serial Numbers (S/N) J2793XXX(R) through J3103XXX(R), K0103XXX(R) through K3093XXX(R) and L0103XXX(R) through L2293XXX(R) inclusive, with capacitor, P/N 10-349276, with date code 93-40 or 93-42. In addition, all TCM Model SC-20, P/N 10-500XXX-X series; SC-200, P/N 10-600XXX-X series; and S-1200, P/N 10-349XXX-X series, magnetos that have capacitor, P/N 10-349276, identified with date code 93-40 or 93-42, installed after October 27, 1993. Also, any TCM or Bendix magneto regardless of serial number that was fitted after October 27, 1993, with capacitors P/N 10-349276, sold as individual replacement parts with date code 93-40 or 93-42. These magnetos are installed on but not limited to reciprocating engine powered Beech, Cessna, Maule, Mooney, Piper, and Robinson aircraft.

NOTE: The "X" represents numbers in the P/N and S/N that have no significance in determining applicability; only the first five digits are needed. The "(R)" at the end of the S/N indicates a rebuilt magneto. The absence of an "(R)" indicates a new magneto.

Compliance: Required as indicated, unless accomplished previously.

To prevent possible injury or death to ground personnel due to a non-grounded magneto, accomplish the following:

NOTE: WARNING: Do not move propellers by hand on engines that may contain affected capacitors until the inspection procedures required by this airworthiness directive (AD) are completed. Ground personnel should avoid the propeller arc.

(a) Within the next 10 hours time in service after the effective date of this AD, inspect affected magnetos for the presence of capacitor P/N 10-349276, in accordance with the Detailed Instructions, paragraphs 1, 1.1, and 1.2 of TCM Critical Service Bulletin (CSB) 641, dated February 1, 1994, and, if necessary, replace with a serviceable part as follows:

(1) If the capacitor is marked with a date code other than 93-40 or 93-42, reinstall the capacitor in the magneto and metal stamp the letter "E" in accordance with the Identification paragraph of TCM CSB641, dated February 1, 1994, to show compliance with this AD. No further action is required.

(2) If the capacitor is marked with either date code 93-40 or 93-42, replace with a serviceable capacitor of the same P/N but with a date code other than 93-40 or 93-42, and metal stamp the letter "E" in accordance with the Identification paragraph of TCM CSB641, dated February 1, 1994, to show compliance with this AD.

(b) Prior to installation, inspect uninstalled capacitor, P/N 10-349276, and replace, if necessary, with a serviceable part, in accordance with the Detailed Instruction, paragraph 2.1 of TCM CSB641, dated February 1, 1994.

NOTE: TCM Critical Service Bulletin CSB94-1 dated February 1, 1994, and Lycoming Service Bulletin 517 dated February 25, 1994, refers to this subject.

(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, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

NOTE: 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.

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

(e) The inspections shall be done in accordance with the following service bulletin:

| Document No. | Pages | Revision | Date |
|---|---|---|---|
| TCM CSB641 | 1-2 | Original | February 1, 1994 |

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 Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (205) 438-3411. 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.

(f) This amendment becomes effective May 20, 1994, to all persons except those persons to whom it was made immediately effective by priority letter AD 94-06-09, issued March 9, 1994, which contained the requirements of this amendment.

AD'S REQUIRING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES 09

AIRCRAFT REGISTRATION NO. N30553

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

94-25-4 N
AD NUMBER

# Precision Airmotive Carburetor

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

Engine Model/Serial

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.NA. S/N | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-9088. Docket 93-ANE-29.

**Applicability**: Precision Airmotive Corporation (formerly Facet Aerospace Products and Marvel-Schebler) Model HA-6 series carburetors with part numbers 10-5092, 10-5180, 10-5189, 10-5200, 10-5200-1, 10-5201-11, 10-5206, 10-5206-1, 10-5210, 10-5211, 10-5211-1, 10-5214, 10-5215, 10-5221, 10-5227. These carburetors are installed on but not limited to reciprocating engine powered aircraft manufactured by Beech, Cessna, Piper, and Mooney.

**Compliance:** Required as indicated, unless accomplished previously.

To prevent the interruption of fuel flow to the engine caused by the mixture control shaft moving out of position because of excessive wear of the mixture control shaft retention screw, accomplish the following:

(a) For affected carburetors not equipped with a mixture control shaft retainer clip (PN 55-A239), screw (P/N 15-B395), and washer (P/N 78-A292), install these items within 12 months after the effective date of this airworthiness directive (AD) in accordance with Marvel-Schebler/Tillotson Service Bulletin (SB) No. A1-78, dated September 1978, or Precision Airmotive Corporation SB No. MSA-6, dated April 6, 1994.

(b) 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, Seattle Aircraft Certification Office. The request should be forwarded through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle Aircraft Certification Office.

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

(c) 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.

(d) The installation shall be done in accordance with the following service bulletins:

| Document No. | Pages | Date |
|---|---|---|
| Marvel Schebler/Tillotson SB No. A1-78 | 1-2 | September 1978 |
| Total Pages: 2. | | |
| Precision AirmotiveCorporation SB No. MSA-6 | 1-3 | April 6, 1994 |
| Total Pages: 3. | | |

This incorporation by reference was approved by the Director of the Federal Register in accordance with U. S.C. 5 52(a) and 1 CFR part 5 1. Copies may be obtained from Precision Airmotive Corporation, 3220 - 100th Street Southwest, Suite E, Everett, WA 98204; telephone (206) 353-8181, fax (206) 348-3545. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, NM; or at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC.

(e) This amendment becomes effective on February 13, 1995.

N30557
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

# Defective Connecting Rod Bolts

95-7-1 N
AD NUMBER

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A By DATE | See Logbook # 4 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-9183. Docket 95-ANE-14.

Applicability: The following Textron Lycoming reciprocating engine models, assembled on or after February 15, 1994, and that contain connecting rod bolts shipped directly or indirectly from Superior Air Parts, Inc., on or after February 15, 1994:

O-360-A1A, -A1AD, -A1C, -A1D, -A1F6, -A1F6D, -A1G6, -A1G6D, -A1LD, -A2A, -A2D, -A2E, -A2F, -A2G, -A3A, -A3AD, -A4A, -A4G, -A4J, -A4K, -A4M, -A4N, -A5AD, -B2A, -C1A, -C1C, -C1E, -C1F, -C1G, -C2A, -C2C, -C2D, -C2E, -D2A, -D2B, -F1A6; IO-360-A1A, -A1B, -A1B6, -A1B6D, -A1C, -A1D, -A1D6, -A2A, -A2B, -A3B6D, -B1A, -B1B, -B1D, -B1E, -B1F, -B2F, -B2F6, B4A,-C1A, -C1B, -C1C6, -C1D6, -C1E6, -C1F, -J1A6D; AIO-360A1A, -A1B, -B1B; LO-360-A1G6D; HO-360-B1A, -B1B; HIO-360A1A, -B1A, -C1A, -C1B, -E1AD, -E1BD; LIO-360-C1E6; TIO360-A1B; AEIO-360-A1E, -B1G6, -H1A; O-540-A1A, -A1A5, -A1B5, -A1C5, -A1D, -A1D5, -A2B, -A3D5, -B1A5, -B1B5, -B2B5, -B2C5, -B4B5, -E4A5, -E4B5, -E4C5, -F1A5, -F1B5, -G1A5, G2A5, -H1B5D, -H2B5D, -J1A5D, -J3A5D, -J3C5D, -L2C5D; IO-540-A1A5, -B1A5, -B1C5, -C1B5, -C4B5, -C4C5, -C4D5D, -D4A5, -E1A5, -E1B5, -G1A5, -G1B5, -G1C5, -G1D5, -G1E5, -G1F5, J4A5, -K1A5, -K1A5D, -K1B5, -K1C5, -K1D5, -K1E5, K1K5, -M1A5, -N1A5, -P1A5, -R1A5, -T4C5D, -K1F5, -K1F5D, -K1G5, -K1G5D, -K1J5D, -K1K5, -M1Q5A5, -M1B5D, -N1A5, -P1A5, -R1A5, -S1A5, -T4A5D, -T4B5D, -T4CTD, -V4A5D, -W1A5D, -W3A5D, -AA1A5; TIO-540-A1A, -A1B, -A2A, -A2B, -A2C, -C1A, -E1A, -G1A, -H1A, -J2B, -F2BD, -J2BD, -N2BD, -R2AD, -S1AD, -AA1AD, -AB1AD; LTIO-540-J2B, -F2BD, -J2BD, -N2BD, -R2AD; IVO-540-A1A; AEIO-540-D4B5; TIO-541-A1A, -E1A4, -E1B4, -E1C4; IO-720-A1A, -A1B, -B1B, -B1BD, -C1B, and -D1B.

These engines are installed on but not limited to the following aircraft: Beech series 95, 23, 76, 60; Piper series PA-24, PA-44, PA-28, PA-34, PA-23, PA-25, PA-32, PA-60, PA-31; Aero Commander (Intermountain, Callair, Aeronautical Agricola Mexicana, Twin Commander Aircraft Corp.) series A-6, A-9, 100, 500; Lake Aircraft Corporation (Consolidated Aero., Inc., REVO) series C-2, LA-4; Mooney Aircraft Corp. series M-20, M-22; Sud Aviation GY-100; Partenavia series P-68; Siai-Marchetti (Agusta S.p.A) series S.205, S.210, F.260, S.208; Procaer series F 15; SOCATA series TB10, MS-893, 235, TB20, TB21; Cessna series 172, 177, 177RG, 182, TR182, 182RG; Teal Aircraft Corporation (Bohica) TWC-1; Avions Mudry et Cie CAP10; Augustair (Montanair, Inc.) 2150; Grumman American (American General Aircraft Holding Co., Inc.) AA-5 series; Fuji Heavy Industries, Ltd. FA-200 series; Bellanca (American Champion Aircraft Corp.) Aircraft 8GCBC, 8KCAB; Maule Aerospace Technology Corp. series MX-7, M5, M-6; Christen A-1, (Pitts) S1T; Schweizer Aircraft Corp.(Hughes, McDonnell Douglas) 269A series; Rockwell (Commander Aircraft Company) series 112, 114; Moravan ZLIN Z 242L; Slingsby Aviation Limited T67M; Enstrom F-28 series; Found Brothers Aviation Ltd. FBA-2C, FBA Centennial "100"; Dornier Luftfahrt GmbH DO-28 series; Spinks Industries, M.H. Spinks, Sr. Rawdon T-1; Pilatus Britten-Norman BN-2 series; Omega Aircraft Corporation BS-12D1; Robinson R-44 series; Aerostar Aircraft Corp. (Piper, Ted Smith); Brantly Helicopters Industries U.S.A. Co., Ltd. 305; Pacific Aerospace Corp., Ltd. FU-24-954 series.

NOTE: This 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 use the authority provided in paragraph (g) to request approval from the FAA. This approval may address either no action, if the current configuration eliminates the unsafe condition, or different action necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any engine from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To prevent engine failure due to connecting rod bolt failure, which could result in damage to or loss of the aircraft, accomplish the following:

(a) Prior to further flight, determine if the engine has been assembled on or after February 15, 1994. This AD does not apply to engines assembled prior to February 15, 1994.

(b) For the purpose of this AD, assembled is defined as the construction of an engine from its component parts for any purpose, such as, but not limited, overhaul and inspection.

(c) For engines assembled on or after February 15, 1994, prior to further flight, determine if any connecting rod bolts were replaced during assembly. This AD applies only to engines that had connecting rod bolts replaced on or after February 15, 1994.

(d) For engines that contain replacement connecting rod bolts installed on or after February 15, 1994, prior to further flight, determine if any of those replacement connecting rod bolts were purchased directly from Textron Lycoming or Aircraft Technologies, Inc. This AD does not apply to engines with replacement connecting rod bolts purchased directly from Textron Lycoming or Aircraft Technologies, Inc. In addition, this AD does not apply to engines that were manufactured or remanufactured at Textron Lycoming.

(e) For engines that contain replacement connecting rod bolts installed on or after February 15, 1994, that were not purchased directly from Textron Lycoming or Aircraft Technologies, Inc., prior to further flight, visually inspect to determine if the connecting rod bolts are clearly identified by raised letters SPS, S, C, or FC, identifying them as Textron Lycoming parts, or SL75060 etched on the head, identifying them as Superior Air Parts, Inc., or AL75060 forged into the head, identifying them as PMA parts manufactured by Aircraft Technologies, Inc. If the connecting rod bolts can be positively identified as provided in this paragraph, no further action is required.

(f) If the connecting rod bolts can not be positively identified in accordance with paragraph (e) of this AD, prior to further flight remove unapproved connecting rod bolts and replace with serviceable parts.

NOTE: Further information may be found in Superior Air Parts Service Bulletin No. 95-002, dated March 3, 1995, or by contacting Superior Air Parts, Inc., 14280 Gillis Rd., Dallas, TX 75244-3792; telephone (800) 487-4884.

(g) An alternative method of compliance that provides an acceptable level of safety may be used if approved by the Manager, Special Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Special Certification Office.

NOTE: Information concerning the existance of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Special Certification Office.

(h) Special flight permits shall not be issued.

(i) This amendment becomes effective April 12, 1995, to all persons except those persons to whom it was made immediately effective by priority letter AD 95-07-01, issued March 17, 1995, which contained the requirements of this amendment.

AIRCRAFT REGISTRATION NO N30593

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

96-9-6 N/R
AD NUMBER

## Brackett Air Filter

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. TOTAL TIME | NEXT COMPL. DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | DWA | | | |

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Amendment 39-9580. Docket No. 95-CE-61-AD. Supersedes AD 95-03-02, Amendment 39-9139.

**Applicability:** Air filter assemblies presented in the following chart that utilize a neoprene gasket installed on, but not limited to the following airplanes, certificated in any category:

**NOTE 1:** These air filters could be installed as original equipment or in accordance with Supplemental Type Certificate (STC) SA71GL or STC SA693CE.

| Air Filter Assembly | Airplanes Installed On |
|---|---|
| BA-2010 | **Beechcraft** Model 77 Airplanes |
| BA-4106 | **Cessna** Models 120, 140, 140A, 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150M, 152, and A152; **American Champion Models Bellanca (Champion) (Aeronca)** 7ACA, 7ECA, and 7FC; **Aviat, Inc. Models A-1; Luscombe Models** 8, 8A, 8B, 8C, 8D, 8E, 8F, and T-8F; **Piper Models** PA-22, PA-22-135, PA-22-150, PA-22-160, PA-22-108, PA-20-115, PA-20-135, PA-38-112, J-3, J3C-65, J3C-65S, PA-11, PA-11S, J4A, J4A-S, J4E, J5A, J5A-80, PA-12, PA-12S, PA-16, PA-17, PA-18, PA-18A, PA-18S, PA-18-"125" (Army L-21A), PA-18AS-"125", PA-18S-"125", PA-18AS-"135", PA-18S-"135", PA-18-"135", PA-18-"150", PA-18A-"150" (SN 18-1 through 18-6963), PA-18S-"150", PA-19, PA-18A (Restricted), PA-18A-"135" (Restricted), and PA-18A-"150" (Restricted) (SN 18-1 through 18-18-6963); **Taylorcraft** Models BC65, BCS-65, BC12-65, BCS12-65, BC12-D, BCS12-D1, BC12D85, BCS12D85, BC12D-4-85, BCS12D-4-85, 19, F19, F21, DC-65, DCO-65, F22, F22A, F22B, and F22C; **Univair** Models (Alon) A-2, A2-A, (Forney) F-1, F-1A, and (Mooney) M10; |

(over) ⇒

PART # INSTALLED
OA 5705 8/12/93

AD RECORDING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES OR

AD Number (continued) _____ Aircraft Registration No. _____

Page No. _____ Type Aircraft _____

adNote

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL DUE AT: TOTAL TIME | NEXT COMPL DUE AT: DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
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**Swift** Museum Models (Globe) GC-1A and GC-1B;
**Augustair** Model Varga (Morrisey) 2150A;
**Aeronca** Model 65-CA;
**American Champion** 7ECA (with Cont. O-200-A engine) and 7ACA;
**Reims** Aviation (Cessna) F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, F152, AND FA152;
**Socata-Groupe** Aerospatiale Models Rallye Series MS880B, MS885, and 100S

**BA-4106-1** **Aviat**, Inc. Model (Christian) A-1

**BA-4210** **Gulfstream Models** AA-1, AA-1A, AA-1B, AA-1C, and AA-5

**BA-5110** **Cessna** Models 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H, 172I, 172K, 172L, and 172M;
**Mooney** Mite Model M-18C;
**Reims** Aviation Models (Cessna) F172D, F172E, F172F, F172G, F172H, F172K, F172L, and F172M;
**Socata-Groupe** Aerospatiale Models TB9, TB10, **Rallye Series** MS892A-150, MS892E-150, MS892E-150T, and MS892E-150ST;
**Panstwowe**
**Zakolady** Kotnicze Model PZL-Koliber 150A;
**Augustair**, Inc. Model Varga (Morrisey) 2180

**BA-5110A** **Cessna** Models 172N and 172P;
Reims Aviation Models (Cessna) F172N and F172P

**BA-6110** **Maule** Models M-4, M-4C, M-4S, M-4T, M-4-220, M-4-220C, M-4-220S, M-4-220T, M-4-180C, M-4-180S, M-4-180T, M-5-220C, M-5-235C, M-5-180C, M-5-210TC, M-6-180, M-6-235, M-7-235, MX-7-180, MXT-7-160, MXT-7-180, MX-7-160, MX-7-235, and MX-8-235;
**Mooney** Models M20, M20A, M20B, M20C, M20D, and M20G

**BA-8910** **Dynac** Models (Aero Commander) 100 and 100A

**AAF-117** **Cessna** Models 120, 140, 140A, 150,150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150M, 152, and A152;
**American** Champion Models Bellanca (Champion) (Aeronca) 7ACA, 7ECA, and 7FC;
**Aviat,** Inc. Models A-1;
**Luscombe** Models 8, 8A, 8B, 8C, 8D, 8E, 8F, and T-8F;
**Piper Models** PA-22, PA-22-135, PA-22-150, PA-22-160, PA-22-108, PA-20-115, PA-20-135, PA-38-112, J-3, J3C-65, J3C-65S, PA-11, PA-11S, J4A, J4A-S, J4E, J5A, J5A-80, PA-12, PA-12S, PA-16, PA-17, PA-18, PA-18A, PA-185, PA-18-"125" (Army L-21A), PA-18AS-"125", PA-185-"125", PA-18AS-"135", PA-18S-"135", PA-18-"135", PA-18-"150", PA-18A-"150" (SN 18-1 through 18-6963), PA-18S-"150", PA-19, PA-18A (Restricted), PA-18A-"135" (Restricted), and PA-18A-"150" (Restricted) (SN 18-1 through 18-6963);
**Taylorcraft** Models BC65, BCS-65, BC12-65, BCS12-65, BC12-D, BCS12-D1, BC12D85, BCS12D85, BC12D-4-85, BCS12D-4-85, 19, F19, F21, DC-65, DCO-65, F22, F22A, F22B, and F22C;
**Univair** Models (Aion) A-2, A2-A, (Forney) F-1, F-1A, and (Mooney) M10;
**Swift** Museum Models (Globe) GC-1A and GC-1B;
**Augustair** Model Varga (Morrisey) 2150A;
**Aeronca** Model 65-CA;
**American** Champion 7ECA (with Cont. O-200-A engine) and 7ACA;
**Reims** Aviation (Cessna) F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, F152, AND FA152;
**Socata-Groupe** Aerospatiale Models Rallye Series MS880B, MS885, and 100S, F22B, and F22C;
**Univair** Models (Alon)A-2, A2-A, (Forney) F-1, F-1A, and (Mooney) M10;
**Swift** Museum Models (Globe) GC-1A and GC-1B;
**Augustair** Model Varga (Morrisey) 2150A;
**AAF-117** (continued)**Aeronca** Model 65-CA;
**American** Champion 7ECA (with Cont. O-200-A engine) and 7ACA;
**Reims** Aviation (Cessna) F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, F152, and FA152;
**Socata-Groupe** Aerospatiale Models Rallye Series MS880B, MS885, and 100S

**AAF-118** **Cessna** Models 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H, 172I, 172K, 172L, and 172M;
**Mooney** Mite Model M-18C;
**Reims** Aviation Models (Cessna) F172D, F172E, F172F, F172G, F172H, F172K, F172L, and F172M;
**Socata-Groupe** Aerospatiale Models TB9, TB10, Rallye Series MS892A-150, MS892E-150, MS892E-150T, and MS892E-150ST;
**Panstwowe**
**Zakolady Kotnicze** Model PZL-Koliber 150A;
Augustair, Inc. Model Varga (Morrisey) 2180

**NOTE 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the

AD's, RECURRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES (SB

area subject to the requirements of this AD. For airplanes 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 (f) 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 within the next 100 hours time-in-service (TIS) after the effective date of this AD, or within the next 100 hours TIS after the last inspection accomplished in accordance with AD 95-03-02, whichever occurs first, and thereafter as indicated in the body of this AD, unless already accomplished in accordance with paragraph (c) of this AD.

To prevent gasket particles from entering the carburetor because of air filter gasket failure, which could result in partial or complete loss of engine power, accomplish the following:

(a) Inspect (visually) the inside and outside of the air filter frame for gasket looseness, movement, or deterioration in accordance with Brackett Document I-194, dated March 16, 1994. Continue this repetitive inspection at intervals not to exceed 100 hours TIS, until accomplishment of the terminating action required in paragraph (c) of this AD.

(b) If the gasket is found to be damaged, prior to further flight, replace the air filter assembly with one having a retaining lip in accordance with the Brackett INSTALLATION INSTRUCTION SHEET corresponding to the new air filter assembly part number that is applicable to the owner/operator's particular model of airplane:

| Air Filter Assembly | Replace with Assembly Instruction Sheet |
|---|---|
| BA-2010 | BA-2010 Revision A BA-2004, dated 6/6/95 |
| BA-4106 | BA-4106 Revision D BA-4105, dated 6/15/95 |
| BA-4106-1 | BA-4106-1 Revision A RM-1, dated 7/6/95 |
| BA-4210 | BA-4210 Revision B BA-4205, dated 6/14/95 |
| BA-5110 | BA-5110 Revision H BA-5105, dated 5/8/95 |
| BA-5110A | BA-5110A Revision D BA-5111, dated 5/8/95 |
| BA-6110 | BA-6110 Revision C BA-6105, dated 6/5/95 |
| BA-8910 | BA-8910 Revision B BA-8910-3, dated 6/6/95 |
| AAF-117 | BA-4106 Revision D BA-4105, dated 6/15/95 |
| AAF-118 | BA-5110 Revision H BA-5105, dated 5/8/95 |

(c) Within the next 500 hours TIS after the effective date of this AD, replace the air filter assembly as a terminating action to this AD in accordance with the Brackett INSTALLATION INSTRUCTION SHEET corresponding to the new air filter assembly part number that is applicable to the owner/operator's particular model of airplane as specified in paragraph (b) of this AD.

(d) The replacement in paragraphs (b) and (c) is considered terminating action for the repetitive inspection required by this AD.

(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 airplane to a location where the requirements of this AD can be accomplished.

(f) An alternative method of compliance or adjustment of the initial or repetitive compliance times that provides an equivalent level of safety may be approved by the Manager, Los Angeles Aircraft Certification Office, FAA, 3960 Paramount Boulevard, Lakewood, California 90712. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles Aircraft Certification Office.

**NOTE 2**: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles Aircraft Certification Office.

(g) Alternative methods of compliance approved in accordance with AD 95-03-02 (superseded by this action) are considered approved as alternative methods of compliance with this AD.

(h) The inspections and replacements required by this AD shall be done in accordance with Brackett Air Filter Document I-194, dated March 16, 1994 and with the Brackett INSTALLATION INSTRUCTION SHEET corresponding to the new air filter assembly part number that is applicable to the owner/operator's particular model of airplane referenced as specified in paragraph (b) of this AD. 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 Brackett Aircraft Company, Inc., 7045 Flightline Drive, Kingman, Arizona 86401. Copies may be inspected at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., 7th Floor, suite 700, Washington, DC.

(i) This amendment supersedes AD 95-03-02, Amendment 39-9139.

(j) This amendment becomes effective on June 7, 1996

**FOR FURTHER INFORMATION CONTACT**: Elizabeth Bumann, Aerospace Engineer, Los Angeles Aircraft Certification Office, FAA, 3960 Paramount Boulevard, Lakewood, California, 90712; telephone (310) 627-5265; facsimile (310) 627-5210.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

96-9-10 N/M
AD NUMBER

## Lycoming Engine

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

Engine Model/Serial

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | ~~D N A~~ | |
| 1-22-02 | 1700.2 | | REPLACED GEARS, HOUSING | Dave Kapica A&P 31800359 |
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Textron Lycoming: Amendment 39-9586. Docket 93-ANE-48. Supersedes AD 81-18-04 R2, Amendment 39-4395.

**Applicability:** Textron Lycoming O-235, O-290, O-320, IO-320, AIO-320, AEIO-320, LIO-320, O-340, O-360, IO-360, AEIO-360, AIO-360, HO-360, HIO-360, LO-360, LIO-360, TIO-360, TO-360, LTO-360, VO-360, IVO-360, O-540, and IO-540 series reciprocating engines, except for the following models: O-320-H2AD, O-360-E1A6D, LO-360-E1A6D, TO-360-E1A6D, LTO-360-E1A6D, IO-540-P1A5, IO-540-R1A5, IO-540-S1A5, and O-540 and IO-540 series engines built with large capacity oil pumps and dual magnetos designated with "5D" in the model suffix; for example, IO-540-K1A5D. These engines are installed on but not limited to the following aircraft: various models of single and twin engine powered Cessna, Piper, Mooney, Beech, Gulfstream American, Maule, and Socata.

**NOTE 1**: This AD may not contain an exhaustive list of aircraft that utilize the affected engines because other aircraft may have an affected engine installed through, for example, approvals made by Supplemental Type Certificate, or FAA Form 337, "Major Repair and Alteration." It is the responsibility of each aircraft owner, operator, and person returning that aircraft to service to determine if that aircraft has an affected engine.

**NOTE 2**: This 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 use the authority provided in paragraph (f) to request approval from the FAA. This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any engine from the applicability of this AD.

**Compliance**: Required as indicated, unless accomplished previously.

To prevent oil pump failure due to impeller failure, which could result in an engine failure, accomplish the following:

(a) For Textron Lycoming Model HIO-360-D1A, -E1AD, -E1BD, and -F1AD engines with serial numbers (S/N) of L-22579-51A or prior, except for the following: S/N L-22311-51A through L-22313-51A, L-22396-51A, L-22397-51A, L-22416-51A, L-22546-51A through L-22549-51A, L-22563-51A, L-22568-51A through L-22571-51A; for Textron Lycoming Model HIO-360-D1A, -E1AD, -E1BD, and -F1AD engines that were overhauled in the field or remanufactured prior to April 1, 1981, regardless of S/N; and for engines listed by S/N in Textron Lycoming Service Bulletin (SB) No. 455D, dated January 2, 1987; accomplish the following:

(1) Replace the sintered iron oil pump impeller and shaft with a hardened steel impeller and shaft in accordance with Avco Lycoming Textron SB No. 454B, dated January 2, 1987, or Avco Lycoming Textron SB No. 455D, dated January 2, 1987, as applicable, or Textron Lycoming SB No. 524, dated September 1, 1995, within 25 hours time in service (TIS) after the effective date of this AD.

(2) No action is required if engines have complied with AD 81-18-04, 81-18-04 R1, or 81-18-04 R2, and have incorporated oil pumps with a hardened steel impeller and shaft. Engines that incorporate oil pumps fitted with an aluminum impeller and shaft must comply with paragraph (c) of this AD.

(b) For engines listed by S/N in Textron Lycoming SB No. 456F, dated February 8, 1993, or Textron Lycoming SB No. 524, dated September 1, 1995, that incorporate a sintered iron impeller, accomplish the following:

(1) Replace any sintered iron oil pump impeller and shaft with a hardened steel impeller and shaft in accordance with Textron Lycoming SB No. 524, dated September 1, 1995, within 100 hours TIS after the effective date of this AD, or one year after the effective date of this

AD, whichever occurs first. Total time on the sintered iron impeller must not exceed 2,000 hours TIS since new or overhaul, whichever occurs later

(2) No action is required if engines have complied with AD 81-18-04, 81-18-04 R1, or 81-18-04 R2, and have incorporated oil pumps with a hardened steel impeller and shaft. Engines that incorporate oil pumps fitted with an aluminum impeller and shaft must comply with paragraph (c) of this AD.

(c) For all other affected engines, replace any aluminum oil pump impeller and shaft assembly with a hardened steel impeller and shaft assembly in accordance with Avco Lycoming Textron SB No. 455D, dated January 2, 1987, or Textron Lycoming SB No. 456F, dated February 8, 1993, or Textron Lycoming SB No. 524, dated September 1, 1995, as applicable, as follows:

(1) Replace at next engine overhaul (not to exceed the hours specified, for the particular engine model, in Textron Lycoming Service Instruction 1009AJ, dated July 1, 1992), at next oil pump removal, or 5 years after the effective date of this AD, whichever occurs first.

(2) No action is required if engines have complied with AD 81-18-04, 81-18-04 R1, or 81-18-04 R2, and have incorporated oil pumps with a hardened steel impeller and shaft.

NOTE: Engines originally manufactured prior to 1970 did not incorporate sintered iron impellers. For further information, refer to engine maintenance/overhaul logbook records, Lycoming build records, and the following SB's provide additional guidance: Avco Lycoming Division SB No. 381C, dated November 7, 1975, and Avco Lycoming Textron SB No. 385C, dated October 3, 1975, describe a method for determining if the early design oil pump with aluminum/steel impellers are installed. Avco Lycoming SB No. 455A, dated August 18, 1981, and Textron Lycoming SB No. 455B, dated January 2, 1987, and Avco Lycoming SB No. 456, dated August 21, 1981, introduced steel driving impeller, P/N 60746, and aluminum driven impeller, P/N LW13775. Textron Lycoming SB No. 524 includes information regarding engines which may incorporate aluminum impellers.

(d) Engines that are subject to AD 75-08-09 must have incorporated AD 75-08-09 before this AD can be accomplished.

(e) Sintered iron and aluminum impellers approved under FAA Parts Manufacturer Approval (PMA) are replacements for affected part numbers of Lycoming impellers and must also be replaced in accordance with paragraphs (a), (b), or (c), as applicable, of this AD.

(f) 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. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, New York Aircraft Certification Office.

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

(g) 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.

(h) The actions required by this AD shall be done in accordance with the following service bulletins:

| Document No. | Pages | Date |
|---|---|---|
| Avco Lycoming Division SB No. 381C Total pages: 4. | 1-4 | November 7, 1975 |
| Avco Lycoming Textron SB No. 385C Supplement No. 1 Total pages: 5. | 1-4<br>1 | October 3, 1975<br>March 18, 1977 |
| Avco Lycoming Textron SB No. 454B Total pages: 3. | 1-3 | January 2, 1987 |
| Avco Lycoming Textron SB No. 455D Total pages: 3. | 1-3 | January 2, 1987 |
| Textron Lycoming SB No. 456F Total pages: 3. | 1-3 | February 8, 1993 |
| Textron Lycoming SB No. 524 Attachment Total pages: 9. | 1-3<br>1-4 | September 1, 1995 |
| Textron Lycoming SI No. 1009AJ Total pages: 3. | 1-3 | July 1, 1992 |

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, Reciprocating Engine Division, 652 Oliver St., Williamsport, PA 17701; telephone (717) 327-7278, fax (717) 327-7022. 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.

(I) This amendment becomes effective on July 15, 1996.

**FOR FURTHER INFORMATION CONTACT:** Richard Fiesel, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine and Propeller Directorate, 10 Fifth Street, Valley Stream, NY 11581; telephone (516) 256-7504, fax (516) 568-2716.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

96-12-7 R
AD NUMBER

## TCM (Bendix) Magneto

If Multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Part No./Serial No:

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL TOTAL TIME | NEXT COMPL DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 6-23-86 | 1207 | | | 1707 | | See Logbook #4 |
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DNA

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Amendment 39-9649. Docket 93-ANE-07. Supersedes AD 78-09-07 R3, Amendment 39-4538.

**Applicability:** Teledyne Continental Motors (TCM) (formerly Bendix) S-20, S-1200, D-2000, and D-3000 series magnetos equipped with impulse couplings, installed on but not limited to reciprocating engine powered aircraft manufactured by Beech, Cessna, Mooney, and Piper.

**NOTE 1:** This airworthiness directive (AD) applies to each magneto 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 magnetos that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (c) to request approval from the Federal Aviation Administration (FAA). This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any magneto from the applicability of this AD.

**NOTE 2:** The FAA has received reports of some confusion as to what is meant by S-20, S-1200, D-2000, and D-3000 series magnetos as referenced in TCM Mandatory Service Bulletin (MSB) No. MSB645, dated April 4, 1994, and this airworthiness directive (AD). A typical example is S6RN-25, where the S designates single type ignition unit (a D designates a dual ignition unit), the 6 designates the number of cylinders, the R designates right hand rotation, the N is the manufacturer designation (this did not change when TCM purchased the Bendix magneto product line), and the number after the dash indicates the series (a -25 is a S-20 series magneto while a -3200 is a D-3000 series magneto, etc.).

**Compliance:** Required as indicated, unless accomplished previously.

To prevent magneto failure and subsequent engine failure, accomplish the following:

(a) For magnetos with riveted or snap ring impulse coupling assemblies, having less than 450 hours time in service (TIS) since new, or overhaul, or since last inspection, on the effective date of this AD, accomplish the following:

(1) Prior to the accumulation of 500 hours TIS since new, or overhaul, or since last inspection, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies, in accordance with the Detailed Instructions of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(2) Thereafter, at intervals not to exceed 500 hours TIS since the last inspection, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies, in accordance with the Detailed Instructions of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(b) For magnetos with riveted or snap ring impulse coupling assemblies, having 450 or more hours TIS since new, or overhaul, or since last inspection, on the effective date of this AD, accomplish the following:

(1) Within the next 50 hours TIS after the effective date of this AD, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies, in accordance with the Detailed instructions of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(2) Thereafter, at intervals not to exceed 500 hours TIS since the last inspection, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies, in accordance with the Detailed instruction of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(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, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

**NOTE:** 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.

(d) 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.

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

| Document No. | Pages | Revision Date |
|---|---|---|
| MSB No. MSB645 Total Pages: 6. | 1-6 Original | April 4, 1994 |
| SB No. 639 Total Pages: 2. | 1-2 Original | March 1993 |

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 (334) 438-3411. 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.

(f) This amendment becomes effective on July 18, 1996.

**FOR FURTHER INFORMATION CONTACT:** Jerry Robinette, Aerospace Engineer, Atlanta Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Avenue, Suite 2-160, College Park, GA, 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

AD Number (continued) _____

Page No. _____

adNote

Aircraft Registration No. _____

Type Aircraft _____

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |

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AIRCRAFT REGISTRATION NO. N30553

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

96-12-7 R
AD NUMBER

# TCM (Bendix) Magneto

If Multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Part No./Serial No:

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | 1707 | | Sea Level Power #4 |
| | | | DNA | | | |

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Amendment 39-9649. Docket 93-ANE-07. Supersedes AD 78-09-07 R3, Amendment 39-4536.

**Applicability:** Teledyne Continental Motors (TCM) (formerly Bendix) S-20, S-1200, D-2000, and D-3000 series magnetos equipped with impulse couplings, installed on but not limited to reciprocating engine powered aircraft manufactured by Beech, Cessna, Mooney, and Piper.

**NOTE 1:** This airworthiness directive (AD) applies to each magneto 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 magnetos that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (c) to request approval from the Federal Aviation Administration (FAA). This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any magneto from the applicability of this AD.

**NOTE 2:** The FAA has received reports of some confusion as to what is meant by S-20, S-1200, D-2000, and D-3000 series magnetos as referenced in TCM Mandatory Service Bulletin (MSB) No. MSB645, dated April 4, 1994, and this airworthiness directive (AD). A typical example is S6RN-25, where the S designates single type ignition unit (a D designates a dual ignition unit), the 6 designates the number of cylinders, the R designates right hand rotation, the N is the manufacturer designation (this did not change when TCM purchased the Bendix magneto product line), and the number after the dash indicates the series (a -25 is a S-20 series magneto while a -3200 is a D-3000 series magneto, etc.).

**Compliance:** Required as indicated, unless accomplished previously.

To prevent magneto failure and subsequent engine failure, accomplish the following:

(a) For magnetos with riveted or snap ring impulse coupling assemblies, having less than 450 hours time in service (TIS) since new, or overhaul, or since last inspection, on the effective date of this AD, accomplish the following:

(1) Prior to the accumulation of 500 hours TIS since new, or overhaul, or since last inspection, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies, in accordance with the Detailed Instructions of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(2) Thereafter, at intervals not to exceed 500 hours TIS since the last inspection, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies, in accordance with the Detailed Instructions of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(b) For magnetos with riveted or snap ring impulse coupling assemblies, having 450 or more hours TIS since new, or overhaul, or since last inspection, on the effective date of this AD, or an unknown TIS on the effective date of this AD, accomplish the following:

(1) Within the next 50 hours TIS after the effective date of this AD, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies in accordance with the Detailed Instructions of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(2) Thereafter, at intervals not to exceed 500 hours TIS since the last inspection, inspect riveted or snap ring impulse coupling assemblies for wear, and replace, if necessary, prior to further flight, with serviceable riveted or snap ring impulse coupling assemblies, in accordance with the Detailed Instruction of TCM MSB No. MSB645, dated April 4, 1994, and TCM SB No. 639, dated March 1993.

(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, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

**NOTE:** 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.

(d) 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.

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

| Document No. | Pages | Revision Date |
|---|---|---|
| MSB No. MSB645 Total Pages: 6. | 1-6 Original | April 4, 1994 |
| SB No. 639 Total Pages: 2. | 1-2 Original | March 1993 |

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 (334) 438-3411. 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.

(f) This amendment becomes effective on July 18, 1996.

**FOR FURTHER INFORMATION CONTACT:** Jerry Robinette, Aerospace Engineer, Atlanta Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Avenue, Suite 2-160, College Park, GA, 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

AD RECORDING & ROUTING | MAJOR REPAIR & ALTERATION | FACTORY SERVICE NOTES (SB

AD Number _____
(continued)

Page No. _____

adNote

Aircraft Registration No. _____

Type Aircraft _____

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT TOTAL TIME | NEXT COMPL. DUE AT DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

(d) As of the effective date of this AD, no person shall install a fuel, oil, or hydraulic hose having Cessna P/N 651-10 with a diagonal or spiral external reinforcement wrap.

(e) The checks required by paragraphs (a) and (b) of this AD may be performed by the owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7), and must be entered into the aircraft records showing compliance with this AD in accordance with section 43.11 of the Federal Aviation Regulations (14 CFR 43.11).

(f) 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 airplane to a location where the requirements of this AD can be accomplished.

(g) An alternative method of compliance or adjustment of the compliance times that provides an equivalent level of safety may be approved by the Manager, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Wichita Aircraft Certification Office.

NOTE 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Wichita Aircraft Certification Office.

(h) The hose check and replacement required by this AD shall be done in accordance with the following applicable service bulletins:

- REIMSCESSNA Service Bulletin (SB) CAB98-21, dated October 18, 1998; Model Affected: F406

- Cessna Aircraft Company SB CQB98-3, dated October 18, 1998; Model Affected: 425

- Cessna Aircraft Company SB SEB98-15, dated October 18, 1998; Models Affected: 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150K, A150L, A150M, F150F, F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, FRA150L, FRA150M, 152, A152, F152, FA152, 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H, 172I, 172K, 172L, 172M, 172N, 172P, 172Q, FP172, F172D, F172E, F172F, F172G, F172H, F172K, F172L, F172M, F172N, F172P, FR172E, FR172F, FR172G, FR172H, FR172J, FR172K, 175, 175A, 175B, 175C, P172D, R172E(T41), R172F(T41), R172G(T41), R172H(T41), R172J, R172K, 172RG, 177, 177A, 177B, 177RG, F177RG, 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K, 182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, F182P, F182Q, FR182, R182, T182, TR182, 185, 185A, 185B, 185C, 185D, 185E, A185E, A185F, 188, 188A, 188B, A188, A188A, A188B, T188C, 206, U206, U206A, U206B, U206C, U206D, U206E, U206F, U206G, TU206A, TU206B, TU206C, TU206D, TU206E, TU206F, TU206G, P206A, P206B, P206C, P206D, P206E, TP206, TP206A, TP206B, TP206C, TP206D, TP206E, 207, 207A, T207, T207A, 210, 210-5 (205), 210-5A (205A), 210A, 210B, 210C, 210D, 210E, 210F, 210G, 210H, 210J, 210K, 210L, 210M, 210N, 210R, P210N, P210R, and T210F.

- Cessna Aircraft Company SB CAB98-15, Revision 1, October 18, 1998; Models Affected: 208 and 208B.

- Cessna Aircraft Company SB MEB98-10, dated October 18, 1998; Models Affected: T303, 310P, 310Q, 310R, T310P, 310Q, 310R, 335, 336, 337, 337A, 337B, 337C, 337D, 337E, 337F, 337G, 337H, F337E, F337F, F337G, F337H, FT337E, FT337F, FT337GP, FT337HP, FTB337, T337B, T337C, T337D, T337E, T337F, T337G, T337H, T337H-SP, M337B, P337H, 340, 340A, 401, 401A, 401B, 402, 402A, 402B, 402C, 404, 411, 411A, 414, 414A, 421, 421A, 421B, and 421C.

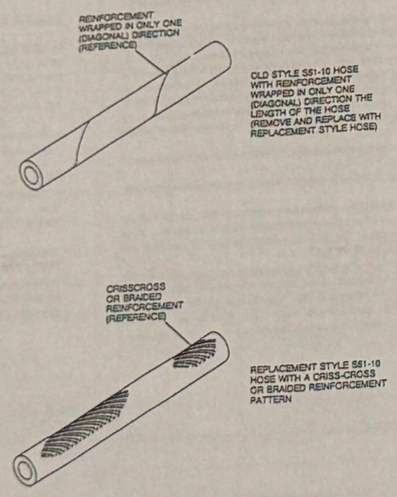
This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, Kansas 67277. Copies may be inspected at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(i) This amendment becomes effective on February 3, 1997.

**FOR FURTHER INFORMATION CONTACT**: John C. Pearson, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; telephone (316) 946-4134, facsimile (316) 946-4407.

FOR A COPY OF FIGURE 1, CALL AFS-610 AT (405) 954-4103.

AD 97-01-13
Figure 1




N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

97-15-11 N
AD NUMBER

# Lycoming Engine

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

Engine Model/Serial

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A | |
| | | | | |
| | | | | |

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Amendment 39- 10085. Docket 97-ANE-26-AD. Supersedes AD 97-01-03, Amendment 39-9874.

**Applicability**: Avco Lycoming and Textron Lycoming O- 320, IO-320, LIO-320, AIO-320, AEIO-320, O-360, LO-360, IO- 360, LIO-360, VO-360, IVO-360, HO-360, HIO-360, LHIO-360, AIO-360, AEIO-360, TIO-360, TO-360, LTO-360, LTIO-360, O- 480, GO-480, IGO-480, GSO-480, IGSO-480, O-540 **(except O- 540-J1A5D, -H1C5D, -J2A5D, -J3A5D, -J3C5D, -L3C5D)**, IO-540 **(except IO-540-W1A5D, -W3A5D, -AB1A5)**, AEIO-540, TIO-540, LTIO-540, VO-540, IVO-540, TVO-540, TIVO-540, HIO-540, IGO- 540, IGSO-540, TIO-541, TIGO-541, and IO-720 series reciprocating engines, that meet any one of the following conditions:

1. Engines with serial numbers (S/Ns) listed in Textron Lycoming Mandatory Service Bulletin (SB) No. 527C, dated April 18, 1997; or
2. Engines that had Textron Lycoming cylinder kits installed after December 15, 1995; or
3. Engines that have been overhauled, or had cylinder head maintenance performed, by a repair facility other than Textron Lycoming after December 15, 1995. These engines are installed on but not limited to reciprocating engine powered aircraft manufactured by Aerospatiale, Bellanca, Cessna, The New Piper Company, Beech, Schweizer, Maule, and Mooney.

**Note 1**: A maintenance records check may allow an owner or operator to determine if this AD applies.

**Note 2**: 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 (e) 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 piston pin failure, which could result in engine failure, accomplish the following:

(a) No action is required for engines that have been inspected in accordance with AD 97-01-03.

(b) For engines that have not been inspected in accordance with AD 97-01-03, and with S/Ns listed in Textron Lycoming Mandatory SB No. 527C, dated April 18, 1997, accomplish the following:

(1) Check the piston pin code in accordance with Textron Lycoming SB No. 527C, dated April 18, 1997, in accordance with the following schedule:

(i) For engines with 45 hours or more time in service(TIS) since the engine was shipped from Textron Lycoming, since overhaul, since installation of a cylinder kit, or since installation of a replacement piston pin, as applicable, accomplish within 5 hours TIS after the effective date of this AD.

(ii) For engines with less than 45 hours TIS since the engine was shipped from Textron Lycoming, since overhaul, since installation of a cylinder kit, or since installation of a replacement piston pin, as applicable, accomplish prior to accumulating 50 hours TIS since the applicable date.

(2) Remove from service piston pins, Part Number (P/N) LW-14077, code 17328, and replace with serviceable piston pins.

(c) For all other affected engines that have not been inspected in accordance with AD 97-01-03, determine if a suspect piston pin, P/N LW-14077, code 17328 could have been installed, in accordance with Textron Lycoming Mandatory SB No. 527C, dated April 18, 1997, and accomplish the following:

(1) If it is determined that suspect piston pins, P/N LW-14077, code 17328 could have been installed, accomplish paragraphs (b)(1) and (b)(2) of this AD.

(2) If it is determined that suspect piston pins, P/N LW-14077, code 17328 could not have been installed, no further action is required.

(3) If it can not be determined if the suspect piston pins, P/N LW-14077, code 17328 were installed, accomplish paragraphs (b)(1) and (b)(2) of this AD.

(d) For the purpose of this AD, a serviceable piston pin is a piston pin, P/N LW-14077, with a piston pin code of "BN" or "71238." Installation of a piston pin, P/N LW- 14077, with a piston pin code of "17328" is prohibited after the effective date of this AD.

(e) 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 Maintenance Inspector, who may add comments and then send it to the Manager, New York 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 New York Aircraft Certification Office.

(f) 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.

(g) The actions required by this AD shall be done in accordance with the following Textron Lycoming Mandatory SB:

| Document No. | Pages | Date |
|---|---|---|
| 527C | 1-4 | April 18, 1997 |
| Attachment I | 1-6 | April 18, 1997 |
| Attachment II | 1 | April 18, 1997 |
| Total pages: | 11. | |

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) 327-7278, fax (717) 327-7022. 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.

(h) This amendment becomes effective on August 12, 1997.

**FOR FURTHER INFORMATION CONTACT**: Franco Pieri and Pat Perrotta, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine and Propeller Directorate, 10 Fifth St., Valley Stream, NY 11581; telephone (516) 256-7526 and (516) 256-7534, fax (516) 568-2716.

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

98-2-8 N/R
AD NUMBER

## Lycoming Engine

If multi-engine: ☐ Left ☐ Right Part No./Serial No:

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. TOTAL TIME | NEXT COMPL. DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 1/22/02 | 1700.2 | | BY INSPECTION | | 1/22/07 | Dave Kapuga MB31800359 |
| 1/15/07 | 1953.4 | 1953.4 | BY INSPECTION | | 1/15/17 | [illegible] |
| 1/10/11 | 2015.4 | 2015.4 | CRANKSHAFT OVERHAUL, C/W 98-5053 & 530. | — | C/W — | [illegible] |
| | | | | | | |

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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.

(See Page #2)

AD'S RECURRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES OR

AD Number _____ (continued)

Page No. _____

adNote

Aircraft Registration No. _____

Type Aircraft _____

| 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 | |
| | | | | | | |
| | | | | | | |
| | | | | |

N 30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

98-17-11 N
AD NUMBER

# Nelson Reworked Crankshafts

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

Engine Model/Serial

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | NA BY DATE | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-10713. Docket 98-ANE-27-AD. Textron Lycoming (LYC) O-235, O-235-C1, O-235-C2C, O-235-L2C, O-235-N2C, O-290, O-290-D2, O-320, O-320-A, O-320-A1A, O-320-A2B, O-320-B2B, O-320-B2C, O-320-D2J, O-320-D3G, O-320-E2A, O-320-E2D, O-320-E2G, O-320-E3D, O-320-H2AD, O-360, O-360-A1A, O-360-A1D, O-360-A3A, O-360-A4A, O-360-A4K, O-360-B1B, IO-360-F1A6, AEIO-320-E1B, HIO-360-C1A, IO-320, IO-320-B1A, IO-360, IO-360-A1A, IO-360-A1B6, IO-360-B1E, IO-360-C, IO-360-CIC, IO-360-C1C6, IO-360-C1D6, IO-360-D, O-540-A1B5, O-540-A1D5, O-540-R2AD, IO-540, IO-540-C4B5, IO-540-S1A5, TIO-540-A2, LIO-320-C1A, LIO-360-C1E6, and IO-720 reciprocating engines; and Teledyne Continental Motors (TCM) A-65, A65-3, A65-8, A75, A75-8, C75-12, C85, C85-8, C85-12, C90-8FJ, C90-12, O-200, O-200-A, O-300, O-300-D, IO-360-C, E-185-4, E-225-8, O-470, O-470-K, O-470-L, O-470-R, O-470-11, IO-470, IO-470-N, IO-470-S, IO-520, IO-520-D, GTSIO-520, and TSIO-520-VB reciprocating engines, with installed crankshafts repaired by **Nelson Balancing Service, Bedford, Massachusetts, Repair Station Certificate No. NB7R820J,** between **February 1, 1995,** and **December 31, 1997,** inclusive, as listed (by work order (W/O)) in Table 1 of this AD.

**Table 1**

| ENGINE AND MODEL | W/O | DATE | ENGINE SER# |
|---|---|---|---|
| LYC: | | | |
| AEIO-320-E1B | 1134 | 2/17/96 | L-5653-55A |
| HIO-360-C1A | 1155 | 2/7/96 | L-12126-51A |
| IO-320 | 1141 | 1/17/96 | |
| IO-320-B1A | 1525 | 11/14/97 | |
| IO-360 | 1314 | 12/17/96 | |
| IO-360 | IN6137 | 8/7/97 | |
| IO-360-A1A | 1230 | 6/10/96 | L-474-51 |
| IO-360-A1A | 1289 | 10/23/96 | L-4085-5174 |
| IO-360-A1A | 1415b | 5/23/97 | RL-3920-51A |
| IO-360-A1B6 | 1463 | 7/31/97 | |
| IO-360-B1E | 1312 | 12/12/96 | L-4453-51A |
| IO-360-C | 1146 | 1/23/96 | R-51448-9-C |
| IO-360-C1C | 1336 | 2/10/97 | |
| IO-360-C1C | 1518 | 12/9/97 | |
| IO-360-C1C6 | 1530 | 11/25/97 | |
| IO-360-C1C6 | 1537 | 12/9/97 | L-19294-51A |
| IO-360-C1D6 | 1286 | 4/28/97 | |
| IO-360-D | 1540 | 12/2/97 | |
| IO-360-F1A6 | 1176 | 3/7/96 | L-27423-36A |
| IO-540 | 1014 | 2/8/95 | |
| IO-540 | 1056 | 6/13/95 | |
| IO-540 | 1302 | 12/5/96 | |
| IO-540-C4B5 | 1313 | 12/17/96 | L-19547-48 |
| IO-540-S1A5 | 1513 | 10/27/97 | L-19597-48A |
| IVO-435-G1A | 1271 | 10/1/96 | |
| LIO-320-C1A | 1158 | 2/8/96 | |
| LIO-360-C1E6 | 1280 | 10/7/96 | |
| LIO-360-C1E6 | 1281 | 10/9/96 | |
| O-235 | 1013 | 2/21/95 | |
| O-235 | 1051 | 6/2/95 | |
| O-235 | 1054 | 6/9/95 | |
| O-235 | 1057 | 6/14/95 | L-9041-15 |
| O-235 | 1058 | 6/29/95 | |
| O-235 | 1060 | 6/30/95 | |
| O-235 | 1069 | 8/10/95 | |
| O-235 | 1110 | 2/20/96 | |
| O-235 | 1145 | 1/23/96 | |
| O-235 | 1151 | 1/25/96 | |
| O-235 | 1160 | 2/9/96 | RL-24636-15 |
| O-235 | 1305 | 12/5/96 | L-22542-15 |
| O-235 | 1329 | 2/11/97 | |
| O-235 | 1332 | 2/11/97 | |
| O-235 | 1481 | 9/2/97 | |
| O-235-C1 | 1089 | 10/8/95 | L-6475-15 |
| O-235-C1 | 1188 | 4/2/96 | L-7143-15 |
| O-235-C1 | 1335 | 3/12/97 | L-5569-15 |
| O-235-C1 | 1367 | 3/24/97 | |
| O-235-C1 | 1019 | 2/24/95 | L-12284-15 |
| O-235-C2C | 1040 | 5/8/95 | |
| O-235-C2C | 1105 | 12/1/95 | L-12273-15 |
| O-235-C2C | 1030 | 4/6/95 | L-14545-15 |
| O-235-L2C | 1036 | 4/24/95 | |
| O-235-L2C | 1037 | 4/24/95 | L-23012-15 |
| O-235-L2C | 1050 | 6/2/95 | L-15542-15 |
| O-235-L2C | 1062 | 7/5/95 | L-18306-15 |
| O-235-L2C | 1067 | 8/8/95 | |
| O-235-L2C | 1070 | 8/10/95 | L-16005-15 |
| O-235-L2C | 1095 | 11/14/95 | RL-023227-15 |
| O-235-L2C | 1101 | 11/4/95 | L-15300-15 |
| O-235-L2C | 1102 | 11/15/95 | L-20183-15 |
| O-235-L2C | 1162 | 2/14/96 | L-16114-15 |
| O-235-L2C | 1251 | 8/22/96 | |
| O-235-L2C | 1219 | 5/16/96 | L-21215-15 |
| O-235-L2C | 1365 | 3/24/97 | |
| O-235-L2C | 1285 | 10/19/96 | |
| O-235-L2C | 1414 | 8/5/97 | |
| O-235-L2C | 1400 | 4/28/97 | |
| O-235-L2C | 1433 | 6/26/97 | L-17074-15 |
| O-235-L2C | 1417 | 12/5/97 | |
| O-235-L2C | 1504 | 10/31/97 | |
| O-235-L2C | 1435 | 6/9/97 | |
| O-235-L2C | 1524 | 11/12/97 | |
| O-235-L2C | 1508 | 11/18/97 | |
| O-235-L2C | 2010 | 11/19/97 | |
| O-235-L2C | 1538 | 11/24/97 | |
| O-290 | 1257 | 9/4/96 | |
| O-235-N2C | 1511 | 10/29/97 | L-23857-15 |
| O-290-D2 | 1082 | 9/26/95 | L-6019-21 |
| O-290 | 1326 | 3/26/97 | |
| O-320 | 1024 | 3/17/95 | |
| O-320 | 1018 | 2/22/95 | |
| O-320 | 1038 | 5/3/95 | L-39272-27A |
| O-320 | 1045 | 5/24/95 | |

AD's REQUIRING ADDITIONAL MAJOR REPAIR & ALTERATION FACTORY SERVICE NOTES ON

| ENGINE AND MODEL | W/O | DATE | ENGINE SER# |
|---|---|---|---|
| O-320 | 1084 | 9/28/95 | |
| O-320 | 1116 | 1/8/96 | |
| O-320 | 1125 | 1/8/96 | |
| O-320 | 1169 | 2/28/96 | |
| O-320 | 1175 | 3/7/96 | |
| O-320 | 1184 | 3/28/96 | |
| O-320 | 1189 | 8/27/96 | |
| O-320 | 1202 | 4/30/96 | |
| O-320 | 1212 | 5/10/96 | |
| O-320 | 1283 | 10/17/96 | |
| O-320 | 1316 | 12/21/96 | |
| O-320 | 1340 | 2/25/97 | L-24367 |
| O-320 | 1347 | 2/18/97 | |
| O-320 | 1360 | 3/10/97 | |
| O-320 | 1361 | 3/10/97 | |
| O-320 | 1436 | 5/29/97 | |
| O-320 | 1468 | 8/14/97 | |
| O-320 | 1474 | 8/22/97 | L-13130-39A |
| O-320 | 1477 | 9/13/97 | |
| O-320 | 1519 | 11/21/97 | |
| O-320 | 1507 | 11/18/97 | |
| O-320 | 1171 | 3/1/96 | |
| O-320 | 1546 | 12/7/97 | |
| O-320 | 1194 | 4/13/96 | |
| O-320-A | 1192 | 4/13/96 | |
| O-320-A | 1244 | 8/13/96 | L-5270-27 |
| O-320-A1A | 1196 | 4/13/96 | |
| O-320-A | 1461 | 9/9/97 | L-12626-27 |
| O-320-A2B | 1081 | 9/22/95 | |
| O-320-A2B | 1315 | 12/17/96 | |
| O-320-B2C | 1452 | 7/10/97 | L-2977-39 |
| O-320-B2B | 1173 | 3/7/96 | L-123412-39A |
| O-320-D2J | 1172 | 3/4/96 | L-13039-39A |
| O-320-D2J | 1534 | 11/25/97 | |
| O-320-D2J | 1253 | 9/4/96 | |
| O-320-D2J | 1077 | 9/17/95 | |
| O-320-D3G | 1539 | 12/3/97 | |
| O-320-D2J | 1354 | 2/25/97 | |
| O-320-D3G | 1114 | 1/8/96 | L-10983-39A |
| O-320-D3G | 1544 | 12/3/97 | |
| O-320-D3G | 1370 | 3/26/97 | H45247 |
| O-320-E2A | 1191 | 4/13/96 | L-19377-27A |
| O-320-E2A | 1103 | 11/10/95 | L-26363-27A |
| O-320-E2A | 1439 | 6/9/97 | L-38003-55A |
| O-320-E2A | 1317 | 12/21/96 | L-15219-27A |
| O-320-E2D | 1078 | 9/17/95 | |
| O-320-E2D | 1068 | 8/10/95 | L-35528-27A |
| O-320-E2D | 1181 | 3/14/96 | |
| O-320-E2D | 1177 | 3/9/96 | L-44732-27A |
| O-320-E2D | 1245 | 8/13/96 | L-40483-27A |
| O-320-E2D | 1241 | 8/9/96 | L-42691-27A |
| O-320-E2D | 1343 | 2/17/97 | |
| O-320-E2D | 1260 | 9/9/96 | L-15300-15 |
| O-320-E2D | 1385 | 4/16/97 | |
| O-320-E2D | 1346 | 3/2/97 | L-44320-27A |
| O-320-E2D | 1533 | 11/25/97 | |
| O-320-E2D | 1458 | 7/18/97 | |
| O-320-E2G | 1338 | 3/10/97 | L-38264-27A |
| O-320-E2D | 1549 | 12/12/97 | |
| O-320-E3D | 1074 | 8/24/95 | L-29495-27A |
| O-320-E3D | 1034 | 4/18/95 | L-29668-27A |
| O-320-E3D | 1444 | 6/13/97 | |
| O-320-E3D | 1431 | 6/9/97 | L-33770-27A |
| O-320-H2AD | 1322 | 1/22/97 | L-1530-78T |
| O-320-E3D | 1500 | 10/7/97 | L-33841-27A |
| O-360 | 1157 | 2/7/96 | |
| O-360 | 1025 | 3/17/95 | |
| O-360 | 1362 | 3/10/97 | |
| O-360 | 1199 | 4/18/96 | |
| O-360 | 1394 | 5/6/97 | |
| O-360 | 1386 | 4/17/97 | |
| O-360-A1A | 1170 | 2/28/96 | L-20677-36A |
| O-360 | 1528 | 11/19/97 | |
| O-360-A1A | 1239 | 8/5/96 | |
| O-360-A1A | 1214 | 5/14/96 | L-20190-36A |
| O-360-A3A | 1531 | 11/25/97 | |
| O-360-A1D | 1411 | 5/5/97 | |
| O-360-A4A | 1464 | 7/30/97 | L-24796-36A |
| O-360-A4A | 1270 | 9/27/96 | L-14008-36A |
| O-360-A4A | 1529 | 11/25/97 | |
| O-360-A4A | 1486 | 9/6/97 | |
| O-360-A4A | 1262 | 9/9/96 | L-5261-51A |
| O-360-B1B | 1166 | 2/22/96 | L-26455-36A |
| O-360-A4K | 1132 | 1/9/96 | L-1165-40 |
| O-540-A1B5 | 1129 | 12/29/95 | |
| O-540-A1B5 | 1510 | 10/26/97 | |
| IO-720 | 1462 | 7/28/97 | L-5661-40 |
| O-540-A1D5 | 1111 | 1/10/96 | |
| TIO-540-A2 | 1064 | 7/13/95 | |
| TIO-540-A2 | 1106 | 11/27/95 | L-5949-61A |
| TIO-540-R2AD | | | |
| TCM: | | | |
| A-65 | 1152 | 1/25/96 | |
| A-65 | 1154 | 2/7/96 | 7187 |
| A-65 | 1183 | 2/22/96 | |
| A-65 | 1185 | 3/28/96 | |
| A-65 | 1233 | 6/23/96 | |
| A-65 | 1290 | 10/29/96 | |
| A-65 | 1296 | 11/14/96 | 4933868 |
| A-65 | 1299 | 11/19/96 | |
| A-65 | 1325 | 3/26/97 | |
| A-65 | 1326 | 3/26/97 | |
| A-65 | 1376 | 4/29/97 | |
| A-65 | 1438 | 6/17/97 | 5890178 |
| A-65 | 1243 | 8/13/96 | 324993 |
| A-65-3 | 1541 | 12/2/97 | |
| A-65-8 | 1276 | 10/5/96 | 5762568 |
| A-65-8 | 1156 | 2/7/96 | 5321868 |
| A75 | 1255 | 9/3/96 | |
| A75 | 1256 | 9/4/96 | |
| A75 | 1275 | 10/5/96 | 5162868 |
| A75-8 | 1293 | 11/4/96 | 3316-6-12 |
| C75-12F | 1088 | 10/4/95 | |
| C85 | 1092 | 10/18/95 | |
| C85 | 1198 | 4/17/96 | 29652-7-8 |
| C-85 | 1297 | 11/14/96 | |
| C-85 | 1352 | 3/10/97 | |
| C-85 | 1381 | 4/28/97 | |
| C-85 | 1391 | 4/19/97 | |
| C-85 | 1392 | 4/19/97 | |
| C-85 | 1484 | 9/4/97 | 28487-6-12 |
| C-85-8FJ | 1139 | 1/17/96 | 29845-7-8 |
| C-85-8FJ | 1420 | 5/12/97 | 29465-7-8 |
| C-85-12 | 1031 | 4/6/95 | |
| C85-12 | 1182 | 3/18/96 | 21596-6-12 |
| C-85-12 | 1217 | 5/15/96 | |
| C85-12 | 1265 | 9/12/96 | 14657 |
| C-85-12 | 1298 | 11/14/96 | 23610-6-12 |
| C-90-8F | 1471 | 9/6/97 | 42838-1-8 |
| C-90-12 | 1279 | 10/7/96 | 44747-6-12 |
| E-185-4 | 1124 | 1/16/96 | 25700D-1-9 |
| E-225-8 | 1505 | 10/28/97 | 35477-D-9-8-P |
| GTSIO-520 | 1208 | 5/7/96 | 210114-70H |
| IO-360-C | 1126 | 12/28/95 | F-51439-9-C |
| IO-470 | 1028 | 3/23/95 | 87329-R |
| IO-470-N | 1421 | 5/13/97 | 95271-1-N |
| IO-470-S | 1331 | 3/11/97 | 102412-2-S-I |
| IO-520 | 1174 | 3/4/96 | |
| IO-520-D | 1167 | 2/22/96 | |
| O-200 | 1033 | 4/18/95 | |
| O-200 | 1043 | 5/12/95 | |
| O-200 | 1049 | 6/2/95 | |
| O-200 | 1076 | 9/11/95 | 214668-27A |
| O-200 | 1104 | 11/21/95 | 213830-71A |
| O-200 | 1131 | 1/5/96 | |
| O-200 | 1142 | 1/18/96 | 265349-R |
| O-200 | 1147 | 1/23/96 | |
| O-200 | 1190 | 4/13/96 | |
| O-200 | 1193 | 4/13/96 | |
| O-200 | 1195 | 4/13/96 | |
| O-200 | 1197 | 4/17/96 | |
| O-200 | 1213 | 5/13/96 | |
| O-200 | 1261 | 9/9/96 | |
| O-200 | 1303 | 12/5/96 | |
| O-200 | 1321 | 2/7/97 | 28115 |



| ENGINE AND MODEL | W/O | DATE | ENGINE SER# |
|---|---|---|---|
| O-200 | 1324 | 2/6/97 | |
| O-200 | 1344 | 3/2/97 | |
| O-200 | 1393 | 5/5/97 | |
| O-200 | 1413 | 5/7/97 | 61001-5-4 |
| O-200 | 1430 | 5/23/97 | |
| O-200 | 1437 | 6/17/97 | 255759A-48 |
| O-200 | 1488 | 9/7/97 | |
| O-200 | 1506 | 11/18/97 | |
| O-200 | 1522 | 11/11/97 | |
| O-200-A | 1052 | 6/21/95 | 254150-A-48 |
| O-200-A | 1085 | 9/29/95 | |
| O-200-A | 1120 | 12/29/95 | 253971 |
| O-200-A | 1161 | 2/9/96 | 24R-469 |
| O-200-A | 1215 | 5/15/96 | |
| O-200-A | 1240 | 8/5/96 | 69589-8-A |
| O-200-A | 1254 | 9/3/96 | 6105-71-A-R |
| O-200-A | 1264 | 9/12/96 | |
| O-200-A | 1356 | 3/10/97 | |
| O-300 | 1027 | 3/20/95 | |
| O-300 | 1042 | 5/12/95 | 34012-D-6-D |
| O-300 | 1083 | 9/26/95 | |
| O-300 | 1096 | 10/23/95 | 464481 |
| O-300 | 1137 | 1/17/96 | |
| O-300 | 1259 | 9/4/96 | |
| O-300 | 1387 | 4/22/97 | |
| O-300 | 1397 | 4/28/97 | 5928-9A |
| O-300 | 1403 | 4/28/97 | |
| O-300 | 1423 | 6/9/97 | 3834D8Z |
| O-300 | 1555 | 1/13/98 | |
| O-300-A | 1446 | 6/27/97 | |
| O-300-D | 1022 | 3/17/95 | 35110-D-6-D |
| O-300-D | 1079 | 9/17/95 | 24276-D-0-D |
| O-300-D | 1487 | 9/6/97 | |
| O-300-D | 1543 | 12/3/97 | |
| O-470 | 1046 | 6/1/95 | |
| O-470 | 1383 | 4/4/97 | |
| O-470-11 | 1017 | 2/22/95 | |
| O-470-11 | 1491 | 10/19/97 | |
| O-470-11 | 1492 | 10/19/97 | |
| O-470-11 | 1493 | 10/19/97 | |
| O-470-11 | 1494 | 10/19/97 | |
| O-470-F | 1236 | 7/25/96 | 76956-4-F |
| O-470-K | 1087 | 10/3/95 | 47172-6-K |
| O-470-L | 1128 | 1/10/96 | 68681-8-L |
| O-470-L | 1359 | 5/19/97 | 68245-8-L |
| O-470-L | 1399 | 4/28/97 | |
| O-470-R | 1016 | 2/10/95 | 133087-6-R |
| O-470-R | 1086 | 10/3/95 | |
| O-470-R | 1165 | 2/22/96 | |
| O-470-R | 1178 | 3/10/96 | |
| O-470-R | 1201 | 6/2/96 | 83164-1-R |
| O-470-R | 1319 | 1/6/97 | 459408 |
| TSIO-520-VB | 1055 | 6/9/95 | |

**Note 1:** Blank spaces indicate unknown data. Where the engine serial number is blank in this table, it is either unknown or the crankshaft may not be installed in an engine.

**Note 2:** 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 (c) 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 due to cracking, which could result in an inflight engine failure and possible forced landing, accomplish the following:

(a) Within 10 hours time in service after the effective date of this AD, determine if this AD applies, as follows:

(1) Determine if any repair was conducted on the engine that required crankshaft removal during the February 1, 1995, to December 31, 1997, time frame; if the engine was not disassembled for crankshaft removal and repair in this time frame, no further action is required.

(2) If the engine and crankshaft was repaired during this time frame, determine from the maintenance records (engine log book), and Table 1 of this AD if the crankshaft was repaired by Nelson Balancing Service, Repair Station Certificate No. NB7R820J, Bedford, Massachusetts. The maintenance records should contain the Return to Service (Yellow) tag for the crankshaft that will identify the company performing the repair. Also the work order number contained in Table 1 of this AD was etched on the crankshaft propeller flange, adjacent to the closest connecting rod journal. Because some etched numbers will be difficult to see, if necessary, use a 10X magnifying glass with an appropriate light source to view the work order number. In addition, the propeller spinner, if installed, will have to be removed in order to see this number.

(3) A person with a private pilot or higher rated certificate may make the determination of applicability of this AD provided the propeller spinner does not have to be removed.

(4) If it cannot be determined who repaired the crankshaft, compliance with this AD is required.

(5) If the engine and crankshaft were not repaired during the time frame specified in (a)(1), or if it is determined that the crankshaft was not repaired by Nelson Balancing Service, no further action is required.

(b) Within 10 hours time in service after the effective date of this AD, accomplish the following:

(1) Perform a visual inspection as defined in paragraph (b)(2) of this AD, magnetic particle inspection, and a dimensional check of the crankshaft journals, or remove from service affected crankshafts and replace with serviceable parts.

(2) For the purpose of this AD, a visual inspection of the crankshaft is defined as the inspection of all surfaces of the crankshaft for cracks which include heat check cracking of the nitrided bearing surfaces, cracking in the main or aft fillet of the main bearing journal and crankpin journal, including checking the bearing surfaces for scoring, galling, corrosion, or pitting.

**Note 3:** Further guidance on all inspection and acceptance criteria is contained in applicable TCM or LYC Overhaul or Maintenance Manuals, or other FAA-approved data.

(3) Replace any crankshaft that fails the visual inspection, magnetic particle inspection, or the dimensional check with a serviceable crankshaft, unless the crankshaft can be reworked to bring it in compliance with:

(i) All the overhaul requirements of the appropriate TCM or LYC Overhaul/Maintenance Manuals; or

(ii) All of the FAA-approved requirements for any repair station which currently has approval for limits other than those in the appropriate TCM or LYC Overhaul/Maintenance Manuals.

(4) For the purpose of this AD, a serviceable crankshaft is one which meets the requirements of paragraph (b)(3)(i) or (b)(3)(ii) of this AD.

**Note 4:** Crankshafts removed from TCM engine models **IO-360, IO-520, and TSIO-520** series engines are also subject to compliance with **AD 97-26-17.**

(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, New York (LYC) or Atlanta (TCM) Aircraft Certification Offices. Operators shall submit their requests through an appropriate FAA Airworthiness Inspector, who may add comments and then send it to the Manager, New York or Atlanta Aircraft Certification Offices.

**Note 5:** Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta Aircraft Certification or New York Aircraft Certification Office, as applicable.

(d) 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.

(e) This amendment becomes effective on October 19, 1998.

**FOR FURTHER INFORMATION CONTACT:** Rocco Viselli, Aerospace Engineer (assigned to Textron Lycoming), New York Aircraft Certification Office, FAA, Engine and Propeller Directorate, 10 Fifth St., 3rd Floor, Valley Stream, NY 11581-1200; telephone (516) 256-7531, fax (516) 568-2716; or Jerry Robinette, Aerospace Engineer (assigned to Teledyne Continental Motors), Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, 1895 Phoenix Boulevard, One Crown Center, Suite 450, Atlanta, GA 30349; telephone (770) 703-6096, fax (770) 703-6097.

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

98-23-1 N/M
AD NUMBER

# Vac. Pump Coupling

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear — Engine Model/Serial

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | D.N.A., NOT INSTALLED | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-10882; Docket No. 98-CE-108-AD.

**Applicability:** The following Airborne dry air pumps, conversion kits, and coupling kits, with flexible coupling, part number (P/N) B1-19-1, that:

1. Have a date code resembling a clockface on the coupling and indicating a manufacture date of either "12/97" or "5-6/98"; and
2. Are installed in, but not limited to, the following aircraft or engine models, certificated in any category, that are listed in the Appendix to this AD:

| Item | Part Number | Serial Numbers |
|---|---|---|
| Dry Air Pump | 211CC | 2AP1 through 10AP319 |
| Dry Air Pump | 211CC-9 | 1AP1 through 2AP5 |
| Dry Air Pump | E211CC | 11AN543 through 11AN642 and 2AP1 through 7AP442 |
| Dry Air Pump | 212CW | 2AP1 through 7AP286 |
| Dry Air Pump | E212CW | 1AP1 through 7AP492 |
| Dry Air Pump | 215CC | 12AN719 through 12AN940 and 1AP1 through 9AP3510 |
| Dry Air Pump | 215CC-9 | 2AP1 through 7AP95 |
| Dry Air Pump | 216CW | 12AN521 through 12AN660 and 1AP1 through 10AP2695 |
| Conversion Kit | 300-1 | 4AP120 through 4AP122 and 8AP256 through 8AP258 |
| Conversion Kit | 300-2 | 2AP30 through 2AP43, 4AP134, 4AP136, and 4AP137 |
| Conversion Kit | 300-3 | 1AP1 through 1AP3 |
| Coupling Kit | 350 | 1AP through 9AP and N/A (see Note 1 below) |

**NOTE 1:** Some of the part number 350 coupling kits incorporated serial numbers 1AP through 9AP, while others were marked with "N/A" in the serial number block.

**NOTE 2:** The affected flexible coupling was shipped from Parker Hannifin between January 1, 1998, and October 13, 1998. Dry air pumps, conversion kits, or coupling kits that were installed or modified prior to January 1, 1998, would not incorporate the affected coupling. This AD allows the aircraft owner or pilot to check the maintenance records to determine whether the dry air pump, conversion kit, or coupling kit was installed or modified since January 1, 1998. See paragraph (d) of this AD for authorization.

**NOTE 3:** This AD applies to any aircraft or engine equipped with Airborne dry air pumps, conversion kits, and coupling kits, that have flexible coupling, part number (P/N) B1-19-1. Aircraft or engines with the P/N B1-19-1 flexible coupling are affected regardless of whether they have been modified, altered, or repaired in the area subject to the requirements of this AD. For aircraft or 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 (f) 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 in the body of this AD, unless already accomplished.

To prevent failure of the primary dry air pump caused by defective flexible coupling, which could result in loss of primary attitude and direction references during instrument flight rules (IFR) operations, accomplish the following:

(a) Within 2 calendar days after the effective date of this AD or prior to further flight after the effective date of this AD, whichever occurs later, replace any affected flexible coupling with P/N B1-7-3 flexible coupling (part of Parker Hannifin flexible coupling kit, Airborne P/N 350) in accordance with Parker Hannifin Airborne Service Letter No. 48, dated October 20, 1998.

(b) If parts have been ordered from Parker Hannifin, but are not available, accomplish the following:

(1) Operate the aircraft in visual flight rules (VFR) conditions only;

(2) Operate the aircraft during daytime hours only; and

(3) When parts become available, replace the coupling prior to further flight.

(c) As of the effective date of this AD, no person shall install, on any aircraft or engine, any of the affected Airborne dry air pumps, conversion kits, and coupling kits, with part number (P/N) B1-19-1 flexible coupling that has a date code resembling a clockface on the coupling and indicating a manufacture date of either "12/97" or "5-6/98".

(d) The owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7) may check the maintenance records to determine whether the existing dry air pump, conversion kit, or coupling kit was installed or modified since January 1, 1998. If the dry air pump, conversion kit, or coupling kit was not installed or modified since January 1, 1998, the AD does not apply and the owner/operator must make an entry into the aircraft records showing compliance with this AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).

(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 airplane to a location where the requirements of this AD can be accomplished, provided that:

(1) The aircraft is operated in VFR conditions only; and

(2) The aircraft is operated during daytime hours only.

(f) An alternative method of compliance or adjustment of the compliance times that provides an equivalent level of safety may be approved by the Manager, Chicago Aircraft Certification Office (ACO), 2300 E. Devon Avenue, Des Plaines, Illinois 60018. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Chicago ACO.

**NOTE 4:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Chicago ACO.

(g) The replacement required by this AD shall be done in accordance with Parker Hannifin Airborne Service Letter No. 48, dated October 20, 1998. 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 Parker Hannifin Corporation, Airborne Division, 711 Taylor Street, Elyria, Ohio 44035. Copies may be inspected at the FAA, Central Region, Office of the Regional Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(h) This amendment becomes effective on November 20, 1998, except those persons to whom it was made immediately effective by priority letter AD 98-23-01, issued October 29, 1998, which contained the requirements of this amendment.

**FOR FURTHER INFORMATION CONTACT:** Mr. Roy Boffo, Aerospace Engineer, FAA, Chicago Aircraft Certification Office, Systems and Flight Test Branch, 2300 E. Devon Avenue, Des Plaines, Illinois 60018; telephone: (847) 294-7564; facsimile: (847) 294-7834.

**(Appendix for AD 98-23-01 on Reverse)⇒**

AD's ENGINEERING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES DB

APPENDIX TO AD 98-23-61; DOCKET NO. 98-CE-168-AD

| Part Name | Part Number | Airplane/Engine Make/Model |
|---|---|---|
| Dry Air Pump | 211CC<br>215CC<br>E211CC | AIRPLANES<br>**Aerospatiale** / TB9, TB10, TB20<br>**Beech** / 19, 19A, B19, 23, B23, C23, 24, A24, A24R, B24R, C24R, 76, 77, E95<br>**Cessna** / F152, FA152, 172, FR172K, R172K, 177, 177RG,FR182, R182, TR182, T182, T303, 336, 337, F337, T337G, P337, FT337, 411, 411A, 421A, 421B, 421C<br>**Grumman** / AA1B, AA1C, AA5A, AA5B, GA7<br>**Lake** / LA-4-200, 250<br>**Maule** / M4-210<br>**Mooney** / M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K<br>**Navion** / G, H<br>**Piper** / PA-18, PA18-150, PA-22-108, PA-23-235, PA-23-250,PA-24-180, PA-24-250, PA-24-260, PA-24-400, PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-28-161, PA-28-180,PA-28R-180, PA-28-181, PA-28R-200, PA-28-201T,PA-28R-201, PA-28R-201T, PA-28RT-201, PA-28RT-201T,PA28-235, PA-28-236, PA-30, PA-31-300, PA-31-310,PA-31-325, PA-31-350, PA-31P-350, PA-32-260, PA-32-300,PA-32R-300, PA-32RT-300, PA-32RT-300T, PA-32-301,PA-32-301T, PA-32R-301, PA-32R-301T, PA-34-200,PA-34-200T, PA-38-112, PA-39, PA-44-180, PA-44-180T<br>**Rockwell** / 100, 112, 112A, 112B, 112TC, 112TCA, 114, 114A, 180<br>**Lovaux Ltd.** / Optica OA7, Series 300<br>(FLS Aerospace)<br><br>ENGINES<br>**Textron Lycoming** / O-235, O-290, O-320, O-360, O-435, O-540, IO-320, IO-360, IO-540, IO-720, TIO-360, TIO-540, GO-480,GSO-480<br>**Continental** / O-300, GO-300, IO-360, TSIO-360, TSIO-520, GTSIO-520<br>**United Aircraft** / PT6A, PT6B |
| Dry Air Pump | 211CC-9<br>215CC-9 | AIRPLANES<br>**Cessna** / 150, A150K, A150L, A150M, F150K, F150L, F150M, FA150K, FA150L, FA150M, 152, A152, 172, 177, 337<br><br>ENGINES<br>**Textron Lycoming** / O-320<br>**Continental** / C90-16, O-200 |
| Dry Air Pump | 212CW<br>E212CW<br>216CW | AIRPLANES<br>**Beech** / A23, A23A, E33, E33A, F33A, F33C, V35A, V35A-TC, 36, A36, A36TC, B36TC, B55, 58, 76<br>**Britten Norman** / BN-2A<br>**Cessna** / 152, A152, 172, 180, 182H thru M, 182N and P, F182,R182, TR182, T182, 185, U206, TU206, 207, T207,210, T210, P210, T303, 310P, 310R, 335, 340, 340A,401, 401A, 401B, 402, 402A, 402B, 414, 414A<br>**Helio** / H295<br>**Maule** / M4-220<br>**Mooney** / M20K, M22<br>**Navion** / G, H<br>**Piper** / PA-31-325, PA-31-350, PA-31P-350, PA-34-200, PA-34-200T,PA-39, PA-44-180, PA-44-180T, PA-46-310P, PA-46-350<br><br>ENGINES<br>**Textron Lycoming** / LIO-360, GO-435, TIO-541<br>**Continental** / E-185, E-225, IO-346, O-470, IO-470, TSIO-470, IO520<br>**Franklin** / 6A-335, 6A-350 |
| Conversion Kit | 300-1 | **Cessna** / 172A, 172B thru 172HPiper / PA-22-108, PA-22-135, PA-22S-135, PA-22-150, PA-22S-150, PA-22-160, PA-22S-160 |
| Conversion Kit | 300-2 | **Beech** / 35 thru S35, 35-33 thru35- A33, 35-B33<br>**Cessna** / 175 thru 175A, 175B, 175C, P172D, 180 thru 180H, 182 thru 182H, 185 thru 185D, 210, 210A thru 210J, 210-5, 210-5A |
| Conversion Kit | 300-3 | **Cessna** / 150, 150A thru 150H |
| Coupling Kit | 350 | Coupling kit may have been put on any of the above list airplanes or engines |

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

99-27-2 N
AD NUMBER

## Fuel Selector Valve

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 11/15/00 | | | O.N.A. | See Logbook #4 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-11483; Docket No. 99-CE-24-AD. Issued December 20, 1999.

(a) What airplanes are affected by this AD?: The following airplane models and serial numbers that are:

(1) certificated in any category; and

(2) equipped with Fuel Selector Valve Cam part number 0513123, or FuelSelector Valve part number 0513120-5, 0513120-6, 0513120-8, 0513120-9, or 0513120-200; that Cessna shipped from December 6, 1998, through May 10, 1999:

**AeroTech Note:** The aircraft applicability chart was in this position in the original airworthiness directive. We moved it to the reverse side of this **adNote™** so the chart would show up in its entirety on one (1) page.

(b) Who must comply with this AD?: Anyone who wishes to operate any of the above airplanes on the U.S. Register.

(c) What problem does this AD address?: The affected fuel selector valve cams or fuel selector valves, when installed, could result in an inadequate supply of fuel to the engine. This could then result in an emergency landing or loss of control of the airplane.

(d) What must I do to address this problem?: To address this problem, you must accomplish the replacement, records check, and/or installation prohibition requirements explained below, as applicable:

**(1) Replacement Requirement**

(i) What action is required?: Replace any Fuel Selector Valve Cam part number 0513123, or Fuel Selector Valve part number 0513120-5, 0513120-6, 0513120-8, 0513120-9, or 0513120-200, that Cessna shipped from December 6, 1998, through May 10, 1999, Paragraphs (d)(2)(i) and (d)(2)(ii) of this AD provide procedures for checking the maintenance records to determine if one of these fuel selector valve cams or fuel selector valves is installed.

(ii) What procedures must be used?: The procedures contained in Cessna Service Bulletin SEB99-7, dated June 7, 1999, and the applicable maintenance manual.

(iii) When is the action required?: Within the next 10 hours TIS after the effective date of this AD.

**(2) Maintenance Records Check**

(i) May the pilot check the maintenance records to determine if this AD applies?: Yes. The owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7) may check the maintenance records to determine whether one of the affected fuel selector valve cams or fuel selector valves was installed after December 6, 1998.

(ii) What if the maintenance records show that no affected fuel selector valve cam or fuel selector valve is installed?: If, by checking the maintenance records, the pilot can positively show that a Fuel Selector Valve Cam part number 0513123, or Fuel Selector Valve part number 0513120-5, 0513120-6, 0513120-8, 0513120-9, or 0513120-200, is not installed or was installed prior to December 6, 1998, then the replacement requirement of paragraph (b) of this AD does not apply. You must make an entry into the aircraft records that shows compliance with this portion of the AD, in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).

**(3) Installation Prohibition Requirements**

(i) What prevents these parts from being installed in the future?: You may not install a Fuel Selector Valve Cam part number 0513123 or Fuel Selector Valve part number 0513120-5, 0513120-6, 0513120-8, 0513120-9, or 0513120-200; that Cessna shipped from December 6, 1998, through May 10, 1999, in any of the affected airplanes.

(ii) When does this prohibition go into effect?: As of the effective date of this AD.

(e) Can I comply with this AD in any other way?: Yes.

(1) You may use an alternative method of compliance or adjust the compliance time if:

(i) Your alternative method of compliance provides an equivalent level of safety; and

(ii) The Manager, Wichita Aircraft Certification Office, approves your alternative. Submit your request through an FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager.

(2) This AD applies to each airplane 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 airplanes 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 (e)(1) 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.

(f) Where can I get information about any already-approved alternative methods of compliance?: Contact the Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas, 67209; telephone: (316) 946-4143; facsimile: (316) 946-4407.

(g) What if I need to fly the airplane to another location to comply with this AD?: The FAA can issue a special flight permit under sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate your airplane to a location where you can accomplish the requirements of this AD.

(h) Are any service bulletins incorporated into this AD by reference?: Yes. You must accomplish the actions required by this AD in accordance with Cessna Service Bulletin SEB99-7, dated June 7, 1999. The Director of the Federal Register approved this incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51. You can get copies from the Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, Kansas 67277. You can look at copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(i) When does this amendment become effective?: This amendment becomes effective on January 21, 2000.

**FOR FURTHER INFORMATION CONTACT:** Mr. Paul O. Pendleton, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Rm 100, Mid-Continent Airport, Wichita, Kansas, 67209; telephone: (316) 946-4143; facsimile: (316) 946-4407.

**(See reverse side for applicability chart)⇒**

AD's REQUIRING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES OR

(Aircraft applicability chart for AD 99-27-02)

| Model | Serial Numbers |
|---|---|
| 170B | 20267 through 20999 |
| 170B | 25000 through 27169 |
| 170B | 609 and 19401 |
| 172 | 28000 through 29999 |
| 172 | 36000 through 36999 |
| 172 | 46001 through 46754 |
| 172 | 610, 612, and 615 |
| 172A | 46755 through 47746 |
| 172A | 622 and 625 |
| 172B | 17247747 through 17248734 |
| 172B | 630 |
| 172C | 17248735 through 17248544 |
| 172D | 17248545 through 17250572 |
| 172E | 17250573 through 17251822 |
| 172E | 639 |
| 172F | 17251823 through 17253392 |
| 172G | 17253393 through 17254892 |
| 172H | 17254893 through 17256492 |
| 172H | 17256494 through 17256512 |
| 172H | 638 |
| 172I | 17256513 through 17257161 |
| 172K | 17257162 through 17258486 |
| 172K | 17258487 through 17259223 |
| 172L | 17258224 through 17259903 |
| 172L | 17259904 through 17260758 |
| 172M | 17260759 through 17261444 |
| 172M | 17261446 through 17261577 |
| 172M | 17261579 through 17261898 |
| 172M | 17256493 |
| 172M | 17261899 through 17263458 |
| P172 | P17257120 through P17257188 |
| P172E (T41) | R172-0001 through R172-0335 |
| R172F (T41) | R172-0336 through R172-0409 |
| R172G (T41) | R1720410 through R1720444 |
| R172H (T41) | R1720445 through R1720494 |
| R172H (T41) | R1720495 through R1720546 |
| R172H (T41) | R1720547 through R1720620 |
| R172J | P17257189 |
| R172K | R1722000 through R1722724 |
| R172K | R1722725 through R1722929 |
| R172K | R1722930 through R1723199 |
| R172K | 680 |
| R172K | R1723200 through R1723397 |
| R172K | R1723397 through R1723399 |
| R172K | R1723400 through R1723454 |
| 175 | 28700A |
| 175A | 619 |
| 175C | 17557003 through 17557119 |
| 177 | 17700001 |
| 177 | 17700003 through 17701164 |
| 177 | 661 |
| 177A | 17701165 through 17701370 |
| 177B | 17701371 through 17701471 |
| 177B | 17701473 through 17701530 |
| 177B | 17701531 through 17701633 |
| 177B | 17700002 |
| 177B | 17701634 through 17701773 |
| 177B | 17701774 through 17701973 |
| 177B | 17701974 through 17702123 |
| 177B | 17702124 through 17702313 |
| 177B | 17701472 |
| 177B | 17702314 through 17702522 |
| 177B | 17702523 through 17702672 |
| 177B | 17702673 through 17702752 |
| F172D | F172-0001 through F172-0018 |
| F172E | F172-0019 through F172-0085 |
| F172F | F172-0086 through F172-0179 |
| F172G | F172-0180 through F172-0319 |
| F172H | F172-0320 through F172-0431 |
| F172H | F172-0436 through F172-0442 |
| F172H | F172-0444 through F172-0446 |
| F172H | F172-0432 through F172-0435 |
| F172H | F172-0443 |
| F172H | F172-0447 through F172-0559 |
| F172H | F172-0560 through F172-0654 |
| F172H | F17200655 through F17200754 |
| F172K | F17200755 through F17200804 |
| F172L | F17200805 through F17200904 |
| F172M | F17200905 through F17201034 |
| F172M | F17201035 through F17201234 |
| FP172 | FP172-0001 through FP172-0003 |
| FR172E | FR17200001 through FR17200060 |
| FR172F | FR17200061 through FR17200145 |
| FR172G | FR17200146 through FR17200225 |
| FR172H | FR17200226 through FR17200275 |
| FR172H | FR17200276 through FR17200350 |
| FR172J | FR17200351 through FR17200440 |
| FR172J | FR17200441 through FR17200530 |
| FR172J | FR17200531 through FR17200559 |
| FR172J | FR17200560 through FR17200590 |
| FR172K | FR17200591 through FR17200620 |
| FR172K | FR317200621 through FR17200630 |
| FR172K | FR17200631 through FR17200655 |
| FR172K | FR17200656 through FR17200665 |
| FR172K | FR17200666 through FR17200675 |

N30557
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2000-6-1 N
AD NUMBER

# Fuel Filter Standpipe

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| 11/15/01 | 1647. | | O.NA. | See Logbook # 4 |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-11641; Docket No. 97-CE-114-AD.

**Applicability:** All serial numbers of the following airplane models, certificated in any category, including those manufactured in France that have a capital "F" or "FR" prefix on the model number:

Models 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150K, A150L, A150M, A-150L, A-A150L, F150F, F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, FA150M, FRA150L, FRA150M, 152, A152, F152, FA152, 172F, 172G, 172H, 172I, 172K, 172L, 172M, 172N, 172P, 172Q, R172E (T41), R172F (T41), R172G (T41), R172H (T41), R172J, R172K, 172RG, F172F, F172G, F172H, F172K, F172L, F172M, F172N, F172P, FR172E, FR172F, FR172G, FR172H, FR172J, FR172K, 177, 177A, 177B, 177RG, F177RG, 180H, 180J, 180K, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R/T182, 182R, R182, R182/TR182, A182J, A182K, A182L, A182N, F182P, F182Q, FR182, 185D, 185E, A185E, A185F, 188, A188, 188A, A188A, 188B, A188B, T188C, A-A188B, U206, U206A, TU206A, U206B/TU206B, U206C/TU206C, U206D/TU206D, U206E/TU206E, U206F/TU206F, U206G/TU206G, P206, P206A, TP206A, P206B/TP206B, P206C/TP206C, P206D/TP206D, P206E/TP206E, 207/T207, 207A/T207A, 210E, 210F, 210G, 210H, 210J, 210K/T210K, 210L/T210L, 210M/T210M, 210N/T210N, T210F, T210G, T210H, T210J, P210N, 337, 337A, 337B/T337B, M337B, 337C/T337C, 337D/T337D, 337E/T337E, 337F, T337F, 337G, 337H/T337H, T337H-SP, T337G, P337H, F337E/FT337E, F337F/FT337F, F337G, F337H, FT8337, FT337GP, and FT337HP.

**NOTE 1:** This AD applies to each airplane 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 airplanes 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 (f) 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 in the body of this AD.

To prevent foreign material from entering the fuel system and engine, which could result in loss of engine power or complete engine stoppage during flight, accomplish the following:

**NOTE 2:** This AD allows the aircraft owner or pilot to check the maintenance records to determine whether a Cessna part number (P/N) 0756005-2 top assembly, Cessna P/N 0756005-8 fuel strainer assembly, or a Cessna P/N 0756005-9 fuel strainer assembly was installed after December 12, 1996. Those parts that were shipped between December 12, 1996, and September 5, 1997, may have been manufactured with an internal tube installed to a depth less than specified and may become loose and dislodge from the strainer top assembly. See paragraph (c) of this AD for authorization.

(a) Within the next 12 calendar months after the effective date of this AD, unless already accomplished, measure the standpipe in the fuel strainer assembly (tube in the filter strainer top assembly) for a visible maximum length of 1.68 inches, in accordance with the ACCOMPLISHMENT INSTRUCTIONS section and Detail A in Cessna Single Engine Service Bulletin (SB) No. SEB97-9, dated November 17, 1997; or Cessna Multi-engine SB No. MEB97-12, dated November 17, 1997, whichever is applicable.

(b) If the standpipe does not measure a maximum length of 1.68 inches, prior to further flight, replace the filter strainer top assembly in accordance with the ACCOMPLISHMENT INSTRUCTIONS section in Cessna Single Engine SB No. SEB97-9, dated November 17, 1997; or Cessna Multi-engine SB No. MEB97-12, dated November 17, 1997, whichever is applicable.

(c) The owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7) may check the maintenance records to determine whether a Cessna part number (P/N) 0756005-2 top assembly, Cessna P/N 0756005-9 fuel strainer assembly, or a Cessna P/N 0756005-8 fuel strainer assembly was installed after December 12, 1996. Those parts that were shipped between December 12, 1996, and September 5, 1997, may have been manufactured with an internal tube installed to a depth less than specified and may become loose and dislodge from the strainer top assembly. If, by checking the maintenance records, the owner/operator can make an absolute determination that one of these parts is not installed or was installed prior to December 12, 1996, the requirements of paragraphs (a) and (b) of this AD do not apply. The owner/operator must make an entry into the aircraft records showing compliance with this portion of the AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).

(d) As of the effective date of this AD, no person may install, on any of the affected Cessna airplanes, a fuel filter assembly where the maximum length of the standpipe does not measure 1.68 inches.

(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 airplane to a location where the requirements of this AD can be accomplished.

(f) An alternative method of compliance or adjustment of the compliance time that provides an equivalent level of safety may be approved by the Manager, FAA, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Room 100, Wichita, Kansas 67209. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Wichita ACO.

**NOTE 3:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Wichita ACO.

(g) The measurement and replacement required by this AD shall be done in accordance with Cessna Single Engine Service Bulletin (SB) No. SEB97-9, dated November 17, 1997, or Cessna Multi-engine SB No. MEB97-12, dated November 17, 1997. 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 the Cessna Aircraft Company, P. O. Box 7706, Wichita, Kansas 67277. Copies may be inspected at the FAA, Central Region, Office of the Regional Counsel, Room 506, 901 Locust, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(h) This amendment becomes effective on May 5, 2000.

**FOR FURTHER INFORMATION CONTACT:** Paul O. Pendleton, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4143; facsimile: (316) 946-4407.

AD's REQUIRING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES OR

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

2004-8-16 N/M
AD NUMBER

# Narco Transponder

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | DNA BY SLW | |
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Amendment 39-13586. Docket No. 2002-NE-32-AD.

**Effective Date**

(a) This AD becomes effective June 1, 2004.

**Affected Ads**

(b) None.

**Applicability**

(c) This AD applies to NARCO Avionics Inc. AT150 transponders with "Chassis Level A", serial numbers (SNs) 10000 through 12598 inclusive.

**Unsafe Condition**

(d) This AD results from reports of AT150 transponders not recognizing and responding properly to Mode S interrogations from Mode S ground stations and Traffic Alert and Collision Avoidance System (TCAS-II) airborne equipment. The actions specified in this AD are intended to prevent loss of aircraft airspace separation and the possibility of mid-air collision.

**Compliance**

(e) Compliance with this AD is required as indicated, unless already done.

**Transponders Not Modified in Accordance With Service Bulletin AT150 No. 1**

(f) For AT150 transponders with a SN listed in this AD that are not modified in accordance with NARCO service bulletin (SB) No. AT150 No. 1, dated July 29, 1977, within six months after the effective date of this AD, do the following:

(1) Install resistor part number (P/N) 312180102 and transistor P/N 755610028; and

(2) Change transponder to "Chassis Level B"; and

(3) Test transponders in accordance with the Corrective Action, Testing the Modification, and Return to Service paragraphs of NARCO SB No. AT150 No. 6, dated January 31, 2003.

**Transponders Modified in Accordance With Service Bulletin AT150 No. 1**

(g) For AT150 transponders with a SN listed in this AD, that are modified in accordance with NARCO SB No. AT150 No. 1, dated July 29, 1977, do the following:

(1) Within six months after the effective date of this AD, change transponder to "Chassis Level B"; and

(2) Test transponders in accordance with the Testing the Modification paragraph of NARCO SB No. AT150 No. 6, dated January 31, 2003; and

(3) Perform a bench test to the transponder before returning it to service. Information on bench testing can be found in AT150 Manual P/N 03606-0600.

**Alternative Methods of Compliance**

(h) The Manager, New York Aircraft 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**

(i) You must use NARCO SB No. AT150 No. 6, dated January 31, 2003, to perform the testing required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You can get a copy from NARCO Avionics Inc., 270 Commerce Drive, Fort Washington, PA 19034; telephone (215) 643-2905; fax (215) 643-0197. You can review copies 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.

**Related Information**

(j) None.

Issued in Burlington, Massachusetts, on April 16, 2004. Robert Guyotte, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

AD, REQUIRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES OR

N30553

AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

2004-10-14 Conf. R

AD NUMBER

# Lycoming Engine

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model: _____ Serial No: _____

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. TOTAL TIME | DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | N/A NO HISTORY | | | |
| | | | OF "NEW" DEFINITION | | | |
| | | | OF PROP STRIKE | | | |
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Amendment 39-13644, Docket No. 89-ANE-10-AD. Supersedes AD 91-14-22, Amendment 39-6916.

**Effective Date**

(a) This AD becomes effective June 25, 2004.

**Affected Ads**

(b) This AD supersedes AD 91-14-22.

**Applicability**

(c) This AD applies to Lycoming Engines (formerly Textron Lycoming), direct-drive reciprocating engines (except O-145, O-320-H, O-360-E, LO-360-E, LTO-360-E, TO-360-E, O-435, and TIO-541 series engines).

**Unsafe Condition**

(d) This AD results from a change to the definition of a propeller strike or sudden stoppage. The actions specified in this AD are intended to prevent loosening or failure of the crankshaft gear retaining bolt, which may cause sudden engine failure.

**Compliance**

(e) Compliance with this AD is required as indicated before further flight if the engine experiences a propeller strike after the effective date of this AD, as defined in paragraphs (i) and (j) of this AD.

(f) Inspect, and if necessary repair, the crankshaft counter bored recess, the alignment dowel, the bolt hole threads, and the crankshaft gear for wear, galling, corrosion, and fretting in accordance with steps 1 through 5 of Lycoming Mandatory Service Bulletin (MSB) No. 475C, dated January 30, 2003.

(g) Remove the existing gear retaining bolt and lockplate from service, and install a new bolt and lockplate, in accordance with steps 6 and 7 of Lycoming MSB No. 475C, dated January 30, 2003.

**Prohibition of Retaining Bolt and Lockplate**

(h) Do not install the gear retaining bolt and lockplate that were removed in paragraph (g) of this AD, into any engine.

**Definition of Propeller Strike**

(i) For the purposes of this AD, a propeller strike is defined as follows:

(1) Any incident, whether or not the engine is operating, that requires repair to the propeller other than minor dressing of the blades.

(2) Any incident during engine operation in which the propeller impacts a solid object that causes a drop in revolutions per minute (RPM) and also requires structural repair of the propeller (incidents requiring only paint touch-up are not included). This is not restricted to propeller strikes against the ground.

(3) A sudden RPM drop while impacting water, tall grass, or similar yielding medium, where propeller damage is not normally incurred.

(j) The preceding definitions include situations where an aircraft is stationary and the landing gear collapses causing one or more blades to be substantially bent, or where a hanger door (or other object) strikes the propeller blade. These cases should be handled as sudden stoppages because of potentially severe side loading on the crankshaft flange, front bearing, and seal.

**Alternative Methods of Compliance**

(k) The Manager, New York Aircraft 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**

(l) You must use Lycoming MSB No. 475C, dated January 30, 2003, to perform the inspections and repairs required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You can get a copy from Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701, U.S.A; telephone (570) 323-6181; fax (570) 327-7101. You can review copies at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; 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

**Related Information**

(m) None.

Issued in Burlington, Massachusetts, on May 12, 2004. Peter A. White, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

**CORRECTION:** [Federal Register: June 28, 2004 (Volume 69, Number 123); Page 36007; www.access.gpo.gov/su_docs/aces/aces140.html] Go to the attached "pdf" for full correction text. This copy reflects the correction.

AD REQUIRING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES OR

AD Number (continued) _____

Page No. _____

adNote

Aircraft Registration No. _____

Type Aircraft _____

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT: TOTAL TIME | NEXT COMPL. DUE AT: DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

AD Number
(continued)

Page No.

| DATE | TOTAL TIME AT COMPL |
|---|---|
| | |
| | |
| | |

| | | | | |
|---|---|---|---|---|
| 2A34C-407 | 913314 | 3 | 4365 | 30-Dec-03 |
| 3FF3C-501-A | 912626 | 3 | 3064 | 14-Dec-01 |
| 3FF3C-501-A | 912685 | 3 | 3065 | 14-Dec-01 |
| 3A33C-509-B | 913109 | 3 | 4048 | 06-Apr-02 |
| 3A33C-509-B | 913549 | 3 | 2929 | 14-Mar-01 |

| | | | | |
|---|---|---|---|---|
| 3AF30C-87-NR | 914072 | 3 | 2963 | 08-Oct-01 |
| 3A33C-509-B | 921336 | 3 | 2707 | 18-Jun-01 |
| 3A33C-509-B | 921659 | 3 | 4163 | 20-Jun-02 |
| 3A33C-509-B | 921864 | 3 | 4050 | 16-Apr-02 |
| 3A33C-509-B | 922071 | 3 | 4151 | 30-May-02 |
| 2TA34C-402-B | 951435 | 3 | 4367 | 31-Oct-02 |
| 3AF34C-92-PR | 960058 | 3 | 3723 | 08-May-01 |
| 3A32C-409 | 961373 | 3 | 3983 | 23-Oct-01 |
| 3AF32C-504-B | 990285 | 3 | 2858 | 25-Jul-01 |
| 2TA33C-409-C | 991080 | 3 | 4304 | 15-Nov-02 |
| 3A32C-406-C | 991968 | 3 | 2997 | 30-Oct-01 |
| 3AF33C-503-B | 991517 | 3 | 4303 | 16-Nov-02 |
| 3AF33C-512-C | 991573 | 3 | 4302 | 16-Nov-02 |
| 3AF33C-512-C | 991743 | 3 | 2598 | 27-Feb-01 |
| 2CM30C-613-C | 910236 | 3 | 2964 | 08-Oct-01 |
| 3AF33C-504-C | | | | |

| | | | | |
|---|---|---|---|---|
| 3A32C-406-C | 910908 | 3 | 4401 | 20-Nov-02 |
| 3A32C-406-C | 921717 | 3 | 2551 | 05-Jan-01 |
| 2TA33C-409-C | 922374 | 3 | 2639 | 01-Mar-01 |
| 2TA33C-409-C | 932003 | 3 | 3010 | 09-Nov-01 |
| 3AF34C-92-R | 932083 | 3 | 2633 | 29-Mar-01 |
| 3AF34C-92-R | 932104 | 3 | 2634 | 29-Mar-01 |
| 3AF34C-92-R | 932139 | 3 | 4204 | 18-Jul-02 |
| 2TA34C-402-C | 932188 | 3 | 4028 | 01-Apr-02 |
| 3AF32C-515 | 961848 | 3 | 4029 | 01-Apr-02 |
| 3AF32C-515 | 961855 | 3 | 4313 | 09-Sep-02 |
| 3AF32C-515 | 961934 | 3 | 4314 | 09-Sep-02 |
| 3RD33C-617-C | 971389 | 3 | 4183 | 05-Jul-02 |
| 3AF32C-512-C | 971569 | 3 | 4182 | 05-Jul-02 |
| 3AF32C-512-C | 980569 | 3 | 2605 | 27-Feb-01 |
| 2TA34C-402-C | 982779 | 3 | 4353 | 08-Oct-02 |
| 2TA34C-404-C | 285881 | Fixed pitch | 2975 | 17-Oct-01 |
| 3C160/DTM7557 | 734129 | Fixed pitch | 2549 | 03-Jan-01 |
| 3C160/DTM7553 | 26224 | Fixed pitch | 7758 | 29-May-01 |
| 3B9/CM7044 | 32697 | Fixed pitch | 2757 | 24-May-01 |
| 3B9/CM7154 | 93112 | Fixed pitch | 4164 | 20-Jun-02 |
| 3A170/DM7651 | 28877 | Fixed pitch | 4098 | 10-May-02 |
| 3A170/DM7653 | 53366 | Fixed pitch | 3081 | 02-Jan-02 |
| 3A175/FCB467 | 96725 | Fixed pitch | 2734 | 15-May-01 |
| 3C172/EM7654 | 70354 | Fixed pitch | 2736 | 23-May-01 |
| 3C172/EM7552 | 70649 | Fixed pitch | 2717 | 04-May-01 |
| 3C160/CTM7554 | 710178 | Fixed pitch | 2623 | 12-Mar-01 |
| 3C160/CTM7553 | 710495 | Fixed pitch | 3090 | 07-Jan-02 |
| 3C160/CTM7553 | 721463 | Fixed pitch | 4300 | 14-Sep-02 |
| 3C160/CTM7553 | 725673 | Fixed pitch | 2804 | 25-Jun-01 |
| 3C160/CTM7557 | 725685 | Fixed pitch | 2737 | 17-May-01 |
| 3C160/CTM7557 | 726478 | Fixed pitch | 2731 | 14-May-01 |
| 3C160/DTM7553 | 729559 | Fixed pitch | 2713 | 01-May-01 |
| 3C160/DTM7557M1 | 729858 | Fixed pitch | 4037 | 02-Apr-02 |
| 3C160/DTM7535 | | | | |

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|---|---|---|---|---|
| 3C160/DTM7557 | T30646 | Fixed pitch | 4184 | 15-May-02 |
| 3C160/DTM7557M1 | T33907 | Fixed pitch | 2580 | 06-Feb-01 |
| 3C160/DTM7557M1 | T34350 | Fixed pitch | 4379 | 31-Oct-02 |
| 3C160/DTM7557M1 | T35706 | Fixed pitch | 2784 | 11-Jun-01 |
| 3C160/DTM7557M1 | T35893 | Fixed pitch | 2583 | 07-Feb-01 |
| 3C160/DTM7557M1 | T35893 | Fixed pitch | 2850 | 20-Jul-01 |
| 3A103/TCM6958 | T70810 | Fixed pitch | 2776 | 06-Jun-01 |
| 3A103/TCM6958 | T72113 | Fixed pitch | 4276 | 23-Aug-02 |
| 3A103/TCM6958 | T73931 | Fixed pitch | 3170 | 19-Feb-02 |
| 3A103/TCM6958 | T75216 | Fixed pitch | 2667 | 05-Apr-01 |
| 3A103/TCM6958 | T75787 | Fixed pitch | 2740 | 18-May-01 |
| 3A103/TCM6958 | T76415 | Fixed pitch | 4172 | 28-May-02 |
| 3A103/TCM6958 | T76670 | Fixed pitch | 4213 | 26-Jul-02 |
| 3C160/DTM7557M1 | 82161 | Fixed pitch | 2814 | 27-Jun-01 |
| 3C160/DTM7557M1 | BL193 | Fixed pitch | 2509 | 25-Feb-01 |
| 3C160/DTM7557M1 | CC042 | Fixed pitch | 2775 | 06-Jun-01 |
| 3C160/DTM7557M1 | CK308 | Fixed pitch | 2853 | 24-Jul-01 |
| 3A103/TCM6958 | E03020 | Fixed pitch | 4378 | 31-Oct-02 |
| 3C172/MTM7453 | E10939 | Fixed pitch | 4807 | 27-Nov-02 |
| 3C172/MTM7653 | E13563 | Fixed pitch | 2625 | 14-Mar-01 |
| 3C172/SBTM7359 | E17857 | Fixed pitch | 3164 | 16-Feb-01 |
| 3C172/TM7653 | E8301 | Fixed pitch | 4154 | 18-Jun-02 |
| 3A180/MCM6950 | F3506 | Fixed pitch | 4134 | 18-Jun-02 |

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|---|---|---|---|---|
| 3A180/MCM6950 | F5414 | Fixed pitch | 2567 | 02-Feb-01 |
| 3A180/MCM6932 | F726 | Fixed pitch | 4024 | 01-Apr-02 |
| 3A101/MCM6948 | J311294 | Fixed pitch | 3570 | 02-Feb-01 |
| 3A102/CM6948 | K20061 | Fixed pitch | 2663 | 04-Apr-01 |
| 3A103/TCM6958 | KK036 | Fixed pitch | 4109 | 17-May-02 |
| 3A170/BM57660 | LA044 | Fixed pitch | 4008 | 18-Mar-02 |
| 2C160/DTM7537M1 | MK010 | Fixed pitch | 2699 | 25-Apr-01 |
| 3A103/TCM6958 | NA012 | Fixed pitch | 2663 | 20-Apr-01 |
| 3A170/EFA7553 | P76815 | Fixed pitch | 2878 | 13-Aug-01 |
| 2C172/MDM7653 | P79270 | Fixed pitch | 4081 | 02-May-02 |

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|---|---|---|---|---|
| 3A170/FFA7563 | P80498 | Fixed pitch | 4240 | 05-Aug-02 |
| 3A103/TCM6958 | PHJ039 | Fixed pitch | 4126 | 27-May-02 |
| 3A103/TCM6958 | PR775211 | Fixed pitch | 2786 | 12-Jun-01 |
| 2C235/LPA7570 | QP016 | Fixed pitch | 4184 | 08-Jul-00 |
| 2C235/LPA7570 | QK008 | Fixed pitch | 2973 | 15-Oct-01 |
| 3A103/TCM6958 | R771635 | Fixed pitch | 4087 | 06-May-02 |
| 3A103/TCM6958 | R771922 | Fixed pitch | 2634 | 19-Mar-01 |
| 3A103/TCM6958 | R772681 | Fixed pitch | 2879 | 14-Aug-01 |
| 3A103/TCM6958 | R773668 | Fixed pitch | 2840 | 12-Jul-01 |
| 3A103/TCM6958 | R774213 | Fixed pitch | 4044 | 08-Apr-02 |
| 3A103/TCM6958 | R774509 | Fixed pitch | 2803 | 21-Jun-01 |
| 3A103/TCM6958 | R774950 | Fixed pitch | 2844 | 09-Jul-01 |
| 3A103/TCM6958 | R775395 | Fixed pitch | 2842 | 12-Jul-01 |
| 3A103/TCM6958 | R776149 | Fixed pitch | 2759 | 29-May-01 |
| 3A103/TCM6958 | R776150 | Fixed pitch | 4265 | 26-Aug-02 |
| 3A103/TCM6958 | RG038 | Fixed pitch | 2657 | 30-Mar-01 |
| 3A103/TCM6958 | RGA026 | Fixed pitch | 2769 | 05-Jun-01 |
| 3A103/TCM6958 | RJP773661 | Fixed pitch | 4281 | 27-Aug-02 |
| 3A103/TCM6958 | RJP774339 | Fixed pitch | 4282 | 27-Aug-02 |
| 3A103/TCM6958 | T14958 | Fixed pitch | 4106 | 16-May-02 |
| Sensenich 76EM8S5-0-60 | 124B9K | Fixed pitch | 2603 | 26-Feb-01 |
| 76EM8S5-0-62 | 14861K | Fixed pitch | 3121 | 19-Jun-02 |
| 76EM8S5-0-60 | 15777K | Fixed pitch | 4205 | 26-Jun-01 |
| 76EM8S5-0-60 | 18122K | Fixed pitch | 4239 | 17-Jul-02 |
| 76EM8S10-0-63 | 18893 | Fixed pitch | 2597 | 21-Feb-01 |
| M74DM6-0-56 | 19209K | Fixed pitch | 4014 | 20-Mar-02 |
| 76EM8S5-0-60 | 20603K | Fixed pitch | 2565 | 31-Jan-01 |
| 76EM8S5-0-60 | 23378K | Fixed pitch | 4001 | 13-Mar-02 |
| 76EM8-0-60 | 23553 | Fixed pitch | 4404 | 25-Nov-02 |
| 76AM6-2-50 | 23510K | Fixed pitch | 4170 | 26-Jun-02 |
| 76EM8S5-0-60 | 26282K | Fixed pitch | 3018 | 12-Nov-01 |
| 76EM8S10-0-62 | 26431K | Fixed pitch | 2703 | 30-Apr-01 |
| 76EM8S14-0-60 | | | | |

| | | | | |
|---|---|---|---|---|
| 76EM8S5-0-62 | 26714K | Fixed pitch | 2791 | 13-Jun-01 |
| 76EM8S10-0-62 | 27114K | Fixed pitch | 2867 | 01-Aug-01 |
| 76EM8S5-0-62 | 27651K | Fixed pitch | 4007 | 15-Mar-02 |
| 76EM8S14-0-60 | 28769K | Fixed pitch | 4149 | 11-Jun-02 |
| 76EM8S3-0-60 | 30344K | Fixed pitch | 2767 | 04-Jun-01 |
| 76EM8-0-60 | 41649K | Fixed pitch | 2939 | 18-Sep-01 |
| 74DM6-0-56 | A43974 | Fixed pitch | 2745 | 21-May-01 |
| 74DM6-0-58 | AA4402 | Fixed pitch | 4179 | 30-May-02 |
| 74DM6-0-60 | AA5853 | Fixed pitch | 4209 | 16-Jul-02 |
| 74DM6-0-60 | AA7606 | Fixed pitch | 4139 | 05-Jun-02 |
| 74DM6-0-60 | AA8300 | Fixed pitch | 2593 | 09-Feb-01 |
| 74DM6-2-64 | AS1317 | Fixed pitch | 2666 | 04-Apr-01 |
| M69CK-0-52 | K1150 | Fixed pitch | 4209 | 22-Jul-02 |
| M74DM-0-56 | K12256 | Fixed pitch | 4072 | 24-Apr-02 |
| 72CK812-0-52 | K3278 | Fixed pitch | 2914 | 30-Aug-01 |
| 74DM6-0-58 | K33644 | Fixed pitch | 2845 | 16-Jul-01 |
| 74DM6S5-0-54 | K34229 | Fixed pitch | 4091 | 08-May-02 |
| 74DM6-2-62 | K36552 | Fixed pitch | 3002 | 01-Nov-01 |
| 74DM6S5-0-54 | K37994 | Fixed pitch | 4320 | 10-Sep-02 |
| 74DM6-0-58 | K39012 | Fixed pitch | 4107 | 16-May-02 |
| 69CK512-0-50L | K6518 | Fixed pitch | 2561 | 29-Jan-01 |
| M74DM-0-58 | K6931 | Fixed pitch | 4132 | 25-May-02 |



N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

2004-19-1 Corr. N/M
AD NUMBER

# Shoulder Harness Modification

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | NOT INSTALLED | |
| | | | N/A | |
| | | | | |
| | | | | |

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Amendment 39-13795; Docket No. 2003-CE-40-AD; Supersedes AD 86-26-04, Amendment 39-5503.

**When Does This AD Become Effective?**

(a) This AD becomes effective on November 1, 2004.

**What Other ADs Are Affected by This Action?**

(b) This AD supersedes AD 86-26-04, Amendment 39-5503.

**What Airplanes Are Affected by This AD?**

(c) This AD affects the following airplane models and serial numbers that are certificated in any category and incorporate one of the Cessna accessory kits specified in paragraph (d) of this AD.

**Aerotech Note:** *The list of airplane models/serial No.'s that was at this location in the original Airworthiness Directive has been moved to the reverse side to facilitate compilation of this* **adNote™**

**What Cessna Accessory Kits Are Affected by This AD?**

(d) The following is a list of the affected Cessna accessory kits:

| Cessna Accessory Kit | Cessna Accessory Kit |
|---|---|
| AK140-10 | AK210-93 |
| AK150-7 | AK210-171 |
| AK150-121 | AK210-172 |
| AK170-10 | AK210-173 |
| AK177-10 | AK210-174 |
| AK182-75 | AK336-32 |
| AK195-10 | AK336-36 |
| AK210-77 | AK336-103 |

**Note:** Retainer springs, part number (P/N) 443030-401, used in Cessna service kits are not affected by this AD.

**What is the Unsafe Condition Presented in This AD?**

(e) The actions specified in this AD are intended to prevent slippage of the pilot/co-pilot shoulder harness, which could result in failure of the shoulder harness to maintain proper belt length adjustment and tension. This failure could result in pilot/co-pilot injury.

**What Must I Do To Address This Problem?**

(f) To address this problem, you must do the following:

| Actions | Compliance | Procedures |
|---|---|---|
| (1) Inspect only the upper shoulder harness adjuster (part number (P/N) 443030-401) for the presence of a retainer spring | Within the next 25 hours time-in-service (TIS) after November 1, 2004 (the effective date of this AD). | Follow Cessna Single Engine Service Bulletin SEB86-8, Revision 1, and Cessna Multi-engine Service Bulletin MEB86-22, Revision 1, both dated July 28, 2003. |
| (2) If a retainer spring is found during the inspection of the upper shoulder harness adjuster (P/N 443030-401) required in paragraph (f)(1) of this AD: (i) Remove the spring by cutting each side; and (ii) stamp out the -401 identification number. | Prior to further flight after the inspection required in paragraph (f)(1) of this AD. | Follow Cessna Single Engine Service Bulletin SEB86-8, Revision 1, and Cessna Multi-engine Service Bulletin MEB86-22, Revision 1, both dated July 28, 2003. |
| (3) If a retainer spring is not found during the inspection of the upper shoulder harness adjuster (P/N 443030-401) required in paragraph (f)(1) of this AD, make an entry in the airplane log book showing compliance with this AD. | Prior to further flight after the inspection required in paragraph (f)(1) of this AD. | Follow Cessna Single Engine Service Bulletin SEB86-8, Revision 1, and Cessna Multi-engine Service Bulletin MEB86-22, Revision 1, both dated July 28, 2003. |
| (4) Only incorporate Cessna Accessory Kits identified in paragraph (d) of this AD that have been inspected and modified in accordance with paragraphs (f)(1), (f)(2), (f)(2)(i), and (f)(2)(ii) of this AD. | As of November 1, 2004 (the effective date of this AD). | Follow Cessna Single Engine Service Bulletin SEB86-8, Revision 1, and Cessna Multi-engine Service bulletin MEB86-22, Revision 1, both dated July 28, 2003. |

(g) If you did the actions of this AD using Cessna Single Engine Service Bulletin SEB86-8 and Cessna Multi-engine Service Bulletin MEB86-22, both dated November 21, 1986, no further action is required as long as you used shoulder harness adjuster, P/N 443030- 401.

**May I Request an Alternative Method of Compliance?**

(h) You may request a different method of compliance or a different compliance time for this AD by following the procedures in 14 CFR 39.19. Unless FAA authorizes otherwise, send your request to your principal inspector. The principal inspector may add comments and will send your request to the Manager, Wichita Aircraft Certification Office (ACO), FAA. For information on any already approved alternative methods of compliance, contact Gary D. Park, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; telephone: (316) 946-4123; facsimile: (316) 946-4107.

**Does This AD Incorporate Any Material by Reference?**

(i) You must do the actions required by this AD following the instructions in Cessna Single Engine Service Bulletin SEB86-8, Revision 1, and Cessna Multi-engine Service Bulletin MEB86-22, Revision 1, both dated July 28, 2003. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may get a copy from Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, Kansas 67277; telephone: (316) 517-5800; facsimile: (316) 942-9006. You may review copies at FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Issued in Kansas City, Missouri, on September 8, 2004.

Dorenda D. Baker, Manager, Small Airplane Directorate, Aircraft Certification Service.

| Model | Serial number |
|---|---|
| (1) 120 | 5000 through 15075. |
| (2) 140 | 5000 through 15075. |
| (3) 140A | 16200 through 16724. |
| (4) 150 | 517, 17001 through 17999, and 59001 through 59018. |
| (5) 150A | 628 and 15059019 through 15059350. |
| (6) 150B | 15059351 through 15059700. |
| (7) 150C | 15059701 through 15060357. |
| (8) 150D | 15060358 through 15060777. |
| (9) 150E | 644 and 15060778 through 15061532. |
| (10) 150F | 15061533 through 15064132. |
| (11) 150G | 15064133 through 15064969 and 15064971 through 15067188. |
| (12) 150H | 649 and 15067189 through 15069308. |
| (13) 150K | 15069309 through 15071328. |
| (14) 150K | 15071329 through 15072003. |
| (15) 170 | 16000 through 16729. |
| (16) 170A | 16730 through 19400 and 25000 through 27169. |
| (17) 170B | 20267 through 20999 and 25000 through 27169. |
| 18) 172 | 410, 612, 615, 28000 through 29999, 36000 through 36999, and 46001 through 46764. |
| (19) 172A | 622, 625, and 46765 through 47746. |
| (20) 172B | 630 and 17247747 through 17248734. |
| (21) 172C | 17248735 through 17249544. |
| (22) 172D | 17249545 through 17250572. |
| (23) 172E | 639 and 17250573 through 17251822. |
| (24) 172F | 17251823 through 17253392. |
| (25) 172G | 17253393 through 17254692. |
| (26) 172H | 638, 17254693 through 17256492, and 17256494 through 17256512. |
| (27) 172I | 17256513 through 17257161. |
| (28) 172J | 17256514 through 17258486 and 17258487 through 17259223. |
| (29) 172K | 17257162 through 17257188. |
| (29) R172D | P17257125 through P17257188. |
| (30) 175 | 626, 640, 28700A, and 55001 through 56238. |
| (31) 175A | 719 and 56239 through 56777. |
| (32) 175B | 17556778 through 17557002. |
| (33) 175C | 17557003 through 17557119. |
| (34) 177 | 561, 17700001, and 17700003 through 17701164. |
| (35) 177A | 17701165 through 17701370. |
| (36) 177B | 17701371 through 17701473 through 17701530. |
| (37) 180 | 504, 614, 30000 through 32661. |
| (38) 180A | 32662 through 32999 and 50001 through 50355. |
| (39) 180B | 50356 through 50661. |
| (40) 180C | 624 and 50662 through 50911. |
| (41) 180D | 18050912 through 18051063. |
| (42) 180E | 18051064 through 18051312. |
| (43) 180F | 18051184 through 18051445. |
| (44) 180G | 18051313 through 18051445. |
| (45) 180H | 18051446 through 18052175. |
| (46) 182 | 613 and 33000 through 33842. |
| (47) 182A | 33843 through 34753, 34755 through 34999, and 51001 through 51556. |
| (48) 182B | 34754, 51557 through 51622, and 51624 through 52358. |
| (49) 182C | 631 and 52359 through 53007. |
| (50) 182D | 51623 and 18253008 through 18253598. |
| (51) 182E | 18253599 through 18254423. |
| (52) 182F | 18254424 through 18255058. |
| (53) 182G | 18255059 through 18255844. |
| (54) 182H | 634 and 18255846 through 18256684. |
| (55) 182J | 18256685 through 18257625. |
| (56) 182K | 18255845, 18257626 through 18257698, and 18257700 through 18258505. |
| (57) 182L | 18258506 through 18259305. |
| (58) 182M | 662, 18257699, and 18259306 through 18260055. |
| (59) 182N | 18260056 through 18260445. |
| (60) 185 | 632 and 185-0001 through 185-0237. |
| (61) 185A | 185-0238 through 185-0512. |
| (62) 185B | 185-0513 through 185-0653. |
| (63) 185C | 185-0654 through 185-0776. |
| (64) 185D | 185-0777 through 185-0967. |
| (65) 185E | 185-0968 through 185-1149. |
| (66) A185E | 185-0968 through 185-1599 and 18501600 through 18501832. |
| (67) 190 | 7001 through 7999 and 18000 through 18183. |
| (68) 195 | 7001 through 7999 and 18000 through 18183. |
| (69) 205 | 205-0001 through 205-0275. |
| (70) P206 | P206-0001 through P206-0160. |
| (71) P206A | P206-0161 through P206-0306. |
| (72) P206B | P206-0307 through P206-0419. |
| (73) P206C | P206-0420 through P206-0519. |
| (74) P206D | P206-0520 through P206-0603. |
| (75) P206E | P20600604 through P20600647. |
| (76) U206 | U206-0276 through U206-0437. |
| (77) U206A | U206-0438 through U206-0656. |
| (78) U206B | U206-0657 through U206-0914. |
| (79) U206C | U206-0915 through U206-1234. |
| (80) U206D | U206-1235 through U206-1444 and U20601445 through U20601587. |
| (81) TP206A | P206-0161 through P206-0418. |
| (82) TP206B | P206-0307 through P206-0419. |
| (83) TP206C | P206-0420 through P206-0519. |
| (84) TP206D | P206-0520 through P206-0603. |
| (85) TP206E | P20600604 through P20600647. |
| (86) TU206A | U206-0487 through U206-0656. |
| (87) TU206B | U206-0657 through U206-0914. |
| (88) TU206C | U206-0915 through U206-1234. |
| (89) TU206D | U206-1235 through U206-1444 and U20601445 through U20601587. |
| (90) 207 | 20700001 through 20700190. |
| (91) T207 | 20700001 through 20700190. |
| (92) 210 | 618 and 57001 through 57575. |
| (93) 210-5 (205) | 641, 648, and 205-0001 through 205-0480. |
| (94) 210-5 (205A) | 205-0481 through 205-0577. |
| (95) 210A | 616 and 21057576 through 21057840. |
| (96) 210B | 21057841 through 21058085. |
| (97) 210C | 21058086 through 21058139 and 21058141 through 21058220. |
| (98) 210D | 21058221 through 21058510. |
| (99) 210E | 21058511 through 21058715. |
| (100) 210F | 21058716 through 21058818. |
| (101) 210G | 21058819 through 21058936. |
| (102) 210H | 21058937 through 21059061. |
| (103) 210J | 21059062 through 21059199. |
| (104) 210K | 21059200 through 21059351. |
| (105) T210F | T210-0001 through T210-0197. |
| (106) T210G | T210-0198 through T210-0307. |
| (107) T210H | T210-0308 through T210-0392. |
| (108) T210J | T210-0393 through T210-0454. |
| (109) T210K | 21059200 through 21059351. |
| (110) F150G | F150-0068 through F150-0219. |
| (111) F150H | F150-0220 through F150-0389. |
| (112) F150J | F150-0390 through F150-0529. |
| (113) F150K | F15000530 through F15000658. |
| (114) F172D | F172-0001 through F172-0065. |
| (115) F172E | F172-0019 through F172-0179. |
| (116) F172F | F172-0086 through F172-0179. |
| (117) F172G | F172-0180 through F172-0319. |
| (118) F172H | F172-0320 through F172-0654 and F17200655 through F17200754. |
| (119) FR172E | FR17200001 through FR17200060. |
| (120) FR172F | FR17200061 through FR17200145. |
| (121) FR172G | FR17200146 through FR17200225. |
| (122) 336 | 633, 636, and 336-0001 through 336-0195. |
| (123) 337 | 647 and 337-0002 through 337-0239. |
| (124) 337A | 337-0240 through 337-0309, 337-0307 through 337-0469, and 337-0471 through 337-0525. |
| (125) 337B | 656, 337-0001, 337-0470, 337-0526 through 337-0568, and 337-0570 through 337-0755. |
| (126) 337C | 337-0756 through 337-0978. |
| (127) 337D | 337-0979 through 337-1193. |
| (128) 337E | 33701194 through 33701316. |
| (129) T337B | 337-0001, 337-0470, 337-0526 through 337-0568, and 337-0570 through 337-0755. |
| (130) T337C | 337-0756 through 337-0978. |
| (131) T337D | 337-0979 through 337-1193. |
| (132) T337E | 33701194 through 33701316. |

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2005-26-10 N
AD NUMBER

# ECi Cylinders

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A NOT - INSTALLED | |
| | | | | |
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**Engine Components Incorporated (ECi):** Amendment 39-14431. Docket No. FAA-2005-22358; Directorate Identifier. 2005-NE-20-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective January 31, 2006.

**Affected Ads**

(b) None.

**Applicability**

(c) This AD applies to Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, parallel valve, reciprocating engines specified in Table 1 of this AD, with Engine Components Inc. (ECi) cylinder assemblies, part number (P/N) AEL65102 series "Classic Cast", with casting P/N AEL65099 and serial numbers (SNs) 1 through 9879, installed.

Table 1 and Table 2 that were in this position have been moved to the bottom of this page and pages 2 & 3 to facilitate compilation of this adNote™

**Unsafe Condition**

(d) This AD results from reports of about 30 failures of the subject cylinder assemblies marketed by ECi. We are issuing this AD to prevent loss of engine power due to cracks in the cylinder assemblies 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.

**Engines Not Repaired or Overhauled Since New**

(f) If your engine has not been overhauled or had any major repair since new, no further action is required.

**Engines Overhauled or Repaired Since New**

(g) If your engine was overhauled or repaired since new, do the following:

(1) Determine if ECi cylinder assemblies, P/N AEL65102 series "Classic Cast", with casting P/N AEL65099 and SNs 1 through 9879 are installed on your engine, as follows:

(i) Inspect the engine log books and maintenance records for reference to the subject ECi cylinder assemblies.

(ii) If the engine log books and maintenance records did not record the P/N and SN of the cylinder assemblies, visually inspect the cylinder assemblies and verify the P/N and SN of the cylinder assemblies.

(2) If the cylinder assemblies are not ECi, P/N AEL65102 series "Classic Cast", with casting P/N AEL65099, no further action is required.

(3) If any cylinder assembly is an ECi P/N AEL65102 series "Classic Cast", with casting P/N AEL65099 and a SN 1 through 9879, do the following:

(i) If the cylinder assembly has fewer than 800 operating hours- in-service (HIS) on the effective date of this AD, replace the cylinder assembly at no later than 800 operating HIS. No action is required until the operating HIS reaches 800 hours.

(ii) If the cylinder assembly has 800 operating HIS or more on the effective date of this AD, replace the cylinder assembly within 60 operating HIS after the effective date of this AD.

**Definition of a Replacement Cylinder Assembly**

(h) For the purpose of this AD, a replacement cylinder assembly is defined as follows:

(1) A serviceable cylinder assembly made by Lycoming Engines.

(2) A serviceable FAA-approved, Parts Manufacturer Approval cylinder assembly from another manufacturer.

(3) A serviceable ECi cylinder assembly, P/N AEL65102 series, "Titan", with casting P/N ABL85009.

(4) A serviceable ECi cylinder assembly, P/N AEL65102 series, with casting P/N AEL65099, that has a SN 9880 or higher.

**Prohibition of Cylinder Assemblies, P/N AEL65102 Series "Classic Cast", With Casting P/N AEL65099 and SNs 1 Through 9879**

(i) After the effective date of this AD, do not install any ECi cylinder assembly, P/N AEL65102, with casting P/N AEL65099 that has a SN 1 through 9879, onto any engine.

**Alternative Methods of Compliance**

(j) 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.

**Related Information**

(k) ECi Service Bulletin No. 05-08, dated September 1, 2005, pertains to the subject of this AD.

Issued in Burlington, Massachusetts, on December 19, 2005.

Peter A. White, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

**Table 1.--Engine Models**

| Cylinder head part number: | Installed on engine models |
|---|---|
| AEL65102–NST04 | O–320–A1B, A2B, A2C, A2D, A3A, A3B, B2B, B2C, B3B, B3C, C2B, C2C, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, F1F, E1J, E2A, E2B, E2C, E2D, E2E, E2F, E2G, E2H, E3D, E3H<br>IO–320–A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, C1B, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B<br>AEIO–320–D1B, D2A, D2B, E1A, E1B, E2B<br>AIO–320–A1A, A1B, A2A, A2B, B1B, C1B<br>LIO–320–B1A |
| AEL65102–NST05 | O–320–C1A, C1F, F1<br>A LIO–320–C1A |
| AEL65102–NST06 | O–320–A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C |
| AEL65102–NST07 | O–320–A2A, B1A, B1B |
| AEL65102–NST08 | O–320–C1A, C1B, C2A, C2B, C1A, C2B, C3C |
| AEL65102–NST10 | O–360–A1A, A1C, A1D, A2A, A2E, A3A, A3D, A4A, C1A, C1C, C1G, C2A, C2B, C2C, C2D, B1A, B1B, B2A, B2B, D1A, D2A, D2B<br>IO–360–B1A, B1B, B1C<br>HO–360–A1A, B1A, B1B<br>HIO–360–B1A, B1B<br>AEIO–360–B1B<br>AEIO–540–A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1C5, B2C5D, B4A5, B4A5D, D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5<br>IO–540–C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4D5, N1A5, N1A5D |
| AEL65102–NST12 | O–360–A1A, A1AD, A1C, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1J, A1LD, A2A, A2D, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4JD, A4K, A4M, A4N, A5AD, B1A, C1A, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, D2A, F1A6, G1A6<br>TIO–360–A1A6D<br>LTO–360–A1A6D<br>IO–360–A1G6D, A1H6, B1B, B1BD, B1D, B1E, B1F, B1F6, B2E, B2F, B2F6, B4A, E1A, E4A, F1A<br>HIO–360–B1A, B1B<br>AEIO–360–B1B, B1D, B1F, B1F6, B1G6, B2F, B2F6, B4A, H1A<br>O–540–A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4B5D, E4C5, G1A5, G1A5D, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D<br>IO–540–C4A5, C4B5, C4B5D, C4D5D, D4A5, D4B5, D4C5, N1A5, T4A5, T4A5D, T4B5D, T4C5D, V4A5D<br>AEIO–540–D4A5, D4B5, D4C5 |
| AEL65102–NST26 | IO–540–J4A5, R1A5<br>TIO–540–C1A, E1A, G1A, H1A |
| AEL65102–NST38 | ETIO–360–F1A<br>TIO–360–AA1AD, AB1AD, C1A, C1AD, AF1A, K1AD<br>LTIO–540–K1AD |
| AEL65102–NST43 | IO–540–J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J3A5, J3A5D, J3C5D<br>TIO–540–L2C5D, W1A5D, W3A5D |
| AEL65102–NST44 | IO–540–L2C5D |

(Continustion of Airworthiness Directive

| Model | Serial number |
|---|---|
| 1) 120 | 6000 through 15075, |
| 2) 140 | 6000 through 15075, |
| 3) 140A | 6000 through 15724, |
| 4) 150 | 117, 17001 through 17999, and 1960017 |
| 5) 150A | 17, 17001 through 17999, and 1960017 |
| 6) 150B | 0626 and 15058019 through 15059350, |
| 7) 150C | 15059351 through 15059760, |
| 8) 150D | 15059761 through 15060087, |
| 9) 150E | 15060088 through 15060772, |
| 10) 150F | 15060956 through 15061633, |
| 11) 150G | 15061633 through 15064533, |
| 12) 150H | 0649 and 15064533 through 15067128, |
| 13) 150J | 15067129 through 15072003, |
| 14) 150K | 18000 through 18729, |
| 15) 150L | 18730 through 19400 and 1960001 through 1960016, |
| 16) 150M | 20267 through 20999 and 1960017 through 1960036, |
| 17) 150N | 21022, 625, 815, 28000 through 28610, 612, 615, 28000 through 28610, |
| 18) 172 | 460001 through 460784, |
| 19) 172A | 0722, 625, and 49755 through 50130 and 17247747 through 17248035, |
| 20) 172B | 17248735 through 17249999, |
| 21) 172C | 17249545 through 17250999, |
| 22) 172D | 0639 and 17250999 through 17251823 through 17251999, |
| 23) 172E | 17251823 through 17252999, |
| 24) 172F | 17252360 through 17253999, |
| 25) 172G | 0638, 17254850 through 17255999, |
| 26) 172H | 17256513 through 17257999, |
| 27) 172I | 17257162 through 17258999, |
| 28) 172K | P1728/120 through P1728/1200, |
| 29) P172D | 0626, 640, 28700A, 8 |
| 30) 175 | 619 and 56239 thro |
| 31) 175A | 17576778 through |
| 32) 175B | 17657003 through |
| 33) 175C | |
| 34) 177 | 0661, 17700001, |
| 35) 177A | 17701165 throu |
| 36) 177B | 17701375 throu |
| 37) 180 | 604, 614, 3052 |
| 38) 180A | 50266 through |
| 39) 180B | 50356 through |
| 40) 180C | 324 and 506 |
| 41) 180D | 180500[illegible] |
| 42) 180E | 180501064 |
| 43) 180F | 180501184 |
| 44) 180G | 180501217 |
| 45) 180H | 180501444 |
| 46) 182 | 613 and |
| 47) 182A | 33843 t |
| 48) 182B | 51555 |
| 49) 182C | 34754 |
| 50) 182D | 5316 |
| 51) 182E | 182 |
| 52) 182F | 18 |
| 53) 182G | 18 |
| 54) 182H | |
| 55) 182J | |
| 56) 182K | |
| 57) 182L | |
| 58) 182M | |
| 59) 182N | |
| 60) 185 | |
| 61) 185A | |
| 62) 185B | |
| 63) 185C | |
| 64) 185D | |
| 65) 185E | |

For information, the subject engines are installed on, but not limited to, the aircraft listed in the following Table 2:

**Table 2.–Engines Installed on, But Not Limited to**

| | |
|---|---|
| O-320-A1A | Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Apache (PA-23), Pawnee (PA-25) Dove Aircraft: Doya-Cessna (170, 170A, 170B) Mooney Aircraft: Mark (20A) Stolp: Rampod (1A-40) Stoneway/Gray Peuker: Flamingo (SGP-M-222) Swearingen: Swizzle (S-19) Twin Helicopter Co.: Spring Bok |
| O-320-A1B | Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Apache (PA-23) Dove Aircraft: Doya-Cessna (170, 170A, 170B) S.O.C.A.T.A.: Horizon (Quebec) |
| O-320-A2A | Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Agricultural (PA-18A "150") Super Cub (PA-18 "150"), Caribbean (PA-22 "150"), Pawnee (PA-25) Aerotechnic Mfg. Co.: Call Air Texan (A-5, A-5T) Lake Aircraft: Colonial (C-1) Rawdon Bros.: Rawdon (T-1, T-1S, T-1SD) Rhein Flugzeugbau: Sholz (2150-A) Stolp: Rampod (1A3-46) Swiss: (1PD-580/2) Teal: Garlick-Horizon (GT-80) LeVanda: Falco (FBL Sarsan II, America) Malmo: Vipan (MF1-10) Engelgau/Smith: Aerosport (SCRM-153) Aero Commander: 100 |
| O-320-A2B | Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Cherokee (PA-28 "150"), Super Cub (PA-18 "150") Champion Aircraft: Challenger (7GCA, 7GCB, 7KC), Citabria (7GCAA, 7GCBC), Agricultura (7GCBA) Bungle: Pup (150) Avia: Interavia S182 Robinson: R-22/Vergi: Kachina 2150A |
| O-320-A2C | Robinson: R-22 Cleary: Cleary AG Bellanca Aircraft: Citabria 150 (7GCAA), Citabria 150S (7GCBC) |
| O-320-A3A | Piper Aircraft: Apache (PA-23) Dove Aircraft: Doya-Cessna (170, 170A, 170B) Carlson-Fenny: Globe Swift (Globe GC-1B) |
| O-320-A3B | Piper Aircraft: Apache (PA-23) Dove Aircraft: Doya-Cessna (170, 170A, 170B) Teal II: TSC (1A2) |
| O-320-B1A | Piper Aircraft: Apache (PA-23 "160") Dove Aircraft: Doya-Cessna (170, 170A, 170B) Malmo: Vipan (MF1-10) |
| O-320-B1B | Piper Aircraft: Apache (PA-23 "160") Dove Aircraft: Doya-Cessna (170, 170A, 170B) |
| O-320-B2A | Piper Aircraft: Tri-Pacer (PA-22 "160", PA-22S "160") Piper Aircraft: Apache (PA-23 "160") Dove Aircraft: Doya-Cessna (170, 170A, 170B) Bungle: Airsubli (D1-160) Fuji-Henry Industries: Fuji (F-200) Stringray: Aerosea 122 Robinson: R-22 Mastic: MX-7-160 |
| O-320-B2B | Piper Aircraft: Apache (PA-23 "160") Dove Aircraft: Doya-Cessna (170, 170A, 170B) Piper Aircraft: Apache (PA-23 "160") Teal Garden (GY80-160) Riley Aircraft: Ranger (Apache) |
| O-320-B2C | Piper Aircraft: Apache (PA-23 "160") Piper Aircraft: Apache (PA-23 "160") Teal: Garden (GY-80) Dyndflug: Spatz Canard Derk: GI15 Stingsby: T67 Firefly |
| O-320-B3B | Piper Aircraft: Cherokee (PA-28S "160") Robin: Major (DR400-140B), Chevalier (DR-360), (R-3140) S.O.C.A.T.A.: Tampico TB9 Stingsby: T67C Firefly Thatcher: MD-3-160 Nash Aircraft Ltd.: Petrel Aviasigle: P60D Delta General Avia: Pegasino |
| O-320-D2B | Bosch Aircraft: Musketeer (M-23) |
| O-320-D2G | Piper Aircraft: Cherokee (PA-28 "160") |
| O-320-E1A | Cessna Aircraft: Skyhawk (172) |
| O-320-E2C | Piper Aircraft: Warrior II, Cadet (PA-28-161) |
| O-320-E3B | Grob: G115 M.B.B. (Messerschmitt-Boelkow-Blohm): Monsun (BO-209-B) |
| O-320-E2A | Piper Aircraft: Cherokee (PA-28 "140", PA-28 "150") Robin: Major (DR-340), Sitar, Bagheera (GY-160-135) S.O.C.A.T.A.: Super Rallye (MS-880), Rallye Commodore (MS-892) Rai-Marchetti: (S-202) P.F.A.: Bravo (AS-202/15) Partnavia: Oscar (P66B), Bucker (131 APM) Aerosmat: Pauliatna P-56 Pezetel: Koliber 150 |
| O-320-E2C | Bosch Aircraft: Musketeer III (M-23III) |
| O-320-E2D | Cessna Aircraft: Cardinal (177) |
| O-320-E3F | M.B.B.: Monsun (BO-209-B) |
| O-320-E3G | Wassmer: Pacific (WA-51) |
| O-320-E3D | American Aerolanes Corp.: Transfer |
| O-320-H2AD | Piper Aircraft: Cherokee (140) Bosch Aircraft: Sport |
| | Cessna Aircraft: Skyhawk 172 Partnavia: P-66C |

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|---|---|
| O-320-B2A | Piper Aircraft: Twin Comanche (PA-30) |
| O-320-B1C | Hi-Shear: Wing |
| O-320-B1D | Teal South Aircraft: Avenger |
| O-320-C1A | Piper Aircraft: Twin Comanche (PA-30) |
| O-320-D1A | M.B.B.: Monsun (BO-209-B) |
| O-320-D1B | M.B.B.: Monsun (BO-209-C) |
| O-320-E1B | Partenavia: Guerrier (P-68) |
| O-320-E2A | Bellanca Aircraft: Coupe |
| O-320-E2B | Champion Aircraft: Citabria |
| O-320-E1A | CAAR Engineering: Cari Maker |
| O-320-B1A | Piper Aircraft: Twin Comanche (PA-30) |
| O-320-C1B | M.B.B.: Monsun (BO-209-C) |
| AIO-320-D1B | Piper Aircraft: Twin Comanche (PA-30) |
| AEIO-320-D1B | Hunderstan Aerospace Ltd.: HT-3 |
| AEIO-320-D2B | Bellanca Aircraft |
| AEIO-320-E1A | Champion Aircraft |
| AEIO-320-E1B | Bellanca Aircraft |
| AEIO-320-E2B | Champion Aircraft: Decathalon (8KCAB-CS) |
| O-320-A1A | Rotec Aircraft: Rider Twin |
| O-360-A1A | Piper Aircraft: Travel Air (95, B-95) |
| O-360-A1AD | Piper Aircraft: Comanche (PA-24) |
| O-360-A1B6 | Intermountain Mfg. Co.: Call Air (A-4) |
| O-360-E1A | Lake Aircraft: Colonial (C-2) LA (A-4 or 4P) |
| O-360-L2A | Dove Aircraft: Doya-Cessna (170B, 172, 172A, 172B) |
| O-360-M1A | Mooney Aircraft: Mark "20B"(M-20B, 172, 172A, 172B) |
| O-360-M1B | Earl Horton: Pawnee (Piper PA-25) |
| AIO-360-B1B | Diesla: Rampod (1A-51) |
| AEIO-360-B1F | Kevis: (1PD-590/1) |
| AEIO-360-B1G6 | Regent: (N-5901) |
| AEIO-360-B2F | Wassmer: Super 4 (WA-36A), Sisny (WA-40), Baladu (WA-41) |
| AEIO-360-B4A | Piel: Parion (WA-40) |
| AEIO-360-H1A | Teal: Cardan (GY-180) |
| AEIO-360-H1B | Hollow: (207) |
| TO-360-C1A6D | Partenavia: Oscar (P-66) |
| TO-360-F1A6D | Rai-Marchetti: (S-205) Procaer: Picchio (P-15-A) |
| TIO-360-C1A6D | S.A.B.: Safir (3I-D) |
| VO-360-A1A | Malmo: Vipan (MF-10B) |
| VO-360-A1B | Aero Boero: AB-180 |
| VO-360-B1A | Beagle: Airedale (A-109) |
| VO-360-A1A | DeHavilland: Dromer (DHA-3M3C) |
| HO-360-B1A | Hampford-Smith: Buckmaster (15-6) |
| HO-360-B1B | Aero Engine Service Ltd.: Vega (B-2) |
| HO-360-C1A | S.O.C.A.T.A.: Tabago TB-10 |
| HIO-360-D1A | Piper Aircraft: Comanche (PA-24) |
| HIO-360-D1B | Lake Aircraft: Colonial (LA-4A or 4P) |
| HIO-360-G1A | Doyn Aircraft: Doyn-Schoch (Bosch 95) |
| O-540-A1A | Mooney Aircraft: Master "21"(M-20E), Mark "20B", "20D", M20D, M20C), Mooney Statesman (M-20G) |
| O-540-A1A5 | Wassmer: (WA-50) |
| O-540-A1B3 | Malmo: Vipan (MF1-10) |
| O-540-A1C3 | Cessna Aircraft: Skyhawk |
| O-540-A1D | Doyn Aircraft: Doyn-Piper (PA-22 "160") |
| O-540-A1D5 | Cessna Aircraft: Cardinal |
| O-540-A2B | Teal II: TSC (1A3) |
| | Aero Commander |
| | Bosch Aircraft: Duchess 76 |
| | Wassmer: Europa WA-53 |
| | Avtat: Husky |
| | Canter Est Aeronautique: Regentic (DR-253) |
| | S.O.C.A.T.A.: Rallye Commodore (MS-893) |
| | Societe Aeronautique Normande: Mousquetaire (D-140) |
| | Bolkow: Klemm (Kl-107C) |
| | Partenavia: Oscar (P-66) |
| | Beagle: Husky (D5-180) (1I-U) |
| | Piper Aircraft: Comanches (PA-24), Cherokee "C"(PA-28 "180") |
| | Mooney Aircraft: Master "21"(M-20D), Mark "21"(M-20E) |
| | Bid: Helicopter |
| | Aero Commander: |
| | Cessna Aircraft: Cardinal |
| | Bosch Aircraft: Sport |
| | C.A.A.R.P.S.A.N.: (M-23III) |
| | Societe Aeronautique Normande: Jodel (D-146C) |
| | Robin: Regent (DR400/180), Remorqueur (DR400/180R), R-2170 |
| | S.O.C.A.T.A.: Rallye 180GT, Sportavia Sportsman (RS-180) |
| | Norman Aeroplace Co.: NAC-1 Freelance |
| | Nash Aircraft Ltd.: Petrel |
| | S.O.C.A.T.A.: TB-10 |
| | Robin: Aiglon (R-1180T) |
| | Piper Aircraft: Cherokee "D"(PA-28 "180") |
| | Varga: Kachina |
| | Bosch Aircraft: Musketeer Custom III |
| | Grumman American: Tiger |
| | Grumman American: Tiger |
| | Piper Aircraft: Sundowner 180 |
| | Valmet: PIK-23 |
| | Cessna Aircraft: 172 (Optional) |
| | Penn Yan: Super Cub Conversion |
| | C. Itoh and Co.: Fuji FA-200 |
| | Seabird Aviation: SB7L |
| | Intermountain Mfg. Co.: Call Air (A-6) |
| | Bellanca Aircraft: Scout (8GCBC-CS) |
| | Maule: Star Rocket MX-7-180 |
| | Christen: Husky (A-1) |

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|---|---|
| O-360-C2D | Hughes Tool Co.: (260A) |
| O-360-C2G | Hughes Tool Co.: (300A) |
| O-360-C2E | Hughes Tool Co.: (YHO-2HJ) Military Bellanca Aircraft: Scout (8GCBC FP) |
| O-360-C4F | Maule: MX-7-180A |
| O-360-C4P | Penn Yan: Super Cub Conversion |
| O-360-C4P | Piper Aircraft: Seminole (PA-44 "180") |
| O-360-E1A6D | Cessna Aircraft: Cutlass RG |
| O-360-F1A6 | Robinson: R22 |
| O-360-J2A | Bosch Aircraft: Travel-Air (B-95A) |
| O-360-B1A | Bosch Aircraft: Travel-Air (B-95B) |
| O-360-B1B | Doyn Aircraft: Doyn-Piper (PA-23 "200") Fuji: (PA-200) |
| O-360-B1D | United Consultancy: Sao Bus |
| O-360-B1E | Piper Aircraft: Arrow (PA-28 "180R") |
| O-360-B1F | Dyn: 75 |
| O-360-B1F6 | S.A.A.R.P. C.A.P. (1f) |
| O-360-B1G6 | Great Lakes: Trainer |
| O-360-B1F6 | American Blanp: Injector 42 |
| O-360-A1G6D | Great Lakes: Trainer |
| O-360-A1B6 | Bosch Aircraft: Duchess |
| O-360-E1A | Piper Aircraft: Seminole (PA-44) |
| O-360-L2A | T. R. Smith Aircraft: Aircoutar |
| O-360-M1A | Cessna Aircraft: Skyhawk C-172 |
| O-360-M1B | Diamond Aircraft: DA-40 |
| AIO-360-B1B | Vans Aircraft: RV8, RV7, RV8 |
| AEIO-360-B1B | Lancair: 360 |
| AEIO-360-B1F | Moravzev: Zlin (Z-526-L) |
| AEIO-360-B1G6 | F.F.A.: Bravo (266) |
| AEIO-360-M6-B1F | Grob: G115/Sport-Aero |
| AEIO-360-B4A | Great Lakes |
| AEIO-360-H1A | Meaudey: CAP-10 |
| AEIO-360-H1B | Pitts: S-1S |
| TO-360-C1A6D | Bellanca Aircraft: Super Decathalon (8KCAB-180) |
| TO-360-F1A6D | American Champion: Super Decathalon |
| TIO-360-C1A6D | Aviens Pierre Robin |
| VO-360-A1A | Partenavia |
| VO-360-A1B | Rockwell: 112TC |
| VO-360-B1A | Mastic Star Rocket (M-5-210TC) |
| VO-360-A1A | Parisnavio: P68C-TC |
| HO-360-B1A | Brantly Hynes Helicopter: (B-2) |
| HO-360-B1B | Brantly Hynes Helicopter: (B-2, B2-A): Military (YHO-3HA) |
| HO-360-C1A | Brantly Hynes Helicopter: (B-2, B2-A) |
| HIO-360-D1A | Brantly Hynes Helicopter (B2-B) |
| HIO-360-D1B | Hughes Tool Co.: (269A) |
| HIO-360-G1A | Hughes Tool Co.: (269A) |
| O-540-A1A | Hughes Tool Co.: (269A) |
| O-540-A1A5 | Schweizer: (300C) |
| O-540-A1B3 | Hughes Tool Co.: (269A) |
| O-540-A1C3 | Hughes Tool Co.: Military (269-A-1): (TH-55A) |
| O-540-A1D | Schweizer: (CB) |
| O-540-A1D5 | Rhein-Flugzeugbau: (RF-1) |
| O-540-A2B | Piper Aircraft: Comanche (PA-24 "150") Helio: Military (H-250) Yeoman Aviation: (YA-1) |
| | Piper Aircraft: Aztec (PA-23 "250"), Comanche (PA-24 "250") |
| | Piper Aircraft: Comanche (PA-24 "250") |
| | Found Bros.: (PBA-3C) |
| | Dornier: (DO-28-B1) |
| | Piper Aircraft: Aztec (PA-23 "250"), Comanche (PA-24 "250"), Military Aztec (U-11A) Dornier: (DO-28) |
| | Aero Commander: (500) |
| | Mid-States Mfg. Co.: Twin Courier (H-500), (U-5) |

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| O-540-A3D5 | Piper Aircraft: Navy Aztec (PA-23 "250") |
| O-540-B1A5 | Piper Aircraft: Apache (PA-23 "235") |
| O-540-B1B5 | Piper Aircraft: Cherokee (PA-28 "250") |
| O-540-B1D5 | Dove Aircraft: Doya-Piper (PA-24 "250") Wassmer: (WA-421) |
| O-540-B2B5 | Piper Aircraft: Pawnee (PA-24 "235"), Cherokee (PA-28 "235") Aztec (PA-23 "235") Interconnector Mfg. Co.: Call Air (A-9) Rawdon Bros.: Rawdon (T-1) S.O.C.A.T.A.: Rallye 235C-L |
| O-540-B2C5 | Piper Aircraft: Pawnee (PA-24 "235") |
| O-540-B4B5 | Piper Aircraft: Cherokee (PA-28 "235") Embraer: Corsura (EMB-710) S.O.C.A.T.A.: Rallye 235GT, Rallye 235C Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235) |
| O-540-B4A5 | Piper Aircraft: Comanche (PA-24 "260") Aviamilanec: Flamingo (F-250) Rai-Marchetti: (SF-260), (SF-208) Britten-Normen: (BN-2) |
| O-540-E4B5 | Piper Aircraft: Cherokee Six (PA-32 "260") |
| O-540-E4C5 | Pilatus Britten-Normen: Islander (BN-2A-26), Islander (BN-2A-27), Islander II (BN-2B-26), Islander (BN-2A-21), Trislander (BN-2A-Mach III-3) |
| O-540-F1B5 | Orenga Aircraft: (BS-12D1) Robinson: (R-44) Piper Aircraft: Pawnee (PA-25 "260") |
| O-540-G1A5 | Aero Boero: 260 |
| O-540-H1B5D | Embraer: Impanema "AG" |
| O-540-H2A5 | Gippsland: GA-200 |
| O-540-H2B5D | Aero Boero: 260 |
| O-540-J1A5D | Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235) |
| O-540-J3A5 | Robin: R-3000/235 |
| O-540-J3A5D | Piper Aircraft: Dakota (PA-28-236) |
| O-540-J3C5 | Cessna Aircraft: Skylane RG |
| O-540-J3C5D | Cessna Aircraft: TR-182, Turbo Skylane RG |
| O-540-J3C5D | Piper Aircraft: Aztec B (PA-23 "250"), Comanche (PA-24 "250") |
| IO-540-C1B5 | Riley Aircraft: Turbo-Rocket |
| IO-540-C1C5 | Piper Aircraft: Aztec C (PA-23 "250"), Aztec F Wassmer: (WA4-21) Aviens Pierre Robin: (HR100/250) Bellanca Aircraft: Aries T-250 Aerofab: Renegade 250 |
| IO-540-C4B5 | S.O.C.A.T.A.: TB-20 |
| IO-540-C4D5 | S.O.C.A.T.A.: Trinidad TB-20 |
| IO-540-C4D5D | Piper Aircraft: Comanche (PA-24 "260") |
| IO-540-D4A5 | Rai-Marchetti: (SF-260) |
| IO-540-D4B5 | Cavva: (CE-43 Ourpearl) |
| IO-540-J3A5 | Piper Aircraft: Aztec (PA-23 "250") |
| IO-540-J3A5 | Piper Aircraft: Comanche (PA-24) |
| IO-540-R1A5 | General Aviation: Model 114 |
| IO-540-T4A5D | Commander: 114B |
| IO-540-T4B5 | Rockwell: 114 |
| IO-540-T4B5D | Lake Aircraft: Seawolf |
| IO-540-T4C5D | Maule: MT-7-260, M-7-260 |
| IO-540-V4A5 | Aircraft Manufacturing Factory: Brocklands: Skeetmaster |
| IO-540-V4A5D | Maule: MX-7-235, MT-7-235, M7-235 |
| IO-540-W1A5 | Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235) |
| IO-540-W1A5D | Schweizer: Power Glider |
| AEIO-540-D4A5 | Christen: Pitts (S-2S), S-2B) Rai-Marchetti: SF-260 H.A.L.: HPT-32 |
| AEIO-540-D4B5 | Stingsby: Firefly T3A Moravzev: Zlin-50L H.A.L.: HPT-32 |
| aEIO-540-D4D5 | Burkhart Grob: Grob G. 115T Aero |
| TIO-540-C1A | Piper Aircraft: Turbo Aztec (PA-23-250) Piper Aircraft |
| TIO-540-K1AD | Aerofab Inc.: Turbo Renegade (270) |
| TIO-540-AA1AD | S.O.C.A.T.A.: Trinidad TC TB-21 |
| TIO-540-AB1AD | Schweizer |
| TIO-540-AB1BD | Mooney Aircraft: "TLS"M20M |
| TIO-540-AF1A | Mooney Aircraft: "TLS"M20M |
| TIO-540-AF1B | Commander Aircraft: 114TC |
| TIO-540-AG1A | Cessna Aircraft: Turbo Skylane T182T |
| TIO-540-AK1A | Piper Aircraft |
| aTIO-540-K1AD | |





AD's SECURING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES, OP

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2006-3-8 N/M
AD NUMBER

# Aero Advantage Vac. Pump

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

Mfg./ Part No.:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
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Amendment 39-14472; Docket No. FAA-2005- 20440; Directorate Identifier 2005-CE-05-AD.

**When Does This AD Become Effective?**

(a) This AD becomes effective on March 10, 2006.

**What Other ADs Are Affected by This Action?**

(b) None.

**What Airplanes Are Affected by This AD?**

(c) This AD affects ADV200 series (part numbers (P/Nx) ADV211CC and ADV212CW) vacuum pumps installed on, but not limited to, the following aircraft that are certificated in any category. These vacuum pumps can be installed under supplemental type certificate number SA10126SC, through field approval, or other methods:

| Make | Model |
|---|---|
| Alexandria Aircraft, LLC | 14–19, 14–19–3, 14–19–3, 17–30, 17–31, 17–31TC, 17–30A, 17–31A, and 17–31ATC |
| Alliance Aircraft Group, LLC | 31–295 (USAF U10D) |
| American Champion Aircraft Corp | 7AC, 7ECA, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBC, 7HC, 7KC, 7KCAB, 8GCBC, and 8KCAB |
| Cessna Aircraft Company, The | 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H, 172I, 172K, 172L, 172M, 172N, 172P, 172Q; 182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M; 182N, 182P, 182Q, 182R, R182, T182, TR182, 172RG, R172E, R172F, R172H, R1722, 152, A152, 210, 210–5 (205), 210–5A (205A), 210A, 210B, 210C, 210D, 210E, 210F, 210G, 210H, 210I, 210K, 210L, 210M, 210N, P210N, T210G, T210H, T210M, T210N, T210R, 185, 185A, 185B, 185C, 185D, 185E, 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 120, 140, 170, 170A, 170B, 177, 177A, 177B, 207, 207A, T207, T207A, 177RG, 206, P206, P206A, P206B, P206C, P206D, P206E, TP206A, TP206B, TP206C, TP206D, TP206E, TU206A, TU206B, TU206C, TU206D, TU206E, TU206F, TU206G, U206, U206A, U206B, U206C, U206D, U206E, U206F, U206G; 188, 188A, 188B, A188, A188A, and A188B |
| Commander Aircraft Company | 112, 112B, 112TC, 114, and 114A |
| Dynac Aerospace Corporation | Aero Commander 100 |
| Global Amphibians, LLC | Lake LA–4–200, Lake Model 250 |
| Maule Aerospace Technology, Inc. | M–4–210, M–4–220, M–5–180C, M–5–200, M–5–210C, M–6–180, and M–6–235 |
| Mooney Aircraft Corporation | M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20M, and M22 |
| Navion Aircraft Company, Ltd. | Navion G and Navion H |
| Piper Aircraft, Inc., The New | PA–23, PA–23–160, PA–23–235, PA–23–250 (Navy UO–1), PA–E23–250, PA–24, PA–24–250, PA–24–260, PA–18, PA–18–105 (Special), PA–18–135, PA–18–150, PA–20–115, PA–20–135, PA–22–108, PA–22–135, PA–22–150, PA–22–160, PA–25, PA–25–235, PA–25–260, PA–28–140, PA–28–150, PA–28–151, PA–28–160, PA–28–161, PA–28–180, PA–28–181, PA–28–201T, PA–28–235, PA–28–236, PA–28R–180, PA–28R–200, PA–28R–201, PA–28R–201T, PA–28RT–201, PA–28RT–201T, PA–23, PA–25–235, PA–25–260, 15A–80, 15A (Army L–4F), J5B (Army L–4G), J5C, PA–12, PA–36–285, PA–36–300, PA–36–375, PA–38–112, PA–38, PA–39, PA–40, PA–31, PA–31–300, PA–31–325, PA–31–350, PA–32–260, PA–32–300, PA–32–301, PA–32–301T, PA–32R–300, PA–32R–301 (HP), PA–32R–301T, PA–32RT–300T, PA–31P, and PA–36–300 |
| Raytheon Aircraft Company | 35–33, 35–A33, 35–B33, 35–C33, 35–C33A, 36, A36, A36TC, B36TC, E33, E33A, E33C, F33, F33A, F33C, G33, H35, J35, V35, V35A, V35B, D45 (Military T–34B), 35, 35R, A35, B35, C35, D35, E35, F35, G35, 19A, 23, A23, A23A, A24, A24R, B19, B23, B24R, C23, and C24R |
| Rogers, Burl A. | 15AC and 515AC |
| SOCATA—Groupe Aerospatiale | MS 885, MS 892A–150, MS 892E–150, MS 893A, MS 893E, Rallye 150 ST, Rallye 150 T, TB 10, TB 20, and TB 9 |
| Tiger Aircraft LLC | AA–1, AA–1A, AA–1B, AA–1C, AA–5, AA–5A, and AA–5B |

**What Is the Unsafe Condition Presented in This AD?**

(d) This AD is the result of several reports of pump chamber failure. The actions specified in this AD are intended to prevent the vacuum pump failure or malfunction during instrument flight rules (IFR) flight that could lead to loss of flight instruments critical for flight. The loss of flight instruments could cause pilot disorientation and loss of control of the aircraft.

(Over)

AD RECEIVING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES ON

(Continuation of Airworthiness Directive 2006-03-08)

**What Must I Do To Address This Problem?**

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

| Actions | Compliance | Procedures |
|---|---|---|
| (1) Remove from service any Aero Advantage ADV200 series (P/Ns ADV211CC and ADV212CW) vacuum pump. | Within 100 hours time-in-service (TIS) or the next 12 calendar months after March 10, 2006 (the effective date of this AD), whichever occurs first, unless already done. | Not Applicable. |
| (2) Install an FAA-approved vacuum pump that is not an Aero Advantage ADV200 series | Prior to further flight after removing any Aero Advantage ADV200 series vacuum pump. | Not Applicable. |
| (3) If you choose not to utilize the Aero Advantage vacuum pump monitoring system per STC SA10126SC, then do the following:<br>(i) Remove the Airplane Flight Manual Supplement (AFMS) for STC SA10126SC and the placard for the vacuum pump monitoring system.<br>(ii) Complete the appropriate logbook entry and Form 337 to show that the airplane is no longer equipped with STC SA10126SC. | Prior to further flight after removing any Aero Advantage ADV200 series vacuum pump. | Not Applicable. |
| (4) If you choose to utilize the Aero Advantage vacuum pump monitoring system per STC SA10126SC, then do the following:<br>(i) Connect the replacement vacuum pump to the vacuum pump monitoring system.<br>(ii) Make the following notation to the front of the AFMS for STC SA10126SC: "The Aero Advantage vacuum pump was removed to comply with AD 2005-**-**, and this AFMS now gives instructions for the operation of the vacuum pump monitoring system with a replacement vacuum pump."<br>(iii) Attach a copy of the Phoenix Group Service Bulletin No. 05–01, dated November 22, 2005, to the AFMS for STC SA10126SC. | Prior to further flight after removing any Aero Advantage ADV200 series vacuum pump. | Connect the vacuum pump monitoring system with the procedures in Phoenix Group, Service Bulletin No. 05–01, dated November 22, 2005. |
| (5) Do not install any Aero Advantage ADV200 series (P/Ns ADV211CC and ADV212CW) vacuum pump. | As of March 10, 2006 (the effective date of this AD). | Not Applicable. |

**May I Request an Alternative Method of Compliance?**

(f) The Manager, Special Certification Office, Rotorcraft Directorate, FAA, has the authority to approve alternative methods of compliance for this AD, if requested using the procedures found in 14 CFR 39.19. For information on any already approved alternative methods of compliance, contact Peter Hakala, Aerospace Engineer, Special Certification Office, Rotorcraft Directorate, FAA, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0190; telephone: (817) 222-5145; facsimile: (817) 222-5785.

**May I Get Copies of the Document Referenced in This AD?**

(g) If you choose to utilize the vacuum pump monitoring system, you must connect the replacement vacuum pump with the instructions in Phoenix Group, Service Bulletin No. 05-01, dated November 22, 2005. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To get a copy of this service information, contact Phoenix Group, 9608 Taxiway Dr., Granbury, TX 76049; e-mail: phoenixgroup2@yahoo.com. To review copies of this service information, go to the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html or call (202) 741-6030. To view the AD docket, go to the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-001 or on the Internet at http://dms.dot.gov. The docket number is FAA-200520440; Directorate Identifier 2005-CE-05-AD.

Issued in Kansas City, Missouri, on January 26, 2006.

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

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2006-6-16 N
AD NUMBER

## Lycoming Engine

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A BY DATE OF ENGINE MAN. | |
| | | | | |
| | | | | |
| | | | | |

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**Lycoming Engines** (Formerly Textron Lycoming): Amendment 39-14525, Docket No. FAA-2005-23269; Directorate Identifier 2005-NE- 50-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective April 27, 2006.

**Affected Ads**

(b) None.

**Applicability**

(c) This AD applies to Lycoming Engines **AEIO-360, IO-360, O-360, LIO-360, and LO-360** series reciprocating engines, manufactured new or rebuilt, overhauled, or that had a crankshaft installed after March 1, 1999. These engines are installed on, but not limited to, the following aircraft:

*Aerotech Note: The table that was in this position has been moved to the reverse side to facilitate compilation of this* **adNote™**.

**Unsafe Condition**

(d) This AD results from a crankshaft failure in a Lycoming LO- 360-A1H6 reciprocating engine. We are issuing this AD to prevent failure of the crankshaft, which could result in total engine power loss, in-flight engine failure, and possible loss of the aircraft.

**Compliance**

(e) You are responsible for having the actions required by this AD performed within 50 hours time-in-service or 6 months after the effective date of this AD, whichever is earlier, unless the actions have already been done.

(f) If Lycoming Engines manufactured new, rebuilt, overhauled, or replaced the crankshaft in your engine before March 1, 1999, and you haven't had the crankshaft replaced, no further action is required.

(g) If Table 1 of Supplement No. 1 to Lycoming Mandatory Service Bulletin (MSB) No. 566, dated November 30, 2005, lists your engine serial number (SN), use Table 2 of Supplement No. 1 to verify if your crankshaft SN is listed.

(h) If Table 1 of Supplement No. 1 to Lycoming MSB No. 566, dated November 30, 2005, does not list your engine SN, use Table 2 of Supplement No. 1 to verify if your crankshaft SN is listed, if an affected crankshaft was installed as a replacement.

(i) If Table 2 of Supplement No. 1 to Lycoming Engines MSB No. 566, dated November 30, 2005, lists your crankshaft SN, replace the crankshaft with a crankshaft that is not listed in Table 2 of Supplement No. 1 to Lycoming MSB No. 566, dated July 11, 2005.

(j) The engine and crankshaft SNs listed in Table 1 and Table 2 of Supplement No.1 to Lycoming Engines MSB No. 566 are different from the engine and crankshaft SNs affected by Lycoming MSBs No. 552, No. 553 and No. 566; and ADs 2002-19-03 and 2005-19-11.

**Prohibition Against Installing Certain Crankshafts**

(k) After the effective date of this AD, do not install any crankshaft that has a SN listed in Table 2 of Supplement No. 1 to Lycoming MSB No. 566, dated November 30, 2005, into any engine.

**Alternative Methods of Compliance**

(l) The Manager, New York Aircraft 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.

**Related Information**

(m) None.

**Material Incorporated by Reference**

(n) You must use Lycoming Engines Supplement No. 1 to Mandatory Service Bulletin No. 566, dated November 30, 2005, to perform the crankshaft replacements required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Lycoming, 652 Oliver Street, Williamsport, PA 17701; telephone (570) 323-6181; fax (570) 327-7101, or go on the Internet at http://www.Lycoming.Textron.com for a copy of this service information. You may review copies at the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-0001, on the Internet at http://dms.dot.gov, 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/cfr/ibr-locations.html .

Issued in Burlington, Massachusetts, on March 15, 2006.

Peter A. White, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

(Over)☛

AD'S REQUIRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES OR

Table from paragraph "C" of previous page

| Engine model | Manufacturer | Aircraft model |
|---|---|---|
| AEIO–360–A1B6 | Moravan | Z242L Zlin |
| | Scottish Avia | Bulldog |
| | Valmet | L–70 Vinka |
| AEIO–360–A1E6 | Integrated Systems | Omega |
| IO–360–A1B6 | Aircraft Manufacturing Factory | Mushshak |
| | Beech | C–24R Sierra or 200 Sierra |
| | Cessna | R–G Cardinal |
| | Korean Air | Chang Gong–91 |
| | Lake | LA–4–200 Buccaneer |
| | Mooney | M–20–J |
| | Partenavia | P–68 Series Observer |
| | Saab | MFI–15 Safari or MFI–17 Supporter |
| | Scottish Avia | Bulldog |
| | Socata | TB–200 |
| IO–360–A1B6D | Cessna | R–G Cardinal |
| | Mooney | M–201 |
| | Siai Marchetti | S–205 |
| IO–360–A3B6 | Mooney | M–201 |
| | Mod Works | Trophy 212 Conversion |
| IO–360–A3B6D | Mooney | M20J–201 |
| IO–360–C1C6 | Piper | PA–28R–201 |
| | Ruschmeyer | Arrow MF–85 |
| IO–360–B1G6 | American | Blimp |
| | Zeppelin | Blimp |
| IO–360–C1G6 | Piper | PA–34–200 Seneca I |
| IO–360–C1E6 | Piper | 76 Duchess |
| LO–360–A1G6D | Beech | PA–44–180 Seminole |
| LO–360–A1H6 | Piper | 177 Cardinal |
| O–360–A1F6 | Cessna | 177 Cardinal |
| O–360–A1F6D | Cessna | 76 Duchess |
| O–360–A1G6D | Beech | PA–44–180 |
| O–360–A1H6 | Piper | PA–44–180 |
| O–360–E1A6D | Piper | C–172RG Cutlass RG |
| O–360–F1A6 | Cessna | |
| IO–360–C1D6 | Sold as a spare engine. | |
| LIO–360–C1E6 | Sold as a spare engine. | |
| LO–360–E1A6d | Sold as a spare engine. | |
| LIO–360–C1D6 | Sold as a spare engine. | |

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

2006-10-21 N/M
AD NUMBER

## ECi Connecting Rods

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A NOT INSTALLED (ECi CONNECTING RODS INSTALLED) | |

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**Engine Components Incorporated (ECi)**: Amendment 39-14604. Docket No. FAA-2005-21331; Directorate Identifier 2005-NE-07-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective June 22, 2006.

**Affected Ads**

(b) None.

**Applicability**

**Table 1.—Engine Models**

| Engine models |
|---|
| O–360–A1A, A1AD, A1C, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1LD, A1P, A2A, A2D, A2E, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4K, A4M, A4N, A4P, A5AD, B1A, B1B, B2A, B2B, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D1A, D2A, D2B, F1A6, G1A6, J2A; |
| HO–360–A1A, B1A, B1B, C1A; |
| IO–360–B1A, B1B, B1C, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, F1A, L2A; |
| LO–360–A1G6D, A1H6; |
| HIO–360–A1A, A1B, B1A, B1B; |
| AEIO–360–B1B, B1D, B1F, B1F6, B1G6, B2F, B2F6, B4A, H1A, H1B; |
| O–540–A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B4A5, B4B5, D1A5, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5, H1A5, H1A5D, H1B5D, H2A5, H2A5D, H2B5D; |
| AEIO–540–D4A5, D4B5, D4C5, D4D5; |
| IO–540–A1A5, B1A5, B1B5, B1C5, C1B5, C1C5, C2C, C4B5, C4C5, C4D5, C4D5D, D4A5, D4B5, D4C5, E1A5, E1B5, E1C5, G1A5, G1B5, G1C5, G1D5, G1E5, G1F5, J4A5, N1A5, P1A5, R1A5, T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D; |
| LTIO–540–K1AD; |
| TIO–540–C1A, E1A, G1A, H1A, K1AD, AA1AD, AB1AD, AB1BD, AF1A, AF1B, AG1A. |

These engines are installed on, but not limited to, the aircraft listed in Table 2 of this AD.

*Aerotech Note: Table 2 that was in this position in the FAA's version of this AD has been moved to the reverse side of this adNote™ to facilitate compilation.*

**Unsafe Condition**

(d) This AD results from reports of connecting rods with excessive variation in circularity of the journal bores. We are issuing this AD to prevent fatigue failure of the connecting rod and possible uncommanded shutdown of the engine.

**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.

**Engines Not Repaired or Overhauled Since New**

(f) If your engine has not been overhauled or had any repair since new, no further action is required.

**Engines Overhauled or Repaired Since New**

(g) If your engine was overhauled or repaired since new, do the following:

(1) Before further flight inspect the maintenance records and engine logbook to determine if the overhaul or repair facility used ECi connecting rods, P/N AEL11750.

(2) If the connecting rods are not ECi, P/N AEL11750, no further action is required.

(3) If the connecting rods are ECi, P/N AEL11750, and if the serial number is 54/7 or higher, no further action is required. (Note: 54 is the lot number and 7 is the serial number of the ECi connecting rod.)

(4) If the connecting rods are ECi, P/N AEL11750, having forging P/N AEL11488 in raised letters on the web of the beam, and if the serial number is 54/6 or lower, do the following:

(i) If the connecting rod has 2,000 or more hours time-in- service (TIS), replace the connecting rod with a connecting rod that has a lot number 55 or higher, or that has a P/N not specified in this AD, within 50 hours TIS after the effective date of this AD.

(ii) If the connecting rod has fewer than 2,000 hours TIS, replace the connecting rod with a connecting rod that has a lot number 55 or higher, or that has a P/N not specified in this AD, at the next engine overhaul, or next accessibility of the connecting rod, but no later than 2,000 hours TIS on the connecting rod.

(iii) For the purpose of this AD, connecting rod accessibility is defined as any maintenance action in which a cylinder assembly is removed for maintenance.

(h) After the effective date of this AD, do not install any ECi connecting rod, P/N AEL11750, that has SN 54/6 or lower into any engine.

**Alternative Methods of Compliance**

(i) 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.

**Related Information**

(j) None.

**Material Incorporated by Reference**

(k) None.

Issued in Burlington, Massachusetts, on May 12, 2006.

Thomas A. Boudreau, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

**CORRECTION:** There is a typo in the Amendment number of AD 2006-10-21, published in the Federal Register (FR), May 18, 2006, page 28769, column one, and page 28771, column three. The amendment number should be "39-14604". We will issue a correction to the FR. We have corrected this copy.

AD'S REQUIRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES OR

(Continuation of Airworthiness Directive 2006-10-21)

**Table 2.--Aircraft Models**

| Aircraft manufacturer | Aircraft model |
|---|---|
| Aero Boero | AB-180, AB-200 |
| Aero Commander | Lark (100), Aero Commander (500, 500-B, 500-E, 500-U) |
| Aero Engine Service Ltd | Cosmo (S-2) |
| Aerofly Inc | Renegade 270, Turbo Renegade (270) |
| Aerostar | Renegade (T-250) |
| Air Tractor | Thrush (T-250) |
| Alpha Aircraft | Thrush |
| Amsterdam | DHC (100/250) |
| Avtec | Nanchang (A-100), Husky (D5-180/E0-A3) |
| Avtech Pilatus Bohn | Aerobat (A-100), Husky (D5-180/E0-A3) |
| Beagle | Super Decathlon (8KCAB-180), Aztec T-250 |
| Beechcraft Aircraft | 207 Skywagon (A7-207A) |
| Bellanca Aircraft | 8KCAB, 8GCBC-CS, 8GCBC FP, Super Decathlon (8KCAB-180), Aztec T-250 |
| Bellview | 207 Skywagon |
| Bolkow, Nicholas | BN-2 |
| Brantly | S.A.N. (M-2300), C.A.P. (10) |
| Britchlands | Typ FA-200 |
| C.A.R.F. | Regente (DR-253) |
| Cessna Aircraft | TC-40 (Dusgard) |
| Classic Aircraft | Cardinal C-177A and C-177B, Turbo III, TSC (1A3), Skyhawk RG, and C-172RG, Cutlass C-172Q |
| Colt | Husky (A-1), Chevron, Pitts (S-2S), (S-2B) |
| Dehler-Bond | Tornado (DHA-3MR-3), Heron Conversion |
| Dynam | Regent (DA-51), Quorum II (LR-45) |
| Dyn'Aero | Rangtel (DA-51), Quorum II (LR-45) |
| Embraer | TEC-28, DEC-28-B1, DEC-B-B1) |
| Enstrom | Turbo-Cessna (T206, T22, T27A, T27B) |
| Evans Aircraft | Twin-Bonch (Bonch 95) |
| Evans Aircraft | Twin-Piper (PA-23 "160", PA-23 "200", PA-24 "250", PA-23 "250") |
| Evans Aircraft | Panamac (Piper PA-23) |
| Fuji Heavies | Carioca (EMB-710), Impanema "AG" |
| Gafowater | Pawnee (200) |
| G A | GBA-2C), Cheetomail (100) |
| Grand Rivet | IFA-200) |
| Grumman | Model 114 |
| GU | AA-200 |
| Gyroplane Aviation | Trainer |
| Gyroplane | GU115/Sport-Aero |
| Hiller Labs | HPT-32 |
| Hirth | 2004, 200-A-1, YHO-2HU, 300) |
| H.A.I. | Cub Air (A-6, A-6 IARS21, IAR-822, IAR-826, IAR-821) |
| Hughes Tool Co | Bushmaster (O-6) |
| Interstate Mfg Co | Colonial (C-2, LA-4, 4A or 4P), Seawolf |
| Kingsford-Smith | Vigen (MF-10B, MF1-10) |
| Lake Aircraft | Star Rocket MX-7-180, MX-7-180A, Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235). |
| Maule | Twin Courier (M-500), (U-5) |
| Mid States Mfg. Co | Master "21"(M-20D, M-20E), Mark "20B", "20D", (M20B, M20C), Statesman (M-20G), Mark "21"(M-20E), "TLS"M20M. |
| Mooney Aircraft | Zip-500 |
| Morgan | CAP-10 |
| Moseley | Pawnee |
| Nash Aircraft Ltd | LPD-390V |
| Navion | NAC-1 Freelance |
| Norman Aeroplane Co | BN-2/2D1 |
| Osoppa Aircraft | Oscar (P-66) |
| Partenavia | Super Cub Conversion |
| Piper Yan | Islander (BN-2A-26), Islander (BN-2A-27, Islander B (BN-2B-26), Islander (BN-2A-21), Trislander (BN-2A-Mark III-2) |
| Pilatus Britten-Norman | |
| Piper Aircraft | Comanche (PA-24), Semanole (PA-44), Cherokee "C"(PA-28 "180"), Cherokee "D"(PA-28 180"), Archer II (PA-28 "180"), Arrow (PA-28 "180R"), Seminole (PA-44), Comanche (PA-24 "150"), Aztec (PA-23 "250"), Cherokee (PA-24 "250"), Pawnee (PA-24 "235"), Cherokee (PA-28 "235"), Aztec (PA-23 "235"), Cherokee (PA-28 "235"), Comanche (PA-24 "260"), Cherokee Six (PA-32 "260"), Pawnee (PA-25 "260"), Aztec B (PA-23 "250"), Comanche (PA-24 "250"), Aztec C (PA-23 "250"), Aztec F, Comanche (PA-24), Turbo Aztec (PA-23-250). |
| Pitts | S-1S |
| Ponnchel | P-300 |
| Pioneer | Pinchio (F-19--A) |
| Rawdon Brow | Radon (T-1) |
| Raytheon Aircraft Co (Beech) | Travel-Air (95, B-95, B-95A, B-95B), Duchess 76, Sport, Musketeer Custom III, Sundowner 180 |
| Regente | N-591 |
| Rhein-Flugzeugbau | RF-V |
| Rotary Aircraft | Rocket-Cessna (310), Turbo-Rocket, Turbo-Aztec |
| Rotor | Regente (DR400/180), Remorgueur (DR400/180R), R-3170, Asglon (R-1180T) |
| Robinson | R-44 |
| Rockwell | Commander (114, 114B, 114TC) |
| S A A B | Safir (91-D) |
| Silvercraft Aircraft Corporation | 260A |
| S.O.C.A.T.A. | Tobago (TB-10), Rallye Commodore (MS-893), Rallye 180GI, Sportana Sportsman (RS-180), Rallye 235CA, Rallye 235GT, Rallye 235C, TB-20, Trinidad TB-20, Trinidad TC TB-21 |
| Skoker | 300-S) |
| Societe Aeronautique Normande Mousquetaire | D-140, Jodel (D--140C) |
| Stac-Marchetti | S- 205, SF-260, SF-208) |
| Silvercraft | |
| Std Helicopter | |
| Stol | Gardan (GY--180) |
| Tiger Aircraft LLC (American General) | Tiger |
| T R Smith Aircraft | Aerostar (600) |
| United Consultants | Sea-Bee |
| Viva | 75 |
| Valmet | PIK-23 |
| Varga | Kachina |
| Wassmer | Super 4 (WA-50A), Sancy (WA-40), Baladou (WA-40), Parisu (WA-40), (WA-50), Europa WA-52, WA-421, WA4-2V. |
| Yeoman Aviation | YA-1 |

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

**adNote**

2006-12-7 N
AD NUMBER

# ECi Cylinders

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A NOT INSTALLED | |
| | | | (LYC CYLINDERS INSTALLED) | |
| | | | | |

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**Engine Components Incorporated (ECi)**: Amendment 39-14632. Docket No. FAA-2005-22358; Directorate Identifier 2005-NE-20-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective July 11, 2006.

**Affected Ads**

(b) This AD supersedes **2005-26-10**, Amendment 39-14431.

**Applicability**

(c) This AD applies to Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, parallel valve, reciprocating engines:

(1) Specified in Table 1 of this AD; and

(2) With ECi cylinder assemblies, part number (P/N) AEL65102 series **"Classic Cast"**, having casting head markings EC 65099-REV- 1; and

(3) With serial numbers (SNs) 1 through 9879 (SN may have an "L" prefix for a long reach spark plug), (sold from January 1997 to September 2001) installed.

(4) The set of numbers appearing on the cylinder, below and to the left of the SN, in the form of "12345-67" is not used for determining applicability.

**Table 1.--Engine Models**

| Cylinder head part No. | Installed on engine models |
|---|---|
| AEL65102-NST04 | O-320-A1B, A2B, A2C, A2D, A3A, A3B, B2B, B2C, B2D, B2E, B3B, B3C, C2B, C2C, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, E1F, E1J, E2A, E2B, E2C, E2D, E2H, E2F, E2G, E2H, E3D, E3H. |
| | IO-320-A1A, A2A, B1A, B1B, B1C, B1D, B1H, B2A, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B. |
| | AEIO-320-D1B, D2B, E1A, E1B, E2A, E2B. |
| | AIO-320-A1A, A1B, A2A, A2B, B1B, C1B. |
| | LIO-320-B1A. |
| AEL65102-NST05 | IO-320-C1A, C1B, C1F, F1A. |
| | LIO-320-C1A. |
| AEL65102-NST06 | O-320-A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C, (also, an O-320 model with no suffix). IO-320-A1A, A2A. |
| AEL65102-NST07 | TO-320-B1A, B1B. |
| | LIO-320-B1A. |
| AEL65102-NST08 | O-320-B1A, B1B, B2A, B2B, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C3A, C3B, C3C, D1A, D1B, D2A, D2B, D2C |
| AEL65102-NST10 | O-360-A1A, A1C, A1D, A2A, A2B, A3A, A3D, A4A, B1A, B1B, B2A, B2B, C1A, C1C, C1O, C2A, C2B, C2C, C2D, D1A, D2A, D2B. |
| | IO-360-B1A, B1B, B1C. |
| | HO-360-A1A, B1A, B1B. |
| | HIO-360-B1A, B1B. |
| | AEIO-360-B1B. |
| | O-540-A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B2C5D, B4A5, B4B5, B4B5D, D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5. |
| | IO-540-C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5, N1A5D. |
| AEL65102-NST12 | O-360-A1A, A1AD, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1J, A1LD, A1P, A2A, A2D, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4JD, A4K, A4M, A4N, A4P, A5AD, B1A, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D2A, F1A6, G1A6. |
| | HO-360-C1A. |
| | LO-360-A1G6D, A1H6. |
| | HIO-360-B1A, B1B, G1A. |
| | LTO-360-A1A6D. |
| | TO-360-A1A6D. |
| | IO-360-B1B, B1BD, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, L2A, M1A, M1B. |
| | AEIO-360-B1B, B1D, B1E, B1F, B1F6, B1G6, B1H, B2F, B2F6, B4A, H1A, H1B. |
| | O-540-A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4B5D, E4C5, G1A5, G1A5D, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D. |
| | IO-540-C4B5, C4B5D, C4D5, C4D5D, D4A5, D4B5, D4C5, N1A5, N1A5D, T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D. |
| | AEIO-540-D4A5, D4B5, D4C5, D4D5. |
| AEL65102-NST26 | IO-540-J4A5, R1A5. |
| | TIO-540-C1A, E1A, G1A, H1A. |
| AEL65102-NST38 | IO-360-F1A. |
| | TIO-540-AA1AD, AB1AD, AB1BD, AF1A, AG1A, AK1A, C1A, C1AD, K1AD. |
| | LTIO-540-K1AD. |
| AEL65102-NST43 | O-360-J2A. |
| | O-540-F1B5, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D. |
| | IO-540-AB1A5, W1A5, W1A5D, W3A5D. |
| AEL65102-NST44 | IO-540-L3C5D. |

For information, the subject engines are installed on, but not limited to, the aircraft listed in the following Table 2:

**Aerotech Note:** *Table 2 that was in this position in the Original FAA version of this AD has been moved to the end of this adNote™ for ease of compilation.*

**Unsafe Condition**

(d) This AD results from reports of applicability errors found in AD 2005-26-10. We are issuing this AD to prevent loss of engine power due to cracks in the cylinder assemblies and possible engine failure caused by separation of a cylinder head.

(Over)➡

**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.

**Engines Not Overhauled or Repaired Since New**

(f) If your engine has not been overhauled or had any major repair since new, no further action is required.

**Engines Overhauled or Repaired Since New**

(g) If your engine was overhauled or repaired since new, do the following:

(1) Determine if ECi cylinder assemblies, P/N AEL65102 series "Classic Cast", having casting head markings EC 65099-REV-1 and SNs 1 through 9879 (SN may have an "L" prefix for a long reach spark plug) are installed on your engine, as follows:

(i) Inspect the engine log books and maintenance records for reference to the subject ECi cylinder assemblies.

(ii) If the engine log books and maintenance records did not record the P/N and SN of the cylinder assemblies, visually inspect the cylinder assemblies and verify the P/N and SN of the cylinder assemblies

(2) If the cylinder assemblies are not ECi, P/N AEL65102 series "Classic Cast", having casting head markings EC 65099-REV-1, no further action is required.

(3) If any cylinder assembly is an ECi P/N AEL65102 series "Classic Cast", having casting head markings EC 65099-REV-1 and a SN 1 through 9879 (SN may have an "L" prefix for a long reach spark plug), do the following:

(i) If the cylinder assembly has fewer than 800 operating hours- in-service (HIS) on the effective date of this AD, replace the cylinder assembly at no later than 800 operating HIS. No action is required until the operating HIS reaches 800 hours.

(ii) If the cylinder assembly has 800 operating HIS or more on the effective date of this AD, replace the cylinder assembly within 60 operating HIS after the effective date of this AD.

**Definition of a Replacement Cylinder Assembly**

(h) For the purpose of this AD, a replacement cylinder assembly is defined as follows:

(1) A serviceable cylinder assembly made by Lycoming Engines.

(2) A serviceable FAA-approved, Parts Manufacturer Approval cylinder assembly from another manufacturer.

(3) A serviceable ECi cylinder assembly, P/N AEL65102 series, "Titan", having casting P/N AEL85099.

(4) A serviceable ECi cylinder assembly, P/N AEL65102 series "Classic Cast", having casting head markings EC 65099-REV-1, that has a SN 9880 or higher (SN may have an "L" prefix for a long reach spark plug).

**Prohibition of Cylinder Assemblies, P/N AEL65102 Series "Classic Cast", Having Casting Head Markings EC 65099-REV-1 and SNs 1 Through 9879**

(i) After the effective date of this AD, do not install any ECi cylinder assembly, P/N AEL65102, having casting head markings EC 65099-REV-1 that has a SN 1 through 9879 (SN may have an "L" prefix for a long reach spark plug), onto any engine.

**Alternative Methods of Compliance**

(j) 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.

**Related Information**

(k) ECi Service Bulletin No. 05-08, Revision 2, dated February 28, 2006, pertains to the subject of this AD.

Issued in Burlington, Massachusetts, on May 31, 2006.

Thomas A. Boudreau, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

**Table 2.--Engines Installed On, But Not Limited to**

| | |
|---|---|
| D-320-A1A | Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Apache (PA-23), Pawnee (PA-25) |
| D-320-A1B | Diamo Aircraft: Dove-Cessna (170), (170A, 170B) |
| | Nardi: Falco (F.1A-80) |
| | Partenavia: Spartacus (P-19) |
| | Partenavia: Guerriero Flying Bus |
| | Partenavia: Grey Panther, Flamingo (SGP-M-322) |
| | Pou Aircraft: Pou (59) |
| D-320-A2A | Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Apache (PA-23) |
| | Diamo Aircraft: Dove-Cessna (170), (170A, 170B) |
| | S.O.C.A.T.A.: Horizon (Gardan) |
| D-320-A2B | Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Agricultura (PA-18A "150") Super Cub (PA-18 "150") |
| | Caribbean (PA-22 "150"), Pawnee (PA-25) |
| | Partenavia: Spartacus (P-19) |
| | Partenavia: Guerriero Flying Bus |
| | Partenavia: Grey Panther, Flamingo (SGP-M-322) |
| | Pou Aircraft: Pou (59) |
| | Aviat: Husky |
| | Cessna Ets Aeronautique: Regenta (DR-153), S.O.C.A.T.A.: Rallye Commodore 150, Rallye 235C, Tobago TB-10, Guerrero "C" (FA-28 "180"), Mooney Aircraft: Master "21" (M-20D), Mark "21" (M-20E) |
| | Sud: Helicopter |
| | Aero Commander: Lark (100), Cessna Aircraft: Cardinal |
| | Beech Aircraft: Sport |
| | Tiger Aircraft LLC (American General): Tiger (GA-7) |
| | T. R. Smith Aircraft: See-Bee |
| | United Consultants: 75 |
| | Diva: PIK--23 |
| | Valmet: Kachina |
| | Varga: Super 4 (WA--50A), Sancy (WA--40), Baladou (WA--40), Parisou (WA--50), (WA--50), Kas--- |
| | Wassmer: YA--1 |
| | Yoonsan Aviation: |

| | |
|---|---|
| D-320-C1A | Piper Aircraft: Apache (PA--23 "160") |
| D-320-C1B | Riley Aircraft: Rayjay (Apache) |
| D-320-C1A | Piper Aircraft: Apache (PA--23 "160") |
| D-320-C1B | Piper Aircraft: Apache (PA--23 "160") |
| D-320-D1A | Piper Aircraft: Apache (PA--23 "160") |
| D-320-D1F | Sud: Gardan (GY--80) |
| | Dyncraft: Speed Canard |
| | Drob: Q115 |
| D-320-D2A | Slingsby: T67 Firefly |
| | Piper Aircraft: Cherokee (PA--28S "160") |
| | Robin: Major (DR400--160B), Chevalier (DR--360), (R--3160) |
| | S.O.C.A.T.A.: Tampico TB9 |
| | Slingsby: T67C Firefly, Duetwriter: MD--3--160 Nash Aircraft Ltd.: Petrel |
| | Aviastlight: P66D Delta |
| D-320-D2B | General Avia: Pingouno |
| D-320-D2J | Beech Aircraft: Musketeer (M--23) |
| D-320-D3G | Piper Aircraft: Cherokee (PA--28 "160") |
| D-320-E1A | Cessna Aircraft: Skyhawk 172 |
| D-320-E1C | Piper Aircraft: Warrior II, Cadet (PA--38--161) |
| D-320-E1F | Diets: G115 |
| | M.B.B. (Messerschmitt--Bolkow--Blohm): Monsun (BO--209--B) |
| D-320-E2A | M.B.B.: Monsun (BO--209--B) |
| | Piper Aircraft: Cherokee (PA--28 "140", PA--28 "150") |
| | Robin: Major (DR400--140B), Sitar, Bagheera (GY--100--135) |
| | Sisi--Marchetti: (S--205) |
| | F.A.: Bravo (AS--202/15), Partenavia: Oscar (P68B), Bucker (131 APM) |
| E2C | Aerotec: Paulinha P--56 |
| | Forest: Kolibri 150 |
| D-320-E3D | Beech Aircraft: Musketeer III (M--23III) |
| D-320-E3F | M.B.B.: Monsun (BO--209--B) |
| D-320-E2G | Cessna Aircraft: Cardinal (172--L 177) |
| D-320-E3D | M.B.B.: Monsun (BO--209--B), Wassmer Pacific (WA--81) |
| | American Aviation Corp.: Traveler |
| D-320-H2A | Piper Aircraft: Cherokee (140) |
| D-320-H2C | Beech Aircraft: Sport |
| D-320-H3D | Piper Aircraft: Twin Comanche (PA--30) |
| D-320-C1A | El. Shear: Wing |
| D-320-D1A | Ted Smith Aircraft: Aerostar |
| D-320-D1B | Piper Aircraft: Twin Comanche (PA--30 Turbo) |
| D-320-E1A | M.B.B.: Monsun (BO--209--C) |
| D-320-E1B | M.B.B.: Monsun (BO--209--C) |
| D-320-E2A | Bellanca Aircraft |
| D-320-E3B | Champion Aircraft: Citabria |
| D-320-F1A | Bellanca Aircraft |
| D-320-B1A | CAAM Engineering: Carr Midget |
| D-320-C1A | Piper Aircraft: Twin Comanche (PA--39) |
| AEIO-320-B1B | Piper Aircraft: Twin Comanche (PA--39) |
| AEIO-320-D1B | M.B.B.: Monsun (BO--209--C) |
| AEIO-320-D2B | Slingsby: T67M Firefly |
| AEIO-320-E1A | Hindustan Aeronautics Ltd.: HT--2 |
| | Bellanca Aircraft |
| AEIO-320-E1B | Champion Aircraft |
| | Bellanca Aircraft |
| AEIO-320-E2B | Champion Aircraft: Decathalon (8KCAB--CE) |
| | Bellanca Aircraft |
| D-320-A1A | Champion Aircraft: Decathalon (8KCAB) |
| | Riley Aircraft: Riley Twin |

| | |
|---|---|
| O-360-A1A | Beech Aircraft: Travel Air (W--95, B--95) |
| | Piper Aircraft: Comanche (PA--24) |
| | Commonwealth Mfg. Co.: Cell Air (A--6) |
| | Lake Aircraft: Colonial (C--2, LA--4, 4A or 4P) |
| | Diets Aircraft: Dove--Cessna (170), (172), (175A, 175B) |
| | Mooney Aircraft: Mark "20B" (M--20B) |
| | Earl Haynes: Pawnee (Piper PA--25) |
| | Nardi: Rascard (1A--51) |
| | Navion: (UPO--19E) |
| | Wassmer: (WA--55) |
| | Wassmer: Super 4 (WA--50A), Sancy (WA--40), Baladou (WA--40), Parisou (WA--40) |
| | Sud: Gardan (GY--180) |
| | Dyncraft: (207) |
| | Partenavia: Oscar (P--68) |
| | Sisi--Marchetti: (S--205) |
| | Piper Aircraft: Pacer (PA--20) |
| | Pezaver: Pinchon (P--1--A) |
| | S.A.A.B.: Safir (91--D) |
| | Malmo: Vipan (MF--105) |
| | Aero Boero: AB--(B) |
| | Beagle: Airedale (A--109) |
| | Defayerland: Dinner (DH4--3MK1) |
| | Kingsford--Smith: Badmaster (35--6) |
| | Aero Engine Service Ltd.: Victa (S--1) |
| O-360-A1AD | S.O.C.A.T.A.: Tobago TB--10 |
| | Piper Aircraft: Comanche (PA--24) |
| O-360-A1D | Lake Aircraft: Colonial (LA--4, 4A or 4P) |
| | Diets Aircraft: Dove--Pencil (Beech 95) |
| | Mooney Aircraft: Master "21" (M--20E), Mark "20B", "20D", (M20B, M20C) |
| | Mooney Stemmans (M--20D) |
| | Nardi: Querardi (1A--45) |
| | Wassmer: (WA--56) |
| | Malmo: Vipan (MF--105) |
| | Kenya Aircraft: Skyhawk |
| | Diets Aircraft: Dove--Piper (PA--21 "160") |
| O-360-A1F6 | Cessna Aircraft: Cardinal |
| O-360-A1F6D | Cessna Aircraft: Cardinal 177 |
| O-360-A1G6 | Cessna Aircraft: Cardinal 177 |
| O-360-A1G6D | Teal III: TSC (1A3) |
| O-360-A1H | Aero Commander |
| O-360-A1H6 | Beech Aircraft: Duchess 76 |
| O-360-A1LD | Piper Aircraft: Seminole (PA--44) |
| O-360-A1P | Wassmer: Fanfar WA--52 |
| O-360-A2A | Aviat: Husky |
| | Cessna Ets Aeronautique: Regenta (DR--153), S.O.C.A.T.A.: Rallye Commodore 150, Rallye 235C, Tobago TB--10, Guerrero "C" (FA--28 "180"), Mooney Aircraft: Master "21" (M--20D), Mark "21" (M--20E) |
| O-360-A3D | Sud: Helicopter |
| O-360-A3F | Aero Commander: Lark (100), Cessna Aircraft: Cardinal |
| O-360-A2F | Beech Aircraft: Sport |
| O-360-A2G | C.A.A.R.P.S.A.N.: (M--23/01), Societe Aeronautique Normande: Jodel (D--140C), Robin: Regent (DR400/180), Remorqueur (DR400/180R), R--3170, S.O.C.A.T.A.: Rallye 180GT, Sportavia Sportsman (RS--180), Norman Aeroplane Co.: NAC--1 |
| O-360-A3A | Freelance: Nash Aircraft Ltd.: Petrel |
| | S.O.C.A.T.A.: TB--10 |
| O-360-A3AD | Robin: Alpha (R--180T) |
| O-360-A4A | Piper Aircraft: Cherokee "D" (PA--28 "180") |
| O-360-A4D | Varga: Kachina |
| O-360-A4E | Beech Aircraft: Musketeer Custom III |
| O-360-A4M | Commander Aircraft: Tiger Beech Aircraft: Sundowner 180 |
| O-360-A4N | Piper Aircraft: Archer II (PA--28 "181"), Valmet: PIK--23 |
| O-360-A4P | Cessna Aircraft: 172 (Skyhawk) |
| O-360-A1AD | Pena Yan: Super Cub Conversion |
| O-360-B3C | S. Irish and Co.: Fog FA--200, |
| O-360-C1A | Seabird Aviation: SD1L |
| O-360-C1C | Intermountain Mfg. Co.: Cell Air (A--6) |
| O-360-C1F | Bellanca Aircraft: Senta (8GCBC--CE) |
| O-360-C1G | Maule: Star Rocket (M--7--180) |
| O-360-C1B | Christen: Husky (A--1) |
| O-360-C1D | Hughes Tool Co.: (269A) |
| O-360-C2D | Hughes Tool Co.: (269A), |
| O-360-C2E | Maule: MX--7--180A |
| O-360-C4F | Pena Yan: Super Cub Conversion |
| O-360-C4P | Cessna Aircraft: Cutlass RG |
| O-360-F1A6 | Rutavaara: RJ2 |
| O-360-J1A | Beech Aircraft: Travel--Air (B--95A) Diets Aircraft: Dove--Piper (PA--23 "250"), |
| O-360-B1A | Beech Aircraft: Travel--Air (B--95B) Diets Aircraft: Dove--Piper (PA--23 "250"), |
| O-360-B1D | Fuji: (FA--200) |
| O-360-B1D | United Consultants: Sea--Bee |
| O-360-B1E | Piper Aircraft: Arrow (PA--28 "180R") |
| O-360-B1F | Diva: 75 |
| O-360-B2B | C.A.A.R.P. C.A.P. (10) |
| O-360-B1F6 | Great Lakes: Trainer |
| O-360-B1Q5 | Aerpatrau Bilmp: Spoctar 43 |
| O-360-B1F6 | Great Lakes: Trainer |
| O-360-A1GD | Beech Aircraft: Duchess |
| O-360-A1H6 | Piper Aircraft: Seminole (PA--44) |
| O-360-E1A | T.R. Smith Aircraft: Aerostar |
| O-360-L2A | Cessna Aircraft: Skyhawk C--172 |
| O-360-M1A | Diamond Aircraft: DA--40 |
| O-360-M1B | Vans Aircraft: RV6, RV7, RV8 |
| | Lancair: 360 |
| AEIO-360-B1F | F.F.A.: Bravo (200) Grob: G115Sport--Aero |
| AEIO-360-B1G6 | Great Lakes |
| AEIO-360-B2F | Mundry: CAP--10 |
| AEIO-360-B4A | Pitts: S--1S |
| AEIO-360-H1A | Bellanca Aircraft: Super Decathalon (8KCAB--180) |
| AEIO-360-H1B | Americpa: Champion: Super Decathalon |

| | |
|---|---|
| O-360-A1A | Brantly Hynes Helicopter: (B--2) |
| O-360-A1B | Brantly Hynes Helicopter: (B--2, B2--A) Military (318D--318F) |
| O-360-B1A | Brantly Hynes Helicopter: (B--2, B2--A) |
| O-360-A1A | Brantly Hynes Helicopter: (B2--B) |
| IO-360-B1A | Hughes Tool Co.: (269A) |
| IO-360-B1B | Hughes Tool Co.: (269A) |
| IO-360-C1A | Schweizer: (SHC) |
| IO-360-B1A | Hughes Tool Co.: Military (269--B--T2)(TH--55A), |
| IO-360-B1B | Hughes Tool Co.: (269A), |
| IO-360-G1A | Schweizer: (UH) |
| O-540-A1A | Piasu Flugzeugbau: (RF--1) |
| | Piper Aircraft: Comanche (PA--24 "180") |
| O-540-A1A5 | Helio: Military (H--250) |
| | Freeman Aviation: (TA--1) |
| O-540-A1B5 | Piper Aircraft: Arrow (PA--23 "180"), Comanche (PA--24 "180") |
| O-540-A1C5 | Piper Aircraft: Comanche (PA--24 "180") |
| O-540-A1D | Pound Bros.: (FBX--1C) |
| | Schweizer: (SGS--2--B) |
| O-540-A1D5 | Piper Aircraft: Arrow (PA--23 "250"), Comanche (PA--24 "250"), Missionary Aviator (G--115A) |
| | Schweizer: (SGS--2S) |
| O-540-A2B | Aero Commander: (X500) |
| O-540-A1D5 | Beech Aircraft: Mfg. Co.: Twin Courier (H--18S), (U--8) |
| O-540-A1D5 | Piper Aircraft: Navy Arrow (PA--23 "250") |
| O-540-B1A5 | Piper Aircraft: Apache (PA--23 "235") |
| O-540-B1B5 | Piper Aircraft: Comanche (PA--24 "250") |
| O-540-B1B5 | Diets Aircraft: Dove--Piper (PA--24 "250") |
| O-540-B1D5 | Wassmer: (WA--421) |
| | Piper Aircraft: Pawnee (PA--25 "235"), Cherokee (PA--28 "235"), Arrow (PA--23 "235") |
| O-540-B2B5 | Interamericana Mfg. Co.: Cell Air (A--9) |
| | Rawdon Bros.: Rawdon (TC--1) |
| | S.O.C.A.T.A.: Rallye 235GA |
| O-540-B3C5 | Piper Aircraft: Pawnee (PA--25 "235") |
| | Piper Aircraft: Cherokee (PA--28 "235"), |
| | Embraer: Corisco (EMB--710) |
| | S.O.C.A.T.A.: Rallye 235GT, Rallye 235C |
| O-540-B4B5 | Maule: Star Rocket (MX--7--235), Super Rocket (M--8--235), Super Bird: Rocket (M--7--235) |
| | Piper Aircraft: Comanche (PA--24 "260") |
| | Interamericana: Flamingo (F--235) |
| O-540-E4A5 | Sisi--Marchetti: (SF--260), (SF--260) |
| | Pilatus--Norman: (BN--2) |
| O-540-E4B5 | Piper Aircraft: Cherokee Six (PA--32--260), Islander (BN--2A--27), Islander II (BN--2B--26), Islander (BN--2A--1), Trislander (BN--2A--Mark III--2) |
| O-540-E4C5 | Pilatus Britten--Norman: Islander (BN--2A--26), Islander (BN--2B--26), Islander (BN--2A--1), Trislander (BN--2A--Mark III--2) |
| | Omega Aircraft: (RS--1107) |
| O-540-F1B5 | Rutavaara: (R--44) |
| | Piper Aircraft: Pawnee (PA--25 "260") |
| O-540-G1A5 | Aero Boero: 260 |
| O-540-H1B5D | Centrair: Ingavanes "AG" |
| O-540-H2A5 | Fitzgerald: SA--300 |
| O-540-J2B5D | Aero Boero: 300 |
| O-540-J1A5D | Maule: Star Rocket (M--8--235), Super Rocket (M--8--235), Super Bird: Rocket (M--7--235) |
| O-540-J3A5 | Rutan: R--XXXV213 |
| | Piper Aircraft: Dakota (PA--28--236) |
| O-540-J3A5D | Cessna Aircraft: Skylane R/G |
| O-540-J3C5D | Cessna Aircraft: T--188--Turbo Skylane R/G |
| O-540-L1C5D | Piper Aircraft: Aztec B (PA--23 "250"), Comanche (PA--24 "250") |
| O-540-C1B5 | Rotor Aircraft: Turbo--Rocket |
| O-540-C1C1 | Piper Aircraft: Aztec C (PA--23 "250"), Aztec F |
| | Piper Aircraft: Aztec D (PA--23 "250"), Aztec F |
| O-540-C4B5 | Wassmer: (WA--421) |
| | Avioava Pierre Robin: (HR100V300) |
| | Bellanca Aircraft: Aviso T--250 |
| | Aerosilo: Renegade 250 |
| O-540-C4D5 | S.O.C.A.T.A.: TB--20 |
| O-540-C4D5D | S.O.C.A.T.A.: Trinidad TB--20 |
| O-540-D4A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-D4B5 | Sisi--Marchetti: (SF--260) |
| | Cessna: (CE--43 Citation) |
| | Piper Aircraft: Aztec (PA--23 "250") |
| O-540-D4C5 | Piper Aircraft: Aztec D (PA--23 "250"), Aztec F |
| | Beech Aircraft: Musketeer (B--24) |
| | Wassmer: (WA--421) |
| | Avioava Pierre Robin: (HR100V300) |
| | Bellanca Aircraft: Aviso T--250 |
| | Aerosilo: Renegade 250 |
| O-540-E1A5 | Piper Aircraft: Aztec E (PA--23 "250"), Aztec F |
| O-540-E1B5 | Piper Aircraft: Aztec F (PA--23 "250"), Aztec F |
| O-540-E1C5 | Piper Aircraft: Aztec F (PA--23 "250"), Aztec F |
| | Piper Aircraft: Aztec F (PA--23 "250"), Aztec F |
| O-540-E2B5 | Wassmer: (WA--421) |
| | Avioava Pierre Robin: (HR100V300) |
| | Bellanca Aircraft: Aviso T--250 |
| | Aerosilo: Renegade 250 |
| O-540-E3A5 | S.O.C.A.T.A.: TB--20 |
| O-540-E3A5D | S.O.C.A.T.A.: Trinidad TB--20 |
| O-540-E4A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-E4B5 | Sisi--Marchetti: (SF--260) |
| | Cessna: (CE--43 Citation) |
| | Piper Aircraft: Aztec (PA--23 "250") |
| O-540-E4C5 | Piper Aircraft: Aztec D (PA--23 "250"), Aztec F |
| | Beech Aircraft: Musketeer (B--24) |
| | Wassmer: (WA--421) |
| | Avioava Pierre Robin: (HR100V300) |
| | Bellanca Aircraft: Aviso T--250 |
| | Aerosilo: Renegade 250 |
| O-540-F1A5 | S.O.C.A.T.A.: TB--20 |
| O-540-F1A5D | S.O.C.A.T.A.: Trinidad TB--20 |
| O-540-G1A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-H1B5 | Sisi--Marchetti: (SF--260) |
| | Cessna: (CE--43 Citation) |
| | Piper Aircraft: Aztec (PA--23 "250") |
| O-540-H1C5 | Piper Aircraft: Aztec D (PA--23 "250"), Aztec F |
| | Beech Aircraft: Musketeer (B--24) |
| | Wassmer: (WA--421) |
| | Avioava Pierre Robin: (HR100V300) |
| | Bellanca Aircraft: Aviso T--250 |
| | Aerosilo: Renegade 250 |
| O-540-J1A5 | S.O.C.A.T.A.: TB--20 |
| O-540-J1A5D | S.O.C.A.T.A.: Trinidad TB--20 |
| O-540-J2A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-J2B5 | Sisi--Marchetti: (SF--260) |
| | Cessna: (CE--43 Citation) |
| | Piper Aircraft: Aztec (PA--23 "250") |
| O-540-J2C5 | Piper Aircraft: Aztec D (PA--23 "250"), Aztec F |
| | Beech Aircraft: Musketeer (B--24) |
| | Wassmer: (WA--421) |
| | Avioava Pierre Robin: (HR100V300) |
| | Bellanca Aircraft: Aviso T--250 |
| | Aerosilo: Renegade 250 |
| O-540-J3A5 | S.O.C.A.T.A.: TB--20 |
| O-540-J3A5D | S.O.C.A.T.A.: Trinidad TB--20 |
| O-540-J3C5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-J3C5D | Piper Aircraft: Aztec (PA--23 "250") |
| O-540-K1A5 | Piper Aircraft: Aztec D (PA--23 "250"), Aztec F |
| | Beech Aircraft: Musketeer (B--24) |
| | Wassmer: (WA--421) |
| | Avioava Pierre Robin: (HR100V300) |
| | Bellanca Aircraft: Aviso T--250 |
| | Aerosilo: Renegade 250 |
| O-540-K1B5 | S.O.C.A.T.A.: TB--20 |
| O-540-K1B5D | S.O.C.A.T.A.: Trinidad TB--20 |
| O-540-K1C5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L1A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L1A5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L1B5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L1B5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L1C5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L1C5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L2A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L2A5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L3A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L3A5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L3C5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L3C5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4A5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4B5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4B5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4C5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4C5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4D5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4D5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4E5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4E5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4F5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4F5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4G5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4G5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4H5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4H5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4J5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4J5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4K5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4K5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4L5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4L5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4M5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4M5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4N5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4N5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4P5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4P5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4Q5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4Q5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4R5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4R5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4S5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4S5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4T5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4T5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4U5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4U5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4V5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4V5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4W5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4W5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4X5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4X5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4Y5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4Y5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4Z5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-L4Z5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1A5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1B5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1B5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1C5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1C5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1D5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1D5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1E5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1E5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1F5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1F5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1G5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1G5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1H5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1H5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1J5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1J5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1K5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1K5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1L5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1L5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1M5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1M5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1N5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1N5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1P5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1P5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1Q5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1Q5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1R5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1R5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1S5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1S5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1T5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1T5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1U5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1U5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1V5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1V5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1W5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1W5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1X5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1X5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1Y5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1Y5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1Z5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-M1Z5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1A5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1A5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1B5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1B5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1C5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1C5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1D5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1D5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1E5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1E5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1F5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1F5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1G5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1G5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1H5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1H5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1J5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1J5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1K5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1K5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1L5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1L5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1M5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1M5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1N5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1N5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1P5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1P5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1Q5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1Q5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1R5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1R5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1S5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1S5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1T5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1T5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1U5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1U5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1V5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1V5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1W5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1W5D | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1X5 | Piper Aircraft: Comanche (PA--24 "260") |
| O-540-N1X5D | Piper Aircraft: Comanche (PA--24 "260") |
|

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2007-4-19 Rev. 1 N
AD NUMBER

# Superior Cylinders

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A BY TYPE/SN | |
| | | | LYC CYLINDERS | INSTALLED |
| | | | | |

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Amendment 39-15005. Docket No. FAA-2006-25948; Directorate Identifier 2006-NE-32-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective May 7, 2007.

**Affected ADs**

(b) This AD revises AD 2007-04-19.

**Applicability**

(c) This AD applies to Superior Air Parts, Inc. (SAP), cylinder assemblies, manufactured between April 2005 and November 2005, part numbers (P/Ns): SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S- A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, and SA55000-A20P, installed in Teledyne Continental Motors (TCM) 470, 520, and 550 series reciprocating engines. These P/N cylinder assemblies may be installed in the TCM engine models listed in the following Table 1:

**Table 1.--Affected Teledyne Continental Engine Models**

| Engine Model | |
|---|---|
| O-470 | -G, -K, -L, -M, -P, -R, -S, -U |
| IO-470 | -C, -D, -E, -F, -G, -H, -L, -M, -N, -P, -R, -S, -U, -V |
| IO-520 | - A, B, BA, C, CB, D, E, F, J, K, L, M, BB, MB |
| TSIO-520 | - AF, B, BB, C, CB, D, DB, E, EB, G, H, J, JB, K, KB, L, LB, M, N, NB, P, R, T, UB, VB, WB |
| IO-550 | - A, B, C, D, E, F, L |

These engine models are installed in, but not limited to, the aircraft models listed in the following Table 2:

**Aerotech Note:** *Table 2 has been moved to page 2 to facilitate compilation of this adNote™.*

This AD also applies to SAP, cast cylinder assemblies, P/Ns SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH- A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, and SL36006W-A21P, installed in Lycoming Engines (LE) 320, 360, and 540 series reciprocating engines and Avco Lycoming 540 series reciprocating engines. These P/N cylinder assemblies may be installed in the LE and AL engine models listed in the following Table 3:

**Table 3.--Affected Lycoming Engines and Avco Lycoming Engine Models**

| Engine Model | |
|---|---|
| O-320 | -A, -B, -C, -D, -E, H |
| IO-320 | -B, -D, -E |
| LIO-320 | -B |
| AIO-320 | -A, -B, -C |
| AEIO-320 | -D, -E |
| O-360 | -A, -B, -C, -D, -F, G, -J |
| IO-360 | -B, -L, -M |
| LO-360 | -A |
| AEIO-360 | -B, -H |
| HO-360 | -C |
| HIO-360 | -B |
| O-540 | -A, -B, -E, -F, -G, -H, -J |
| IO-540 | -A, -C, -D, -N, -T, -V, -W |
| AEIO-540 | -D |

These engine models are installed in, but not limited to, the aircraft models listed in the following Table 4:

**Aerotech Note:** *Table 4 has been moved to pages 2, 3 & 4 to facilitate compilation of this adNote™.*

These engine models are known to be installed in the aircraft models listed in the following Table 5:

**Table 5.--Superior Air Parts, Inc.--Related Aircraft Models**

| Engine Model | Aircraft Manufacturer | Aircraft Model Designation |
|---|---|---|
| O-360-A3A2 | American Champion | 7GCBC & 7GCAA |

**Unsafe Condition**

(d) This AD results from comments from the Public on the existing AD. We are issuing this AD to prevent cylinder separation that can lead to engine failure, a possible engine compartment fire, and damage to the airplane.

**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.

**Determining Which Cylinder Assemblies Are Installed**

(f) If aircraft engine records do not list the P/N of the cylinder installed during engine overhaul or repair, visually inspect the cylinders. The affected SAP cylinder head barrel flanges are marked: SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, or SA55000-A20P or SL32000W-A1, SL32000W- A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, or SL36006W-A21P.

**Cylinder Assembly Removal**

(g) Remove all cylinder assemblies with a serial number of 47LE053559 through 47LF053643, or 47SE054212 through 47SF054231, or 52D0531708 through 52H0532197, or 55E05223 through 55G05289, or 32WE059006 through 32WF059067, or 32WHE05379 through 32WHE05392, or 326WF055517 through 326WF055532, or 36TWF05430 through 36TWG05453, or 36WF058058 through 36WG058124, or 366WE056944 through 366WF057061, or 366WF057150 through 366WF057232, or 366WF057259 through 366WG057534, or 366WG057556, 366WG057569, 366WG057598, 366WG057616, 366WG057621, 366WG057624, or 366WJ057770 through 366WJ057776, or 366WL058131 no later than 150 hours total time-in- service (TIS) to preclude cylinder head fatigue failure and separation at the head-to-barrel threaded interface.

(h) For cylinder assemblies with more than 150 hours total TIS on the effective date of this AD, a 10 hour TIS extension is permitted for the purpose of flying the aircraft to a location where maintenance action can be done to meet the requirements of this AD.

(i) After the effective date of this AD, do not install any cylinder assemblies with P/Ns SA47000L-A1, SA47000L-A20P, SA47000S- A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000- A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, or SA55000-A20P,or SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH- A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, or SL36006W-A21P with a serial number of 47LE053559 through 47LF053643, or 47SE054212 through 47SF054231, or 52D0531708 through 52H0532197, or 55E05223 through 55G05289, or 32WE059006 through 32WF059067, or 32WHE05379 through 32WHE05392, or 326WF055517 through 326WF055532, or 36TWF05430 through 36TWG05453, or 36WF058058 through 36WG058124, or 366WE056944 through 366WF057061, or 366WF057150 through 366WF057232, or 366WF057259 through 366WG057534, or 366WG057556, 366WG057569, 366WG057598, 366WG057616, 366WG057621, 366WG057624, or 366WJ057770 through 366WJ057776, or 366WL058131 into any engine.

**Alternative Methods of Compliance**

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

**Special Flight Permits**

(k) For aircraft with engines that have between 140 hours and 150 hours TIS only, special flight permits may be issued in accordance with Sec. Sec. 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 done. Special flight permits may not be issued for aircraft that have utilized the provisions of paragraph (h) of this AD.

**Related Information**

(l) Superior Air Parts, Inc. Mandatory Service Bulletin B06-01, Rev. E, dated January 24, 2007, contains information related to the subject of this AD.

(m) Contact Jurgen Priester, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, Southwest Regional Headquarters, 2601 Meacham Blvd., Fort Worth, Texas 76137; e-mail: Jurgen.E.Priester@faa.gov; telephone (817) 222-5159; fax (817) 222-5785 for more information about this AD.

**Material Incorporated by Reference**

(n) None.

Issued in Burlington, Massachusetts, on March 23, 2007.

Peter A. White, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

(Over)➔

AD'S REQUIRING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES ON

### Table 4—Lycoming Engines and Avco Lycoming-Related Aircraft Models

| Engine Model | Aircraft Manufacturer | Aircraft Model |
|---|---|---|
| O-235-C1 | Piper Aircraft | PA-22-150 Tri-Pacer |
| O-235-C2 | Piper Aircraft | PA-22-150 Tri-Pacer |
| O-235-C2A | Piper Aircraft | PA-22-150 Tri-Pacer |
| O-235-C2B | Piper Aircraft | PA-22-150 Tri-Pacer |
| O-235-C2C | Piper Aircraft | PA-22-150 Tri-Pacer |
| O-235-L2A | Piper Aircraft | PA-22-150 Tri-Pacer |
| O-235-L2C | Piper Aircraft | PA-22-150 Tri-Pacer |
| O-290-D | Piper Aircraft | PA-18 Super Cub |
| O-290-D2 | Piper Aircraft | PA-18 Super Cub |
| O-290-G | Piper Aircraft | PA-18 Super Cub |
| O-320-A1A | Piper Aircraft | PA-28-140 Cherokee |
| O-320-A2A | Piper Aircraft | PA-28-140 Cherokee |
| O-320-A2B | Piper Aircraft | PA-28-140 Cherokee |
| O-320-A3A | Piper Aircraft | PA-28-140 Cherokee |
| O-320-B1A | Piper Aircraft | PA-28-150 Cherokee |
| O-320-B2A | Piper Aircraft | PA-28-150 Cherokee |
| O-320-B2B | Piper Aircraft | PA-28-150 Cherokee |
| O-320-B2C | Piper Aircraft | PA-28-150 Cherokee |
| O-320-D1A | Piper Aircraft | PA-28-160 Cherokee |
| O-320-D2A | Piper Aircraft | PA-28-160 Cherokee |
| O-320-D2J | Piper Aircraft | PA-28-161 Warrior II |
| O-320-D3G | Piper Aircraft | PA-28-161 Warrior II |
| O-320-E1A | Cessna | 172 Skyhawk |
| O-320-E2A | Cessna | 172 Skyhawk |
| O-320-E2C | Cessna | 172 Skyhawk |
| O-320-E2D | Cessna | 172 Skyhawk |
| O-320-E3D | Cessna | 172 Skyhawk |
| O-320-H2AD | Piper Aircraft | PA-28R-200 Arrow II |
| O-320-H2B | Piper Aircraft | PA-28R-200 Arrow II |
| O-320-H3AD | Piper Aircraft | PA-28R-201 Arrow III |
| O-360-A1A | Cessna | 172 Skyhawk |
| O-360-A1D | Cessna | 172 Skyhawk |
| O-360-A1F6 | Cessna | 172 Skyhawk |
| O-360-A1G6 | Cessna | 172 Skyhawk |
| O-360-A1H6 | Cessna | 172 Skyhawk |
| O-360-A1L | Cessna | 172 Skyhawk |
| O-360-A1M | Cessna | 172 Skyhawk |
| O-360-A1P | Cessna | 172 Skyhawk |
| O-360-A2A | Piper Aircraft | PA-28-180 Cherokee |
| O-360-A3A | Piper Aircraft | PA-28-181 Archer II |
| O-360-A4A | Piper Aircraft | PA-28-181 Archer II |
| O-360-A4M | Piper Aircraft | PA-28-181 Archer II |
| O-360-B1A | Piper Aircraft | PA-28-200 Cherokee Arrow |
| O-360-C1A | Cessna | 172 Skyhawk |
| O-360-C1C | Cessna | 172 Skyhawk |
| O-360-C1C6 | Cessna | 172 Skyhawk |
| O-360-C1D | Cessna | 172 Skyhawk |
| O-360-C1E6 | Cessna | 172 Skyhawk |
| O-360-C1F | Cessna | 172 Skyhawk |
| O-360-C1G6 | Cessna | 172 Skyhawk |
| O-360-C2A | Cessna | 172 Skyhawk |
| O-360-C2B | Cessna | 172 Skyhawk |
| O-360-C2C | Cessna | 172 Skyhawk |
| O-360-D1A | Piper Aircraft | PA-28-201T Turbo Dakota |
| O-360-E1A6 | Piper Aircraft | PA-28-235 Cherokee Pathfinder |
| O-360-F1A6 | Piper Aircraft | PA-28-236 Dakota |
| O-360-G1A6 | Piper Aircraft | PA-28-161 Warrior II |
| O-360-H1A | Piper Aircraft | PA-28-161 Warrior III |
| O-360-J2A | Cessna | 172 Skyhawk SP |
| O-360-J3A | Cessna | 172 Skyhawk SP |
| O-360-K2A | Cessna | 172 Skyhawk |
| O-360-L2A | Cessna | 172 Skyhawk |
| O-360-M1A | Piper Aircraft | PA-28-161 Warrior III |
| O-360-N1A | Piper Aircraft | PA-28-161 Warrior III |
| O-360-P1A | Piper Aircraft | PA-28-161 Warrior III |
| O-360-S1A | Piper Aircraft | PA-28-181 Archer III |
| O-360-T1A | Piper Aircraft | PA-28-181 Archer III |
| O-540-A1A5 | Piper Aircraft | PA-24-250 Comanche |
| O-540-A1D5 | Piper Aircraft | PA-24-250 Comanche |
| O-540-A2B5 | Piper Aircraft | PA-24-260 Comanche |
| O-540-B1A5 | Piper Aircraft | PA-30 Twin Comanche |
| O-540-B2B5 | Piper Aircraft | PA-30 Twin Comanche |
| O-540-B2C5 | Piper Aircraft | PA-30 Twin Comanche |
| O-540-E4A5 | Piper Aircraft | PA-32-260 Cherokee Six |
| O-540-H1A5 | Piper Aircraft | PA-32R-300 Lance |
| O-540-J3A5 | Piper Aircraft | PA-32R-301 Saratoga SP |
| O-540-J3C5D | Piper Aircraft | PA-32R-301T Turbo Saratoga |
| O-540-L3C5D | Piper Aircraft | PA-32R-301T Turbo Saratoga |
| O-540-M1A5 | Piper Aircraft | PA-32R-301 Saratoga SP |
| O-540-N1A5 | Piper Aircraft | PA-32R-301 Saratoga SP |
| O-540-T1A5 | Piper Aircraft | PA-32R-301T Turbo Saratoga |

### Table 2—Telephone Conference Motor-Related Aircraft Models

| Engine Model | Aircraft Manufacturer | Aircraft Model |
|---|---|---|
| TSIO-360-C | Cessna | T210 Turbo Centurion |
| TSIO-360-E | Cessna | T210 Turbo Centurion |
| TSIO-360-EB | Cessna | T210 Turbo Centurion |
| TSIO-360-FB | Cessna | T210 Turbo Centurion |
| TSIO-360-GB | Cessna | T210 Turbo Centurion |
| TSIO-360-KB | Cessna | T210 Turbo Centurion |
| TSIO-360-LB | Cessna | T210 Turbo Centurion |
| TSIO-360-MB | Cessna | T210 Turbo Centurion |
| TSIO-520-AE | Cessna | P210 Pressurized Centurion |
| TSIO-520-BE | Cessna | P210 Pressurized Centurion |
| TSIO-520-CE | Cessna | P210 Pressurized Centurion |
| TSIO-520-H | Beechcraft | Duke |
| TSIO-520-M | Beechcraft | Duke |
| TSIO-520-N | Beechcraft | Duke |
| TSIO-520-R | Beechcraft | Duke |
| TSIO-520-T | Cessna | 340 |
| TSIO-520-UB | Beechcraft | Duke |
| TSIO-520-WB | Beechcraft | Duke |
| TSIO-520-WE | Cessna | 414A Chancellor |
| TSIO-520-WG | Cessna | 414A Chancellor |
| TSIO-520-WH | Cessna | 414A Chancellor |
| TSIO-520-WJ | Cessna | 414A Chancellor |
| TSIO-520-WK | Cessna | 414A Chancellor |
| TSIO-520-WM | Cessna | 414A Chancellor |
| TSIO-520-WP | Cessna | 414A Chancellor |
| TSIO-520-WR | Cessna | 414A Chancellor |
| TSIO-520-WT | Cessna | 414A Chancellor |
| TSIO-520-WV | Cessna | 414A Chancellor |
| TSIO-520-WW | Cessna | 414A Chancellor |
| TSIO-520-WY | Cessna | 414A Chancellor |
| TSIO-520-AF | Cessna | 421C Golden Eagle |
| TSIO-520-AH | Cessna | 421C Golden Eagle |
| TSIO-520-BB | Beechcraft | Duke |
| TSIO-520-BE | Cessna | 421C Golden Eagle |
| TSIO-520-CB | Beechcraft | Duke |
| TSIO-520-CE | Cessna | 421C Golden Eagle |
| TSIO-520-EB | Beechcraft | Duke |
| TSIO-520-H | Beechcraft | Duke |
| TSIO-520-M | Beechcraft | Duke |
| TSIO-520-N | Beechcraft | Duke |
| TSIO-520-R | Beechcraft | Duke |
| TSIO-520-UB | Beechcraft | Duke |
| TSIO-520-WB | Beechcraft | Duke |



### Table 3—Lycoming Engines and Avco Lycoming-Related Aircraft Models

| Engine Model | Aircraft Manufacturer | Aircraft Model |
|---|---|---|
| IO-320-A1A | Piper Aircraft | PA-28-140 Cherokee |
| IO-320-A1B | Piper Aircraft | PA-28-140 Cherokee |
| IO-320-A1CP | Piper Aircraft | PA-28-140 Cherokee |
| IO-320-B1A | Piper Aircraft | PA-28-150 Cherokee |
| IO-320-B1B | Piper Aircraft | PA-28-150 Cherokee |
| IO-320-B1C | Piper Aircraft | PA-28-150 Cherokee |
| IO-320-B1D | Piper Aircraft | PA-28-150 Cherokee |
| IO-320-B1E2 | Piper Aircraft | PA-28-150 Cherokee |
| IO-320-B1F | Piper Aircraft | PA-28-150 Cherokee |
| IO-320-B1H | Piper Aircraft | PA-28-150 Cherokee |
| IO-320-C1A | Cessna | 172 Skyhawk |
| IO-320-C1B | Cessna | 172 Skyhawk |
| IO-320-D1A | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1AD | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1B | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1C | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1D | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1E | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1F | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1G | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1H | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1J | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1K | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1L | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1M | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1N | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D1P | Piper Aircraft | PA-28-160 Cherokee |
| IO-320-D2A | Piper Aircraft | PA-28-161 Warrior II |
| IO-320-D2J | Piper Aircraft | PA-28-161 Warrior II |
| IO-320-E1A | Cessna | 172 Skyhawk |
| IO-320-E1B | Cessna | 172 Skyhawk |
| IO-320-E1C | Cessna | 172 Skyhawk |
| IO-320-E2A | Piper Aircraft | PA-28-180 Cherokee |
| IO-320-E2C | Cessna | 172 Skyhawk |
| IO-320-E3B | Cessna | 172 Skyhawk |
| IO-320-G1A | Piper Aircraft | PA-28-235 Cherokee Pathfinder |
| IO-320-H1AD | Piper Aircraft | PA-28R-200 Arrow |
| IO-320-H2AD | Piper Aircraft | PA-28R-200 Arrow II |
| IO-320-H2B | Piper Aircraft | PA-28R-200 Arrow II |
| IO-320-H3AD | Piper Aircraft | PA-28R-201 Arrow III |
| IO-320-J1A | Piper Aircraft | PA-28-151 Cherokee Warrior |
| IO-320-J2A | Piper Aircraft | PA-28-151 Cherokee Warrior |
| IO-320-K1A | Piper Aircraft | PA-28-161 Warrior II |
| IO-320-K1B | Piper Aircraft | PA-28-161 Warrior II |
| IO-320-M1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-M1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-N1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-N1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-P1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-P1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-Q1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-Q1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-R1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-R1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-RB | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-S1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-S1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-SB | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-U1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-U1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-UB | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-W1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-W1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-WB | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-X1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-X1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-XB | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-Y1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-Y1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-YB | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-Z1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-Z1B | Piper Aircraft | PA-28-161 Warrior III |
| IO-320-ZB | Piper Aircraft | PA-28-161 Warrior III |
| IO-360-A1A | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1B6 | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1D | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1E | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1F | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1G6 | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1H6 | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1J | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1M | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A1P | Piper Aircraft | PA-28-180 Cherokee |
| IO-360-A2A | Piper Aircraft | PA-28-181 Archer II |
| IO-360-A3A | Piper Aircraft | PA-28-181 Archer II |
| IO-360-A4A | Piper Aircraft | PA-28-181 Archer II |
| IO-360-A4M | Piper Aircraft | PA-28-181 Archer II |
| IO-360-B1A | Piper Aircraft | PA-28-200 Cherokee Arrow |
| IO-360-B1B | Piper Aircraft | PA-28-200 Cherokee Arrow |
| IO-360-B1E | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1F | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1G6 | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1H6 | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1HB | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1J | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1L | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1M | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-B1P | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-C1A | Cessna | 172 Skyhawk |
| IO-360-C1C | Cessna | 172 Skyhawk |
| IO-360-C1C6 | Cessna | 172 Skyhawk |
| IO-360-C1D | Cessna | 172 Skyhawk |
| IO-360-C1E6 | Cessna | 172 Skyhawk |
| IO-360-C1F | Cessna | 172 Skyhawk |
| IO-360-C1G6 | Cessna | 172 Skyhawk |
| IO-360-C2A | Cessna | 172 Skyhawk |
| IO-360-C2B | Cessna | 172 Skyhawk |
| IO-360-C2C | Cessna | 172 Skyhawk |
| IO-360-CB | Cessna | 172 Skyhawk |
| IO-360-D1A | Piper Aircraft | PA-28-201T Turbo Dakota |
| IO-360-E1A6 | Piper Aircraft | PA-28-235 Cherokee Pathfinder |
| IO-360-F1A6 | Piper Aircraft | PA-28-236 Dakota |
| IO-360-G1A6 | Piper Aircraft | PA-28-161 Warrior II |
| IO-360-H1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-360-J2A | Cessna | 172 Skyhawk SP |
| IO-360-J3A | Cessna | 172 Skyhawk SP |
| IO-360-K2A | Cessna | 172 Skyhawk |
| IO-360-L2A | Cessna | 172 Skyhawk |
| IO-360-M1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-360-N1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-360-P1A | Piper Aircraft | PA-28-161 Warrior III |
| IO-360-S1A | Piper Aircraft | PA-28-181 Archer III |
| IO-360-T1A | Piper Aircraft | PA-28-181 Archer III |
| IO-360-UB | Beechcraft | Bonanza (V35B) |
| IO-360-WB | Beechcraft | Bonanza (V35B) |
| IO-360-YB | Beechcraft | Bonanza (V35B) |
| IO-360-ZB | Beechcraft | Bonanza (V35B) |
| IO-370-A | Piper Aircraft | PA-24-260 Comanche |
| IO-370-B | Piper Aircraft | PA-24-260 Comanche |
| IO-370-C | Piper Aircraft | PA-24-260 Comanche |
| IO-370-D | Piper Aircraft | PA-24-260 Comanche |
| IO-370-E | Piper Aircraft | PA-24-260 Comanche |
| IO-370-F | Piper Aircraft | PA-24-260 Comanche |
| IO-370-G | Piper Aircraft | PA-24-260 Comanche |
| IO-370-H | Piper Aircraft | PA-24-260 Comanche |
| IO-370-J | Piper Aircraft | PA-24-260 Comanche |
| IO-370-K | Piper Aircraft | PA-24-260 Comanche |
| IO-370-L | Piper Aircraft | PA-24-260 Comanche |
| IO-370-M | Piper Aircraft | PA-24-260 Comanche |
| IO-370-N | Piper Aircraft | PA-24-260 Comanche |
| IO-370-P | Piper Aircraft | PA-24-260 Comanche |
| IO-370-Q | Piper Aircraft | PA-24-260 Comanche |
| IO-370-R | Piper Aircraft | PA-24-260 Comanche |
| IO-370-S | Piper Aircraft | PA-24-260 Comanche |
| IO-370-T | Piper Aircraft | PA-24-260 Comanche |
| IO-370-X | Piper Aircraft | PA-24-260 Comanche |
| IO-370-Y | Piper Aircraft | PA-24-260 Comanche |
| IO-370-Z | Piper Aircraft | PA-24-260 Comanche |
| IO-390-A | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-B | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-C | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-D | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-E | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-F | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-G | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-H | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-J | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-K | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-L | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-M | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-N | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-P | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-Q | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-R | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-S | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-T | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-X | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-Y | Piper Aircraft | PA-28-161 Warrior II |
| IO-390-Z | Piper Aircraft | PA-28-161 Warrior II |
| IO-520-A | Cessna | 310 |
| IO-520-B | Cessna | 310 |
| IO-520-BA | Cessna | 310 |
| IO-520-BB | Cessna | 310 |
| IO-520-C | Cessna | 310 |
| IO-520-CB | Cessna | 310 |
| IO-520-D | Cessna | 310 |
| IO-520-E | Cessna | 310 |
| IO-520-F | Cessna | 310 |
| IO-520-G | Cessna | 310 |
| IO-520-H | Cessna | 310 |
| IO-520-J | Cessna | 310 |
| IO-520-K | Cessna | 310 |
| IO-520-L | Cessna | 310 |
| IO-520-M | Cessna | 310 |
| IO-520-N | Cessna | 310 |
| IO-520-P | Cessna | 310 |
| IO-520-R | Cessna | 310 |
| IO-520-T | Cessna | 310 |
| IO-520-V | Cessna | 310 |
| IO-540-A1A5 | Piper Aircraft | PA-30 Twin Comanche |
| IO-540-A1D5 | Piper Aircraft | PA-30 Twin Comanche |
| IO-540-AB5A5 | Piper Aircraft | PA-30 Twin Comanche |
| IO-540-B1A5 | Piper Aircraft | PA-30 Twin Comanche |
| IO-540-B2B5 | Piper Aircraft | PA-30 Twin Comanche |
| IO-540-B2C5 | Piper Aircraft | PA-30 Twin Comanche |
| IO-540-C4B5 | Piper Aircraft | PA-32-300 Cherokee Six |
| IO-540-D4A5 | Piper Aircraft | PA-32-300 Cherokee Six |
| IO-540-E4A5 | Piper Aircraft | PA-32-260 Cherokee Six |
| IO-540-H1A5 | Piper Aircraft | PA-32R-300 Lance |
| IO-540-J3A5 | Piper Aircraft | PA-32R-301 Saratoga SP |
| IO-540-J3C5D | Piper Aircraft | PA-32R-301T Turbo Saratoga |
| IO-540-L3C5D | Piper Aircraft | PA-32R-301T Turbo Saratoga |
| IO-540-M1A5 | Piper Aircraft | PA-32R-301 Saratoga SP |
| IO-540-N1A5 | Piper Aircraft | PA-32R-301 Saratoga SP |
| IO-540-T1A5 | Piper Aircraft | PA-32R-301T Turbo Saratoga |
| IO-550-A | Beechcraft | Baron 55 |
| IO-550-B | Beechcraft | Baron 55 |
| IO-550-C | Beechcraft | Baron 55 |
| IO-550-D | Beechcraft | Baron 55 |
| IO-550-E | Beechcraft | Baron 55 |
| IO-550-F | Beechcraft | Baron 55 |
| IO-550-G | Beechcraft | Baron 55 |
| IO-550-H | Beechcraft | Baron 55 |
| IO-550-J | Beechcraft | Baron 55 |
| IO-550-K | Beechcraft | Baron 55 |
| IO-550-L | Beechcraft | Baron 55 |
| IO-550-N | Beechcraft | Baron 55 |
| IO-550-P | Beechcraft | Baron 55 |
| IO-720-A1A | Cessna | 402 |
| IO-720-A1B | Cessna | 402 |
| IO-720-B1A | Cessna | 402 |
| IO-720-C1A | Cessna | 402 |
| IO-720-D1A | Cessna | 402 |
| IO-720-D1B | Cessna | 402 |
| IO-720-E1A | Cessna | 402 |
| IO-720-E1B | Cessna | 402 |
| IO-720-F1A | Cessna | 402 |
| IO-720-F1B | Cessna | 402 |
| IO-720-G1A | Cessna | 402 |
| IO-720-G1B | Cessna | 402 |
| IO-720-H1A | Cessna | 402 |
| IO-720-H1B | Cessna | 402 |
| IO-720-J1A | Cessna | 402 |
| IO-720-J1B | Cessna | 402 |
| IO-720-K1A | Cessna | 402 |
| IO-720-K1B | Cessna | 402 |
| IO-720-L1A | Cessna | 402 |
| IO-720-L1B | Cessna | 402 |
| IO-720-M1A | Cessna | 402 |
| IO-720-M1B | Cessna | 402 |
| IO-720-N1A | Cessna | 402 |
| IO-720-N1B | Cessna | 402 |
| IO-720-P1A | Cessna | 402 |
| IO-720-P1B | Cessna | 402 |
| IO-720-Q1A | Cessna | 402 |
| IO-720-Q1B | Cessna | 402 |
| IO-720-R1A | Cessna | 402 |
| IO-720-R1B | Cessna | 402 |
| IO-720-S1A | Cessna | 402 |
| IO-720-S1B | Cessna | 402 |
| IO-720-T1A | Cessna | 402 |
| IO-720-T1B | Cessna | 402 |
| IO-720-U1A | Cessna | 402 |
| IO-720-U1B | Cessna | 402 |
| IO-720-V1A | Cessna | 402 |
| IO-720-V1B | Cessna | 402 |
| IO-720-W1A | Cessna | 402 |
| IO-720-W1B | Cessna | 402 |
| IO-720-X1A | Cessna | 402 |
| IO-720-X1B | Cessna | 402 |
| IO-720-Y1A | Cessna | 402 |
| IO-720-Y1B | Cessna | 402 |
| IO-720-Z1A | Cessna | 402 |
| IO-720-Z1B | Cessna | 402 |
| IO-1070-A | Cessna | 411 |
| IO-1070-B | Cessna | 411 |
| IO-1070-C | Cessna | 411 |
| IO-1070-D | Cessna | 411 |
| IO-1070-E | Cessna | 411 |
| IO-1070-F | Cessna | 411 |
| IO-1070-G | Cessna | 411 |
| IO-1070-H | Cessna | 411 |
| IO-1070-J | Cessna | 411 |
| IO-1070-K | Cessna | 411 |
| IO-1070-L | Cessna | 411 |
| IO-1070-M | Cessna | 411 |
| IO-1070-N | Cessna | 411 |
| IO-1070-P | Cessna | 411 |
| IO-1070-Q | Cessna | 411 |
| IO-1070-R | Cessna | 411 |
| IO-1070-S | Cessna | 411 |
| IO-1070-T | Cessna | 411 |
| IO-1070-V | Cessna | 411 |
| IO-1070-W | Cessna | 411 |
| IO-1070-X | Cessna | 411 |
| IO-1070-Y | Cessna | 411 |
| IO-1070-Z | Cessna | 411 |

(Continued on Aircraftworx Motor-Related Aircraft Models)

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2008-26-10 Cessna N/M

AD NUMBER

# Alternate Static Source Valve

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | N/A BY YEAR & DATE OF MANUFACTURE | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-15776; Docket No. FAA-2008-1328; Directorate Identifier 2008-CE-068-AD.

**Effective Date**

(a) This AD becomes effective on January 5, 2009.

**Affected ADs**

(b) This AD relates to AD 98-01-01, Amendment 39-10287 and AD 2008-10-02, Amendment 39-15508. These ADs can be found on the Internet at the following Web site: http://rgl.faa.gov/.

**Applicability**

(c) This AD applies to all serial numbers (S/Ns) of the airplanes listed in Table 1 of this AD, certificated in any category, that:

(1) Were initially delivered from the manufacturer between January 1, 1993, and March 31, 2008, unless the modification/rework required in AD 2008-10-02 has been done and you remain in compliance with that AD; or

(2) Have a part number (P/N) 2013142-18 installed as a replacement part anytime after January 1, 1993, unless the modification/rework required in AD 2008-10-02 has been done and you remain in compliance with that AD.

**Note 1:** The affected part was shipped from Cessna Parts Distribution (CPD) between January 1, 1993, and March 31, 2008.

**Note 2:** P/N 2013142-18 replaced P/Ns 2013142-9, -13, and -17.

**Aerotech Note:** Table 1 has been moved from this location in the Original FAA version of this Airworthiness Directive to page 3 to facilitate compilation of this adNote™.

**Unsafe Condition**

(d) This AD is the result of reports of improper installation of the part number identification placard on the alternate static air source selector valve. We are issuing this AD to prevent erroneous indications from the altimeter, airspeed, and vertical speed indicators, which could cause the pilot to react to incorrect flight information and possibly result in loss of control.

**Compliance**

(e) To address this problem, you must do the following, unless already done. A person authorized to perform maintenance as specified in 14 CFR section 43.3 of the Federal Aviation Administration Regulations (14 CFR 43.3) is required to do all the actions required in this AD.

| Actions | Compliance | Procedures |
|---|---|---|
| (1) For all affected airplanes that are not equipped for flight under instrument flight rules (IFR): Inspect the alternate static air source selector valve to assure that the part number identification placard is not obstructing the port. | Within the next 100 hours time-in-service (TIS) after January 5, 2009 (the effective date of this AD) or within the next 4 months after January 5, 2009 (the effective date of this AD), whichever occurs first. | Following the procedures in Cessna Single Engine Service Bulletin SB08-34-02, Revision 1, dated October 6, 2008; Cessna Caravan Service Bulletin CAB08-4, Revision 1, dated October 6, 2008; Cessna Single Engine Service Bulletin SEB08-5, dated October 13, 2008; or Cessna Multi-engine Service Bulletin MEB08-6, dated October 13, 2008, as applicable. |
| (2) For all affected airplanes that are equipped for flight under instrument flight rules (IFR):<br>(i) Inspect the alternate static air source selector valve to assure that the part number identification placard is not obstructing the port; or<br>(ii) Fabricate a placard that incorporates the following words (using at least 1/8-inch letters) and install this placard on the instrument panel within the pilot's clear view: "IFR OPERATION IS PROHIBITED" and "USE OF THE ALTERNATE STATIC AIR SOURCE IS PROHIBITED." | (A) Inspect within the next 10 days after January 5, 2009 (the effective date of this AD); or<br>(B) Install placards before further flight after January 5, 2009 (the effective date of this AD). | Following the procedures in Cessna Single Engine Service Bulletin SB08-34-02, Revision 1, dated October 6, 2008; Cessna Caravan Service Bulletin CAB08-4, Revision 1, dated October 6, 2008; Cessna Single Engine Service Bulletin SEB08-5, dated October 13, 2008; or Cessna Multi-engine Service Bulletin MEB08-6, dated October 13, 2008, as applicable. |
| (3) For all affected airplanes that are equipped for flight under instrument flight rules (IFR): If placards were installed in accordance with paragraph (e)(2)(ii) of this AD, inspect the alternate static air source selector valve to assure that the part number identification placard is not obstructing the port. | Within the next 100 hours TIS after January 5, 2009 (the effective date of this AD) or within the next 4 months after January 5, 2009 (the effective date of this AD), whichever occurs first. After doing the inspection, remove the placards installed in accordance with paragraph (e)(2)(ii) of this AD before further flight. | Following the procedures in Cessna Single Engine Service Bulletin SB08-34-02, Revision 1, dated October 6, 2008; Cessna Caravan Service Bulletin CAB08-4, Revision 1, dated October 6, 2008; Cessna Single Engine Service Bulletin SEB08-5, dated October 13, 2008; or Cessna Multi-engine Service Bulletin MEB08-6, dated October 13, 2008, as applicable. |
| (4) For all affected airplanes: If the alternate static air source selector valve port is found obstructed by the part number identification placard during the inspection required in paragraphs (e)(1), (e)(2)(i), and (e)(3) of this AD, remove the placard from the valve body, discard the placard, and assure that the port is open and unobstructed. | Before further flight after the inspection required in paragraphs (e)(1), (e)(2)(i), and (e)(3) of this AD. | Following the procedures in Cessna Single Engine Service Bulletin SB08-34-02, Revision 1, dated October 6, 2008; Cessna Caravan Service Bulletin CAB08-04, Revision 1, dated October 6, 2008; Cessna Single Engine Service Bulletin SEB08-5, dated October 13, 2008; or Cessna Multi-engine Service Bulletin MEB08-6, dated October 13, 2008, as applicable. |
| (5) For all affected airplanes: When a replacement valve is needed, only install a P/N 2013142-18 alternate static air source selector valve that has been inspected and the port is found free from obstruction. | As of 10 days after January 5, 2009 (the effective date of this AD). | A person authorized to perform maintenance as specified in 14 CFR section 43.3 of the Federal Aviation Administration Regulations (14 CFR 43.3) is required to do the inspection. |

(Over)→

(f) Report to the FAA the results of the inspection required by this AD where an obstruction was found.

(1) Submit this report within 10 days after the inspection or 10 days after the effective date of this AD, whichever occurs later.

(2) Use the form in Figure 1 of this AD and submit it to FAA, Manufacturing Inspection District Office, Mid-Continent Airport, 1801 Airport Road, Room 101, Wichita, Kansas 67209; or fax to (316) 946-4189.

(3) The Office of Management and Budget (OMB) approved the information collection requirements contained in this regulation under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and assigned OMB Control Number 2120-0056.

**AD 2008-26-10 INSPECTION REPORT**

**(REPORT ONLY IF A PART NUMBER IDENTIFICATION PLACARD IS OBSTRUCTING THE STATIC AIR SOURCE SELECTOR VALVE PORT)**

| | |
|---|---|
| *1. Inspection Performed By:* | *2. Phone:* |
| *3. Airplane Model:* | *4. Airplane Serial Number:* |
| *5. Airplane Total Hours TIS:* | |
| *6. Date of AD inspection:* | |
| *7. Inspection Results: (Note: Report only if a part number identification placard is obstructing static air source valve port.)* | *8. Corrective Action Taken:* |

**Mail report to: Wichita Manufacturing Inspection District Office, Mid-Continent Airport, 1801 Airport Road, Room 101, Wichita, Kansas, 67209; or fax to (316) 946-4189**

Aerotech Note: Above address changed from 1804 to 1801.

**Alternative Methods of Compliance (AMOCs)**

(g) The Manager, Wichita 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: Ann Johnson, Aerospace Engineer, FAA, Wichita ACO, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: 316-946- 4105; fax: 316-946-4107; e-mail address: ann.johnson@faa.gov. 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.

(h) AMOCs approved for AD 2008-10-02 are approved for this AD.

**Material Incorporated by Reference**

(i) You must use Cessna Single Engine Service Bulletin, SB08-34- 02, Revision 1, dated October 6, 2008; Cessna Caravan Service Bulletin CAB08-4, Revision 1, dated October 6, 2008; Cessna Single Engine Service Bulletin SEB08-5, dated October 13, 2008; and Cessna Multi-engine Service Bulletin MEB08-6, dated October 13, 2008, 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 Cessna Aircraft Company, P.O. Box 7704, Wichita, Kansas 67277; telephone: (800) 423-7762 or (316) 517-6056; Internet: http:// www.cessna.com.

(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 December 15, 2008.

Kim Smith, Manager, Small Airplane Directorate, Aircraft Certification Service.



**Table 1--Applicable Airplane Models**

| Models | | |
|---|---|---|
| 172 | F172K | 177 |
| 172A | F172L | 177A |
| 172B | F172M | 177B |
| 172C | F172N | 177RG |
| 172D | F172P | F177RG |
| 172E | FR172E | 180 |
| 172F (USAF T-41A) | FR172F | 180A |
| 172G | FR172G | 180B |
| 172H (USAF T-41A) | FR172H | 180C |
| 172I | FR172J | 180D |
| 172K | FR172K | 180E |
| 172L | P172D | 180F |
| 172M | R172E (USAF T-41B) (USAF T-41C and D) | 180G |
| 172N | R172F (USAF T-41) | 180H |
| 172P | R172G (USAF T-41C or D) | 180J |
| 172Q | R172H (USAF T-41D) | 180K |
| 172R | R172J | 182 |
| 172S | R172K | 182A |
| F172D | 172RG | 182B |
| F172E | 175 | 182C |
| F172F | 175A | 182D |
| F172G | 175B | 182E |
| F172H | 175C | 182F |
| 182G | A185F | U206D |
| 182H | 206 | U206E |
| 182J | 206H | U206F |
| 182K | P206 | U206G |
| 182L | P206A | 207 |
| 182M | P206B | 207A |
| 182N | P206C | T207 |
| 182P | P206D | T207A |
| 182Q | P206E | 208 |
| 182R | T206H | 208B |
| 182S | TP206A | 210 |
| 182T | TP206B | 210A |
| F182P | TP206C | 210B |
| F182Q | TP206D | 210C |
| FR182 | TP206E | 210D |
| R182 | TU206A | 210E |
| T182 | TU206B | 210F |
| T182T | TU206C | 210G |
| TR182 | TU206D | 210H |
| 185 | TU206E | 210J |
| 185A | TU206F | 210K |
| 185B | TU206G | 210L |
| 185C | U206 | 210M |
| 185D | U206A | 210N |
| 185E | U206B | 210R |
| A185E | U206C | 210-5 (205) |
| 210-5A (205A) | FT337F | |
| T210F | M337B (USAF 02A) | |
| T210G | T337B | |
| T210H | T337C | |
| T210J | T337D | |
| T210K | T337E | |
| T210L | T337F | |
| T210M | T337H | |
| T210N | T337H-SP | |
| T210R | | |
| T303 | | |
| 336 | | |
| 337 | | |
| 337A (USAF 02B) | | |
| 337B | | |
| 337C | | |
| 337D | | |
| 337E | | |
| 337F | | |
| 337G | | |
| 337H | | |
| F337E | | |
| F337F | | |
| F337G | | |
| F337H | | |
| FT337E | | |

ADs REQUIRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES, OP

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2009-26-12 N/R
AD NUMBER

# ECi Cylinders

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Engine Model: _____ Serial No: _____

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL DUE AT: TOTAL TIME | NEXT COMPL DUE AT: DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | N/A | | | |
| | | | LYC CYLINDERS | | | |
| | | | INSTALLED | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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Amendment 39-16151. Docket No. FAA-2008-0052; Directorate Identifier 2008-NE-01-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective February 4, 2010.

**Affected ADs**

(b) This AD supersedes AD 2008-19-05, Amendment 39-15672.

**Applicability**

(c) If your engine has not been overhauled, or not had any cylinder assemblies replaced since new, no further action is required.

(d) This AD applies to the Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, "Parallel Valve," reciprocating engines listed in Table 1 of this AD, with ECi cylinder assembly, part number (P/N) AEL65102 series "Titan," and with cylinder head, P/N AEL85099, installed.

(1) The applicable cylinder assembly serial numbers (S/Ns) are S/N 1138-02 through S/N 35171-22 (referred to in this AD as Group "A" cylinder assemblies); and

(2) S/N 35239-01 through S/N 42179-30 (referred to in this AD as Group "B" cylinder assemblies).

(3) The cylinder assembly P/N is at the crankcase end of the cylinder assembly, and might be difficult to see. As a guide in determining if your cylinder assemblies are affected, all affected cylinder assemblies have cylinder head P/N AEL85099. The cylinder head P/N is at the top of the cylinder head, near the intake and exhaust valve springs, and is easier to locate than the cylinder assembly P/N.

(4) The set of numbers appearing on the cylinder, above and to the left of the S/N, in the form of "123456" is not used for determining this AD's applicability.

**Table 1–Engine Models**

| Cylinder Assembly Part Number: | Installed on Engine Models: |
|---|---|
| AEL65102-NST04 | O-320-A1B, A2B, A2C, A2D, A3A, A3B, B2B, B2C, B2D, B2E, B3B, B3C, C2B, C2C, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, E1F, E1J, E2A, E2B, E2C, E2D, E2E, E2F, E2G, E2H, E3D, E3H<br>IO-320-A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B<br>AEIO-320-D1B, D2B, E1A, E1B, E2A, E2B<br>AIO-320-A1A, A1B, A2A, A2B, B1B, C1B<br>LIO-320-B1A |
| AEL65102-NST05 | IO-320-C1A, C1B, C1F, F1A<br>LIO-320-C1A |
| AEL65102-NST06 | O-320-A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C, (also, an O-320 model with no suffix)<br>IO-320-A1A, A2A |
| AEL65102-NST07 | IO-320-B1A, B1B<br>LIO-320-B1A |
| AEL65102-NST08 | O-320-B1A, B1B, B2A, B2B, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C3A, C3B, C3C, D1A, D1B, D2A, D2B, D2C |
| AEL65102-NST10 | O-360-A1A, A1C, A1D, A2A, A2E, A3A, A3D, A4A, B1A, B1B, B2A, B2B, C1A, C1C, C1G, C2A, C2B, C2C, C2D, D1A, D2A, D2B<br>IO-360-B1A, B1B, B1C<br>HO-360-A1A, B1A, B1B<br>HIO-360-B1A, B1B<br>AEIO-360-B1B<br>O-540-A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B4A5, B4B5, D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5<br>IO-540-C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5 |
| AEL65102-NST12 | O-360-A1A, A1AD, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1J, A1LD, A1P, A2A, A2D, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4JD, A4K, A4M, A4N, A4P, A5AD, B1A, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D2A, F1A6, G1A6<br>HO-360-C1A<br>LO-360-A1G6D, A1H6<br>HIO-360-B1A, B1B, G1A<br>LTO-360-A1A6D<br>TO-360-A1A6D<br>IO-360-B1B, B1BD, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, L2A, M1A, M1B<br>AEIO-360-B1B, B1D, B1E, B1F, B1F6, B1G6, B1H, B2F, B2F6, B4A, H1A, H1B<br>O-540-A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4C5, G1A5, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D<br>IO-540-C4B5, C4B5D, C4D5, C4D5D, D4A5, D4B5, D4C5, N1A5, N1A5D, T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D<br>AEIO-540-D4A5, D4B5, D4C5, D4D5 |
| AEL65102-NST28 | IO-540-J4A5, R1A5<br>TIO-540-C1A, E1A, G1A, H1A |
| AEL65102-NST38 | IO-360-F1A<br>TIO-540-AA1AD, AB1AD, AB1BD, AF1A, AG1A, AK1A, C1A, C1AD, K1AD<br>LTIO-540-K1AD |
| AEL65102-NST43 | O-360-J2A<br>IO-540-F1B5, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D<br>IO-540-AB1A5, W1A5, W1A5D, W3A5D |
| AEL65102-NST44 | O-540-L3C5D |

The Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, "Parallel Valve", reciprocating engines are installed on, but not limited to, the aircraft listed in the following Table 2:

AD's SECURING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES (SB

AD Number _____
(continued)

Page No. _____

adNote™

Aircraft Registration No. _____

Type Aircraft _____

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL DUE AT | | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | TOTAL TIME | TACH OR RECORDING METER TIME | |
| | | | | | | |
| | | | | | | |
| | | | | |

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2017-4-6 N/M
AD NUMBER

# United Altimeter

Component Model/Serial No:_____

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | DNA. (NOT INSTALLED) | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-18801; Docket No. FAA-2016-9345; Directorate Identifier 2016-CE-028-AD.

**(a) Effective Date**

This AD is effective April 7, 2017.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to United Instruments, Inc. 5934 series altimeters that were manufactured between January 2015 and February 2016 and installed in airplanes and helicopters.

(1) The specific affected serial number altimeters can be found in United Instruments, Inc. Service Bulletin No. 13, dated March 25, 2016. Paragraph (j)(3) of this AD contains addresses for obtaining the service bulletin.

(2) Altimeters that have been corrected by United Instruments, Inc. following Service Bulletin No. 13, dated March 25, 2016, are not affected by this AD and no further action is necessary.

(3) Altimeters that have been corrected by United Instruments, Inc. can be identified by a yellow dot, approximately 1/4 inch (6 mm) in diameter, located approximately 1 inch (25 mm) to the left side of the nameplate. The corrected altimeters will also have a letter "M," approximately 1/8 inch (3mm) high, metal stamped on the nameplate after the name "ALTIMETER."

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 44, Cabin Systems.

**(e) Unsafe Condition**

This AD was prompted by reports of certain altimeters displaying higher than actual altitude due to a slow diaphragm leak. We are issuing this AD to prevent display of misleading altitude data, which could result in inadvertent flight into terrain.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Replacement**

Within the next 12 months after April 7, 2017 (the effective date of this AD), replace any affected altimeter with a serviceable part following United Instruments, Inc. Service Bulletin No. 13, dated March 25, 2016.

**(h) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Wichita 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. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (i) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(i) Related Information**

For more information about this AD, contact Les Lyne, Aerospace Engineer, FAA, Wichita ACO, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4190; fax: (316) 946-4107; email: *leslie.lyne@faa.gov*.

**(j) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) United Instruments, Inc. Service Bulletin No. 13, dated March 25, 2016.

(ii) Reserved.

(3) For United Instruments, Inc. service information identified in this AD, contact United Instruments, Inc., 3625 Comotara Avenue, Wichita, KS 67226; telephone (316) 636-9203; fax: (316) 636-9243; email: *customerservice@unitedinst.com*; Internet: *www.unitedinst.com* or *http://www.unitedinst.com/Products/SpecificationSheets/st13281f.aspx*.

(4) You may view this service information at FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148. It is also available on the internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA-2016-9345.

(5) You may view this service information that is incorporated by reference 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/cfr/ibr-locations.html*.

Issued in Kansas City, Missouri, on February 6, 2017.

Kelly A. Broadway, Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

AD REQUIRING ADDITIONAL

MAJOR REPAIR & ALTERATION

FACTORY SERVICE NOTES 08

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2017-16-11 N/M
AD NUMBER

# Lycoming Engine

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear  Engine Model/Serial No:

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | DNA - BY OVERHAUL DATE | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-18988; Docket No. FAA-2017-0788; Product Identifier 2017-NE-27-AD.

**(a) Effective Date**

This AD is effective August 15, 2017.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to:

(1) All Lycoming Engines reciprocating engines listed in Table 1 of Lycoming Engines Mandatory Service Bulletin (MSB) No. 632B, dated August 4, 2017, and

(2) all Lycoming Engines reciprocating engines that were overhauled or repaired using any replacement part listed in Table 2 of Lycoming Engines MSB No. 632B, dated August 4, 2017, which was shipped from Lycoming Engines during the dates listed in Table 2 of Lycoming Engines MSB No. 632B, dated August 4, 2017.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 8520, Reciprocating Engine Power Section.

**(e) Unsafe Condition**

This AD was prompted by several reports of connecting rod failures resulting in uncontained engine failure and in-flight shutdowns (IFSDs). We are issuing this AD to prevent connecting rod failure. The unsafe condition, if not corrected, could result in uncontained engine failure, total engine power loss, IFSD, and possible loss of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) For all affected engines, within 10 operating hours after the effective date of this AD, inspect all affected connecting rods as specified in Lycoming Engines MSB No. 632B, dated August 4, 2017, except for the instruction to complete the online survey and the instruction to review your inventory.

(2) Replace all connecting rods that fail the inspection required by paragraph (g)(1) of this AD with parts eligible for installation.

**(h) Installation Prohibition**

After the effective date of this AD:

(1) Do not install any Lycoming Engines reciprocating engine that was overhauled or repaired using any replacement part listed in Table 2 of Lycoming Engines MSB No. 632B, dated August 4, 2017, which was shipped from Lycoming Engines during the dates listed in Table 2 of Lycoming Engines MSB No. 632B, dated August 4, 2017, and

(2) do not install any part listed in Table 2 of Lycoming Engines MSB No. 632B, dated August 4, 2017 into any Lycoming Engines reciprocating engine.

**(i) Credit for Previous Actions**

You may take credit for the actions required by paragraph (g) of this AD if you performed those actions before the effective date of this AD using Lycoming Engines MSB No. 632A, dated July 23, 2017 or earlier versions.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(k) Related Information**

For more information about this AD, contact Norman Perenson, Aerospace Engineer, New York ACO Branch, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7337; fax: 516-794-5531; email: norman.perenson@faa.gov.

**(l) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Lycoming Engines Mandatory Service Bulletin No. 632B, dated August 4, 2017.

(ii) Reserved.

(3) For Lycoming Engines service information identified in this AD, contact Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701; phone: 800-258-3279; fax: 570-327-7101; Internet: www.lycoming.com/Lycoming/SUPPORT/TechnicalPublications/ServiceBulletins.aspx.

(4) You may view this service information at FAA, Engine and Propeller Standards Branch. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information that is incorporated by reference 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/cfr/ibr-locations.html.

Issued in Burlington, Massachusetts, on August 7, 2017.

Robert J. Ganley, Manager, Engine and Propeller Standards Branch, Aircraft Certification Service.

Single Engine

# OWNER ADVISORY

Beechcraft | Cessna | Textron Aviation

SEL-71-07

**TITLE**

POWER PLANT - TRANSMITTAL OF LYCOMING SERVICE BULLETIN NO. 632A IDENTIFICATION OF CONNECTING RODS WITH NON-CONFORMING SMALL END BUSHINGS

**TO:**

Owners of the airplanes that follow:

Cessna model airplanes: 152, A152, F152, FA152, 172I, 172K, 172L, F172L, 172M, F172M, 172N, F172N, 172P, F172P, 172RG, 172Q, 177, 177A, 177B, 177RG, F177RG, R182, FR182, T182, TR182.

Cessna model airplanes (1996 & On): 172R, 172S, 182S, 182T, T182T, 206H, T206H.

Beechcraft model airplanes: 23, A23-19, A23-24, A-24, A24R, 19A, B19, M19A, B-23, B24R, C-23, C24R, C-35, D-35, 77.

**REASON**

This service letter transmits Lycoming Service Bulletin No. 632A, Identification of Connecting Rods with Non-Conforming Small End Bushings. The Lycoming service bulletin has instructions to inspect engine serial numbers, connecting rod and connecting rod bushing part numbers, remove the cylinders and complete a connecting rod bushing press-out procedure. If a connecting rod, or connecting rod bushing is suspect, they must be replaced.

**WARNING:** **You must complete the "required action" in this service bulletin to ensure that your connecting rod bushings are properly seated. If a connecting rod bushing becomes unseated, according to Lycoming the connecting rod can fail, causing an uncommanded and complete loss of power.**

**COMPLIANCE**

MANDATORY. This service document must be accomplished within 10 flight hours.

**NOTE:** If the airplane is operated before the incorporation of Lycoming Service Bulletin No. 632A the pilot should monitor the engine for abnormal vibrations or knocking. It is recommended that pilots consider operating only daytime VFR and familiarize themselves with the emergency procedures for a precautionary or emergency landing.



July 26, 2017

Textron Aviation Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

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**LABOR HOURS**

| WORK PHASE | LABOR-HOURS |
|---|---|
| Cylinder removal, inspection and reinstallation (4-cylinder engine) | 12.0 |
| Cylinder removal, inspection and reinstallation (6-cylinder engine) | 16.0 |
| Exhaust manifold removal and reinstallation (6-cylinder turbocharged engines) | 3.0 |
| Cylinder removal, inspection and reinstallation (8-cylinder engine) | 20.0 |
| Bushing Press-Out Procedure | 0.25 per connecting rod |
| Connecting Rod Removal and Replacement (if required) | 1.0 per connecting rod |

**NOTE:** Additional labor hours may be considered. Please submit a claim form online for the actual hours at ww2.txtav.com/Parts or email the completed Textron Aviation Claim Form to warranty@txtav.com.

**MATERIAL AVAILABILITY**

For a list of part numbers, refer to the Parts Required for Reassembly section in the Lycoming Service Bulletin No. 632 Rev A or later.

Please contact a Textron Aviation Authorized Service Facility for current cost and availability of parts listed necessary to complete this service document.



Single Engine
OWNER ADVISORY
Beechcraft | Cessna | Textron Aviation
SEL-71-07

N/A BY DATE

**WARRANTY**

This service document is *mandatory*. Eligible airplanes may qualify for parts and labor coverage to the extent noted in the *Labor Hours* and *Material Availability* sections of this document.

**Eligibility:** All engine serials identified in Table 1 of the Lycoming Service Bulletin No. 632 Rev A or later or have had an engine that has been overhauled or repaired after January 1, 2015 and used replacement connecting rod assemblies identified in Table 2 of the Lycoming Service Bulletin No. 632 Rev A or later

**Parts Coverage:** Textron Aviation-owned and Textron Aviation-authorized Service Facilities, operators, or other maintenance facilities may submit a claim for the parts required to accomplish this service document as defined in the *Material Availability* section of this document.

**Labor Coverage:** Textron Aviation-owned and Textron Aviation-authorized Service Facilities rated to perform maintenance on the specific model of Beechcraft or Cessna Aircraft may submit a claim for the labor necessary to accomplish this service document as defined in the *Labor Hours* section of this document.

**There is no labor allowance available for the engines that have ordered and installed the LW-13923 Connecting Rod Bushing.**

**Credit Application:** After this service document has been accomplished, a claim must be submitted to Textron Aviation within 30 days of the service document completion. Claims for compliance of this service document are to be filed as a W4 type claim.

Please submit your claim form online at *ww2.txtav.com/Parts* or email the completed Textron Aviation Claim Form to *warranty@txtav.com*. If submitted on-line a Return Authorization will be provided. If a paper claim is submitted your claim will be entered into the system and a Return Authorization will be sent to you.

The Return Authorization must accompany any required return parts (see *Material Availability*), to the point of purchase.

Parts to be returned to Textron Aviation Parts Distribution should be forwarded to:

Textron Aviation Parts Distribution
Warranty Administration
285 South Greenwich Road
Bldg B89, Docks 1-4
Wichita, KS 67206
USA

**Expiration:** July 26, 2018 (after this date the owner/operator assumes the responsibility or compliance costs)

Textron Aviation reserves the right to void continued airplane warranty coverage for the parts affected by this service document until the service document is accomplished.

N30553
AIRCRAFT REGISTRATION NO

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

2018-2-4 N/M
AD NUMBER

# AWI Mufflers

Component Model/Serial No:_____

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | DNA – NOT INSTALLED | |
| | | | | |
| | | | | |
| | | | | |

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Amendment 39-19157; Docket No. FAA-2017-0324; Product Identifier 2017-CE-004-AD.

**(a) Effective Date**

This AD is effective February 21, 2018.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Aerospace Welding Minneapolis, Inc. (AWI) mufflers listed in figure 1 of paragraph (c) of this AD that are installed on but not limited to the airplanes listed in figure 2 of paragraph (c) of this AD.

**Note 1 to paragraph (c) of this AD:** You may use AWI Mandatory Service Bulletin No. 15063001, dated June 30, 2015, to identify if an affected muffler is installed on the airplane.

**Aerotech Note:** *Figures 1 and 2 of Paragraph (c) in this position of the original FAA version of this Airworthiness Directive have been moved to the reverse side to facilitate compilation of this adNote™*

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 7820, Exhaust Noise Suppressor.

**(e) Unsafe Condition**

This AD was prompted by occurrences of cracks or broken welds in the connecting weld of the muffler body to muffler cuff that may allow carbon monoxide (CO) exhaust fumes into the cockpit heating system. We are issuing this AD to prevent cracks in the connecting weld of the muffler body to muffler cuff that may allow CO fumes to enter the cockpit heating system and possibly inhibit the pilot's ability to maintain control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Inspection of the Muffler**

(1) Within 5 hours time-in-service after February 21, 2018 (the effective date of this AD), inspect the affected muffler following the instructions listed in paragraphs (g)(1)(i) through (iii).

(i) Using a vacuum cleaner with the hose attached to the blowing side of the vacuum (with the filter installed), attach the vacuum to the airplane tailpipe and seal securely.

(ii) The vacuum will pressurize the system sufficiently for a soap solution to be brushed or applied from a spray bottle to the surface of the exhaust system.

(iii) Inspect for evidence of breaches (leakage) in the system from cracks.

(2) In lieu of doing the inspection required in paragraph (g)(1) of this AD, within 5 hours after February 21, 2018 (the effective date of this AD), you may remove the affected muffler following AWI Cessna 172 (Lycoming) Muffler Removal and Installation, Revision 01, January 17, 2017, and replace the affected muffler with an FAA-approved part that is not a muffler listed in figure 1 of paragraph (c) of this AD following the manufacturer's instructions.

(3) If replacement specified in paragraph (g)(2) of this AD is done instead of the inspection required in paragraph (g)(1) of this AD, then paragraph (h)(3) of this AD is the only additional requirement of this AD.

**(h) Replacement of the Muffler**

(1) If evidence of breaches (leakage) is found during the inspection required in paragraph (g) of this AD, before further flight, remove the affected muffler following AWI Cessna 172 (Lycoming) Muffler Removal and Installation, Revision 01, January 17, 2017, and replace the affected muffler with an FAA-approved part that is not a muffler listed in figure 1 of paragraph (c) of this AD following the manufacturer's instructions.

(2) If no evidence of breaches (leakage) is found during the inspection required in paragraph (g) of this AD, within the next 100 hours TIS after February 21, 2018 (the effective date of this AD) or at the next annual inspection after February 21, 2018 (the effective date of this AD), whichever occurs later, remove and replace the affected muffler with an FAA-approved part that is not a muffler listed in figure 1 of paragraph (c) of this AD as described in (h)(1).

(3) After February 21, 2018 (the effective date of this AD), do not install on any airplane an affected muffler listed in figure 1 of paragraph (c) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Chicago ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO Branch, send it to the attention of the person identified in paragraph (j)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

For more information about this AD, contact Mark Grace, Aerospace Engineer, FAA, Chicago ACO Branch, 2300 East Devon Avenue, Des Plaines, IL 60018-4696; telephone: (847) 294-7377; fax: (847) 294-7834; email: *mark.grace@faa.gov*.

**(k) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) AWI Cessna 172 (Lycoming) Muffler Removal and Installation, Revision 01, January 17, 2017.

(ii) Reserved.

(3) For service information identified in this AD, contact Aerospace Welding Minneapolis, Inc. (AWI) 1045 Gemini Road, Eagan, Minnesota 55121; telephone: 651-379-9888; fax: 651-379-9889; internet: *www.awi-ami.com*.

(4) You may view this service information at FAA, Policy and Innovation Division, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

(5) You may view this service information that is incorporated by reference 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/cfr/ibr-locations.html*.

Issued in Kansas City, Missouri, on January 9, 2018.

Melvin Johnson, Deputy Director, Policy and Innovation Division, Aircraft Certification Service.

(See page 2 over) ⇒

**Figure 1 of Paragraph (c) of This AD—Affected Mufflers**

| Muffler part No. | Muffler serial Nos. |
|---|---|
| A1754001-23 | 33553 through 33557; 34721 through 34728; 35322 through 35329; 35670; 38481 through 38485; 38584 through 38586; and 38723 through 38727. |
| A1754001-25 | 32795 through 32800; 33558 through 33569; 33779 through 33790; 34636 through 34653; 34968 through 34984; 35159 through 35176; 37903 through 37906; 38174 through 38193; 38502 through 38506; 38566 through 38575; and 38817 through 38836. |

**Figure 2 of Paragraph (c) of This AD—Affected Airplanes**

| Muffler part No. | Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company) airplanes |
|---|---|
| A1754001-23 | Model 172 Serial numbers (S/Ns) 17259224 and up; Model 172R S/Ns 80001 and up; and Model 172S S/Ns 8001 and up. |
| A1754001-25 | Model 172 S/Ns 17256513 and up; Model 172R S/Ns 80001 and up; 172S S/N 8001 and up; and Model 177 S/N 1770001 and up. |

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote™

2023-2-17 N/M
AD NUMBER

# Carry-Thru Spar Failure

| COMPLIANCE DATE | TOTAL TIME AT COMPLIANCE | TACH OR RECORDING METER TIME AT COMPLIANCE | METHOD OF COMPLIANCE | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|
| | | | | |
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Amendment 39-22324; Docket No. FAA-2020-1078; Project Identifier AD-2020-00716-A.

**(a) Effective Date**

This airworthiness directive (AD) is effective March 20, 2023.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Textron Aviation Inc. (Type Certificate previously held by Cessna Aircraft Company) Model 210N, 210R, P210N, P210R, T210N, T210R, 177, 177A, 177B, 177RG, and F177RG airplanes, all serial numbers, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 5310, Fuselage Main, Structure.

**(e) Unsafe Condition**

This AD was prompted by the in-flight break-up of a Model T210M airplane, due to fatigue cracking of the carry-thru spar that initiated at a corrosion pit and subsequent corrosion reports on other Model 210-series and Model 177-series airplanes. The FAA is issuing this AD to detect and correct cracking, corrosion, and other damage of the carry-thru spar lower cap, which, if not corrected, could lead to the carry-thru spar being unable to support the required structural loads and could result in separation of the wing and loss of airplane control.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Visual Inspection**

Within 200 hours time-in-service (TIS) after the effective date of this AD or within 12 calendar months after the effective date of this AD, whichever occurs first, prepare the carry-thru spar lower cap for inspection by following steps 4 and 5 of the Accomplishment Instructions in Textron Aviation Mandatory Single Engine Service Letter, SEL-57-08, Revision 2, dated August 3, 2020 (Textron SEL-57-08R2); or Textron Aviation Mandatory Single Engine Service Letter, SEL-57-09, Revision 1, dated August 3, 2020 (Textron SEL-57-09R1), as applicable to your airplane model. Visually inspect the carry-thru spar lower cap (including the lower surface, upper surface, and edge) with a 10X magnification lens looking for corrosion, cracking, and damage. You are not required to inspect the lower cap to web radius, spar web, upper cap, or lugs. Refer to the 'Spar Dimensions' and the 'Spar Detail' figures on page 7 of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, for the location of the specific spar features.

(1) If there is any cracking, before further flight, remove the carry-thru spar from service.

(2) If there is damage or evidence of previous removal of corrosion (blending), before further flight, either remove the carry-thru spar from service or repair the area using a method approved as specified in paragraph (n) of this AD. Comply with the requirements in paragraph (h) of this AD before further flight.

(3) If there is any corrosion, before further flight, remove the corrosion in the affected area by following steps 6.B.(1) through (7) of the Accomplishment Instructions in Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, and then mechanically measure the depth of the blended area using a straight edge and feeler gauge or a depth gauge micrometer.

(i) If the material removed in the blended area exceeds the allowable blend limits specified in table 1 (including the notes) of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, before further flight, either remove the carry-thru spar from service or repair the area using a method approved as specified in paragraph (n) of this AD. Comply with the requirements in paragraph (h) of this AD before further flight.

(ii) If the material removed in the blended area does not exceed the allowable blend limits specified in table 1 (including the notes) of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model, comply with the requirements in paragraph (h) of this AD before further flight.

**(Continued on page 2)**

(4) If the visual inspection did not detect corrosion, cracking, or damage and there is no evidence of previous removal of corrosion, comply with the requirements in paragraph (h) of this AD within 200 hours TIS after the effective date of the AD or within 12 calendar months after the effective date of the AD, whichever occurs first.

**(h) Eddy Current Inspection**

(1) At the applicable compliance time required by paragraph (g) of this AD, complete an eddy current inspection of the carry-thru spar lower cap for cracking, corrosion, and damage in the following areas in accordance with step 7 of the Accomplishment Instructions in Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model.

(i) The kick area as depicted in the `Spar Dimensions' figure on page 7 of Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane. You must complete an eddy current inspection of the lower cap kick area of your airplane regardless of whether corrosion was found and removed as a result of the visual inspection in paragraph (g) of this AD.

(ii) All areas where corrosion was found and removed as a result of the inspection in paragraph (g) of this AD.

(2) If there is any cracking, before further flight, remove the carry-thru spar from service.

(3) If there is any damage, before further flight, either remove the carry-thru spar from service or repair the area using a method approved as specified in paragraph (n) of this AD. After completing the repair, repeat the eddy current inspection of the repaired area before further flight.

(4) If there is any corrosion, before further flight, remove the corrosion by following the requirements in paragraph (g)(3) of this AD. You must repeat the eddy current inspection and comply with paragraph (h) of this AD for the area where the additional material was removed, but you do not have to repeat the eddy current inspection of the kick area.

**(i) Corrosion Protection**

Within 12 calendar months after the effective date of this AD, apply protective coating and corrosion inhibiting compound (CIC) by following steps 9 and 10 of the Accomplishment Instructions in Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model.

**(j) Installation Prohibition**

As of the effective date of this AD, do not install on any airplane a carry-thru spar unless it has been inspected as required by paragraphs (g) and (h) of this AD and corrosion protection applied as required by paragraph (i) of this AD.

**(k) Reporting Requirement**

Within 30 days after completing the inspections required by this AD or within 30 days after the effective date of this AD, whichever occurs later, report to the FAA by email ( *Wichita-COS@faa.gov*) all information requested in the Carry-Thru Spar Inspection Report Attachment to Textron SEL-57-08R2 or Textron SEL-57-09R1, as applicable to your airplane model.

**(l) Credit for Previous Actions**

(1) You may take credit for the visual inspection and corrosion removal required by paragraph (g) of this AD if you performed the visual inspection and corrosion removal before the effective date of this AD using Textron Aviation Mandatory Single Engine Service Letter SEL-57-08, dated November 1, 2019 (Textron SEL-57-08); Textron Aviation Mandatory Single Engine Service Letter SEL-57-08, Revision 1, dated November 19, 2019 (Textron SEL-57-08R1); Textron Aviation Mandatory Single Service Letter SEL-57-09, dated November 19, 2019 (Textron SEL-57-09); Textron Aviation Mandatory Single Engine Service Letter SEL-57-06, dated June 24, 2019 (Textron SEL-57-06); Textron Aviation Mandatory Single Engine Service Letter SEL-57-06, Revision 1, dated November 19, 2019 (Textron SEL-57-06R1); Textron Aviation Mandatory Single Engine Service Letter, SEL-57-07, dated June 24, 2019 (Textron SEL-57-07); or Textron Aviation Mandatory Single Engine Service Letter, SEL-57-07, Revision 1, dated November 19, 2019 (Textron SEL-57-07R1).

(2) You may take credit for the eddy current inspection of the lower cap kick area and all locations where corrosion was removed on the carry-thru spar lower cap and the corrosion removal as specified in paragraph (h) of this AD if you performed the eddy current inspection and corrosion removal required before the effective date of this AD using Textron SEL-57-08, Textron SEL-57-08R1, Textron SEL-57-06, Textron SEL-57-06R1, Textron SEL-57-07, Textron SEL-57-07R1, or Textron SEL-57-09.

(3) You may take credit for the corrosion protection required by paragraph (i) of this AD if you performed those actions before the effective date of this AD using Textron SEL-57-08, Textron SEL-57-08R1, or Textron SEL-57-09.

(4) To take credit for any previous action, you must have provided a completed Carry-Thru Spar Inspection Report, an attachment to Textron SEL-57-06, Textron SEL-57-06 R1, Textron SEL-57-07, Textron SEL-57-07R1, Textron SEL-57-08, Textron SEL-57-08R1, or Textron SEL-57-09 to Textron Aviation Inc. before the effective date of this AD, or you must comply with paragraph (k) of this AD within 30 days after the effective date of this AD.

**(m) Special Flight Permit**

(1) This AD prohibits a special flight permit if the inspection identifies cracking in the carry-thru spar.

(2) Special flight permits, as described in 14 CFR 21.197 and 21.199, may be issued for airplanes on which corrosion was identified to operate to a location where the requirements of this AD can be accomplished.

(3) Special flight permits, as described in 14 CFR 21.197 and 21.199, may be issued for an airplane demonstrating evidence of previous blending for which credit for previous actions, as defined in paragraph (l), cannot be granted or for an airplane demonstrating any damage other than corrosion or cracking, but concurrence by the Manager, Wichita ACO Branch, FAA is required before issuance of the special flight permit.

**(Continued on page 3)**



Send requests for a special flight permit to your local Flight Standards District Office.

**(n) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Wichita ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (o) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by a Textron Aviation, Inc. Unit Member (UM) of the Textron Organization Designation Authorization (ODA), that has been authorized by the Manager, Wichita ACO Branch, to make those findings. To be approved, the repair, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(o) Related Information**

For more information about this AD, contact Bobbie Kroetch, Aviation Safety Engineer, Wichita ACO Branch, FAA, 1801 Airport Road, Wichita, KS 67209; phone: (316) 946-4155; email: *bobbie.kroetch@faa.gov* or *Wichita-COS@faa.gov*.

**(p) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Textron Aviation Mandatory Single Engine Service Letter, SEL-57-08, Revision 2, dated August 3, 2020.

(ii) Textron Aviation Mandatory Single Engine Service Letter, SEL-57-09, Revision 1, dated August 3, 2020.

(3) For service information identified in this AD, contact Textron Aviation Inc., One Cessna Boulevard, Wichita, KS 67215; phone: (316) 517-6061; email: *structures@txtav.com*; website: *support.cessna.com*.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: *fr.inspection@nara.gov*, or go to: *www.archives.gov/federal-register/cfr/ibr-locations.html*.

Issued on February 1, 2023.

Christina Underwood, Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.

AD's REQUIRING ADDITIONAL
MAJOR REPAIR & ALTERATION
FACTORY SERVICE NOTES OR

ADs REQUIRING ADDITIONAL COMPLIANCE

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

FACTORY SERVICE NOTES (SB

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

70-24-4 N/R
AD NUMBER

# Fuel Shut Off Valve

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT TOTAL TIME | NEXT COMPL. DUE AT DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 11/15/00 | 1647. | | | | 1747.0 | |
| 1/22/02 | 1700.2 | | OPS CHECK OK | | 1800.2 | Dave Kapica: AP31800359 |
| 2/20/03 | 1747.50 | | OPS CHECK OK | | 1847.50 | [illegible] AP 2346866 |
| 5/13/04 | 1812.3 | | OPS CHECK OK | | 1912.3 | [illegible] AP 2346866 |
| 6/9/05 | 1895.5 | | OPS CHECK OK | | 1995.5 | [illegible] AP 2346866 |
| 7/6/06 | 1935.3 | | OPS CHECK OK | | 2035.3 | [illegible] AP 2346866 |
| 8/6/07 | 1967.3 | | OPS CHECK - OK | | 2067.3 | [illegible] AP 2346866 |
| 8/29/08 | 1994.3 | | OPS CHECK OK | | 2094.3 | [illegible] 2346866 |
| 9/18/09 | 2003.9 | | OPS CHECK - OK | | 2103.9 | [illegible] 2346866 |
| 9/28/10 | 2012.8 | | OPS CHECK - OK | | 2112.8 | [illegible] 2346866 |
| 3/11/11 | 2018.0 | | OPS CHECK - OK | | 2018.0 | [illegible] 2346866 |
| 4/30/12 | 2055.6 | | OPS CHECK - OK | | 2155.6 | [illegible] 2346866 |
| 4/25/13 | 2071.6 | | OPS CHECK - OK | | 2176.6 | [illegible] 2346866 |
| 5/1/14 | 2093.4 | | OPS CHECK - OK | | 2193.4 | [illegible] 2346866 |
| 5/14/15 | 2104.5 | | OPS CHECK - OK | | 2204.5 | [illegible] 2346866 |
| 6/1/16 | 2111.0 | | OPS CHECK - OK | | 2211.0 | [illegible] 2346866 |

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Amendment 39-1114. Applies to Cessna 177 Series (Serial Numbers 17700001 thru 17701530) Airplanes.

Compliance required as indicated, unless already accomplished.

To assure that the fuel shutoff valve will return to the full open position after being shut off, accomplish either Paragraph A or B as follows:

A. Within 50 hours time in service after the effective date of this AD and thereafter at intervals not to exceed 100 hours time in service from the date of the last inspection, accomplish the following:

1. Visually inspect the operation of the fuel shutoff valve by removing the safety wire between the knob and bracket. Then pull the knob out to the full closed position followed by moving the knob forward to the full open position.

2. Check the fuel shutoff valve arm at the firewall to assure that it has returned to the full open position.

3. If the inspection discloses that the fuel shutoff valve is operating normally, reinstall .018 mild steel wire between the knob and bracket.

4. If the inspection discloses that bending of the fuel shutoff valve flexible control wire occurs between the firewall support and the shutoff valve which prevents the fuel shutoff valve from returning to the full open position, prior to further flight make the necessary replacements, adjustments or repairs to assure proper fuel shutoff valve operation, and reinstall .018 mild steel wire between the knob and bracket or alternatively install a heavier fuel shutoff valve control cable P/N S2113-1 and associated parts in accordance with Cessna Service Letter SE70-24, dated September 25, 1970, or later FAA approved revision or any other method approved as an equivalent by the Chief, Engineering and Manufacturing Branch, FAA, Central Region.

B. Within 50 hours time in service after the effective date of this AD, install heavier fuel shutoff valve control cable P/N S2113-1 and associated parts in accordance with Cessna Service Letter SE70-24, dated September 25, 1970, or later FAA approved revision or any other method approved as an equivalent by the Chief, Engineering and Manufacturing Branch, FAA, Central Region.

C. When the replacement of the heavier fuel shutoff valve control cable P/N S2113-1 and associated parts described in either Paragraphs A(4) or B of this AD have been accomplished, the inspections required by this AD are no longer required.

This amendment becomes effective December 8, 1970.

AD REQUIRING ADDITIONAL COMPLIANCE

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

FACTORY SERVICE NOTES OR

AD Number _____ (continued)

Page No. 2

adNote

Aircraft Registration No. N30553

Type Aircraft C177A

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT TOTAL TIME | NEXT COMPL. DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 7/1/2017 | 2119.5 | | OPS CHECK - OK | | 2219.5 | [signature] 2346866 |
| 7/11/2018 | 2127.4 | | OPS CHECK - OK | | 2227.4 | [signature] 2346866 |
| 7/14/2019 | 2136.65 | | OPS CHECK - OK | | 2236.65 | [signature] 2346866 |
| 7/10/2020 | 2192.4 | | OPS CHECK-OK | | 2242.4 | [signature] 2346866 |
| 7/21/2021 | 2155.6 | | OPS CHECK-OK | | 2255.6 | [signature] 2346866 |
| 7/30/2022 | 2262.7 | | OPS CHECK-OK | | 2262.7 | [signature] 2346866 |
| 3/14/2023 | 2165.6 | | OPS CHECK-OK | | 2265.6 | [signature] 2346866 |
| 7/1/2024 | 2169.1 | | OPS CHECK-OK | | 2267.1 | [signature] 2346866 |

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N30553 AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

72-3-3 Rev. 3 N/R AD NUMBER

## Wing Flap Jack Screw

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMP. DUE AT TOTAL TIME | NEXT COMP. DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 11/15/00 | 1647 | | | 11/15/0. | | See Logbook #4 |
| 1/22/02 | 1700.2 | | BY INSPECTION | | R00.2 | Dave Kapica A&P311800359 |
| 3/6/02 | 1747.30 | | By Inspection | | 1847.30 | PW CH A&P 2346866 |
| 5/17/04 | 1812.3 | | BY INSPECTION | | 19127 | PW CH A&P 2346866 |
| 6/9/05 | 1895.5 | | BY INSPECTION | | 1995.5 | PW CH A&P 2346866 |
| 7/6/06 | 1935.3 | | BY INSPECTION | | 2035.3 | PW CH A&P 2346866 |
| 8/6/07 | 1967.3 | | BY INSPECTION | | 2067.3 | PW CH A&P 2346866 |
| 8/29/08 | 1994.3 | | BY INSPECTION | | 2094.3 | PW CH A&P 2346866 |
| 9/18/09 | 2003.9 | | BY INSPECTION | | 2103.9 | PW CH A&P 2346866 |
| 9/28/10 | 2012.8 | | BY INSPECTION | | 2112.8 | PW CH A&P 2346866 |
| 3/11/11 | 2018.0 | | BY INSPECTION | | 2118.0 | PW CH A&P 2346866 |

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Amendment 39-1365 as amended by Amendment 39-1431 and Amendment 39-1468 is further amended by Amendment 39-4930. Applies to the following airplanes: Models 150F, G, H, J, K, L (Serial Numbers 15061533 through 15072629), F150F, G, H, J, K, L (Serial Numbers F15000001 through F15000736, A150K, L (Serial Numbers A1500001 through A1500277), FA150K, L (Serial Numbers FA1500001 through FA1500161), 172F, G, H, I, K, L (Serial Numbers 17251823 through 17259904), F172F, G, H, K (Serial Numbers F17200068 through F17200804), R172E, F, G, H (Serial Numbers R1720001 through R1720494), FR172E, F, G, H (Serial Numbers FR17200001 through FR17200305), 177, 177A, B (Serial Numbers 17700001 through 17701633), 177RG (Serial Numbers 177RG0001 through 177RG0212), F177RG (Serial Numbers F177RG0001 through F177RG0042), 182E, F, G, H, J, K, L, M, N (Serial Numbers 18253599 through 18260698), A182J, K, L, M, N (Serial Numbers A18200001 through A18200136), 205, 205A (Serial Numbers 205-0001 through 205-0577), 206 (Serial Numbers 2060001 through 2060275), P206, P206A, B, C, D, E and TP206A, B, C, D, E (Serial Numbers P206-0001 through P206-0647), U206, U206A, B, C, D, E and TU206A, B, C, D, E (Serial Numbers U206-0276 through U20601673), 207 and T207 (Serial Numbers 20700001 through 20700205), 210D, E, F, G, H, J, K (Serial Numbers 21058221 through 21059470), T210F, G, H, J (Serial Numbers T210-0001 through T210-0454).

Compliance required as indicated, unless already accomplished.

To prevent inadvertent retraction of wing flap and to insure positive operation of the electrical wing flap actuators, accomplish the following:

A. On all aircraft with more than 100 hours time in service, within the next 25 hours time in service after the effective date of this AD, unless already accomplished within the previous 75 hours time in service, and thereafter at intervals not to exceed 100 hours time in service, visually inspect the actuator jack screw for condition of lubricant and presence of contamination and scale in accordance with the procedure described in Cessna Service Letter SE70-16, Supplement 1, dated July 10, 1970, or later FAA-approved revision. If any of the conditions prescribed in the inspection criteria are noted, prior to further flight, remove, clean and relubricate the actuator jack screw in accordance with Cessna Service Letter SE70-16, dated June 12, 1970, or later FAA-approved revision, or any equivalent procedure approved by Chief, Engineering and Manufacturing Branch, FAA, Central Region.

B. On all aircraft with more than 500 hours time in service, within the next 25 hours time in service after the effective date of this AD, unless already accomplished with the previous 75 hours time in service, remove, clean and relubricate the actuator jack screw in accordance with the procedure described in Cessna Service Letter SE70-16, dated June 12, 1970, or later FAA-approved revision, or any equivalent procedure approved by Chief, Engineering and Manufacturing Branch, FAA, Central Region.

C. In addition, on all aircraft at each annual inspection, or at intervals not to exceed 12 months, whichever occurs first, remove, clean and relubricate the actuator jack screw in accordance with the procedure described in Cessna Service Letter SE70-16, dated June 12, 1970 or later FAA-approved revision or any equivalent procedure approved by Chief, Engineering and Manufacturing Branch, FAA, Central Region.

NOTE: Compliance with Paragraphs A, B and C commenced on all applicable airplanes, except the Models A150K, and A150L, on July 28, 1970, commenced on Models A150K and A150L airplanes on November 10, 1970.

NOTE: Cessna Service Letter SE70-16, Supplement 2, dated August 28, 1970, specified some brand names of Molybdenum Disulfide Grease.

D. On or before January 1, 1973, modify the applicable aircraft in accordance with Cessna Service Letter SE72-2, Supplement 1, dated March 24, 1972, or alternatively Cessna Service Letter SE72-17 (Revision 1), dated January 12, 1973.

NOTE: The snubbers installed on certain airplanes per Cessna Service Letter SE72-2, Supplement 1, are not required with actuators specified by Cessna Service Letter SE72-17 (Revision 1).

E. Upon compliance with Paragraph D, the requirements of Paragraphs A, B and C are no longer applicable.

F. An equivalent method of compliance with the AD may be used if approved by Aircraft Certification Office, Room 100, 1801 Airport Road, Wichita, Kansas 67209, telephone (316) 946-4400.

NOTE: The FAA recommends that the procedure for maintaining the flap system as specified in applicable Cessna Service Manuals be followed.

Amendment 39-1365 supersedes AD 70-15-16, (Amendments 39-1050 and 39-1104).

Amendment 39-1365 became effective February 1, 1972.

Amendment 39-1431 became effective April 13, 1972.

Amendment 39-1468 became effective June 27, 1972.

This Amendment 39-4930 becomes effective October 15, 1984.

ADs REQUIRING ADDITIONAL COMPLIANCE

ADs TERMINATED OR SUPERSEDED

APPLICABLE SERVICE BULLETINS

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

FACTORY SERVICE NOTES OR

AD Number (continued)

Page No. 2

**adNote**

Aircraft Registration No.

Type Aircraft

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMPL. DUE AT TOTAL TIME | NEXT COMPL. DUE AT DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 4/30/2012 | 2055.6 | | BY INSPECTION PER SE70-16 | | 2155.6 | [signature] 2346866 |
| 4/25/2013 | 2071.6 | | BY INSPECTION PER SE70-16 | | 2171.6 | [signature] 2346866 |
| 5/1/2014 | 2093.4 | | BY INSPECTION PER SE70-16 | | 2193.4 | [signature] 2346866 |
| 5/14/2015 | 2104.5 | | BY INSPECTION PER SE70-16 | | 2204.5 | [signature] 2346866 |
| 6/1/2016 | 2111.0 | | BY INSPECTION PER SE70-16 | | 2211.0 | [signature] 2346866 |
| 7/1/2017 | 2119.5 | | BY INSPECTION PER SE70-16 | | 2219.5 | [signature] 2346866 |
| 7/11/2018 | 2127.4 | | BY INSPECTION PER SE70-16 | | 2227.4 | [signature] 2346866 |
| 7/14/2019 | 2136.65 | | BY INSPECTION PER SE70-16 | | 2236.65 | [signature] 2346866 |
| 7/10/2020 | 2142.4 | | BY INSPECTION PER SE70-16 | | 2242.4 | [signature] 2346866 |
| 7/21/2021 | 2155.6 | | BY INSPECTION PER SE70-16 | | 2255.6 | [signature] 2346866 |
| 7/30/2022 | 2162.7 | | BY INSPECTION PER SE70-16 | | 2262.7 | [signature] 2346866 |
| 3/14/2023 | 2165.6 | | BY INSPECTION PER SE70-16 | | 2265.6 | [signature] 2346866 |
| 7/1/2024 | 2169.1 | | BY INSPECTION PER SE70-16 | | 2269.1 | [signature] 2346866 |

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Cessna

TAKE YOUR CESSNA HOME FOR SERVICE AT THE SIGN OF THE CESSNA SHIELD"

# single-engine SERVICE LETTER

MARKETING DIVISION • CESSNA AIRCRAFT COMPANY
WICHITA, KANSAS 67201 • CABLE ADDRESS / CESSCO WICHITA

June 12, 1970

SE70-16

SUBJECT: FLAP ACTUATOR MAINTENANCE

AIRCRAFT AFFECTED:

All single engine aircraft equipped with electric wing flaps.

REASON FOR LETTER:

Deteriorated lubrication on the flap actuator jack screw can result in inadvertent retraction of the wing flaps; therefore, it is important that 100 hour inspections plus annual cleaning and lubrication be accomplished as recommended.

Information on this subject has been published previously in aircraft Service Manuals, Service Letters SE68-1 and SE68-33.

ACTION REQUIRED:

1. Inspect actuator jack screw for condition of lubricant at each 100 hour inspection.

2. Clean and relubricate actuator jack screw at least every 12 months or more often if indicated by inspection results.

Note: Details of inspection, cleaning and lubrication procedures are shown on the reverse side of this Service Letter.

COMPLIANCE TIME:

If flap actuator jack screw has not been cleaned and lubricated within the past 12 months, Item #2 above should be accomplished as soon as possible but no later than the next oil change or 50 hours of operation.

REMARKS:

This above subject was also covered recently in a FAA telex notice to all FAA Field Offices.

(Owner Notification System - No. 2)

**********

THE CESSNA AIRCRAFT COMPANY

INSPECTION

1. Gain access to the wing flap actuator by removing appropriate inspection plates on the lower surface of the wing.
2. Expose jack screw by operating flaps to the full down position.
3. Wipe a small amount of lubricant from the jack screw with a rag and examine for condition. Lubricant should not be dirty, sticky, gummy or frothy in appearance.
4. Inspect wiped area on jack screw for the presence of any hard scale deposit. Previous wiping action will have exposed bare metal if no deposit is present.
5. If any of the above conditions exist, clean and relubricate jack screw as detailed below.

CLEANING AND LUBRICATION

1. Remove actuator from the aircraft in accordance with Service Manual instructions.
2. Remove all existing lubricant from the jack screw and torque tube:
   a. Run the nut assembly to the end of the jack screw away from the gear box.
   b. Soak the nut assembly and jack screw in a stoddard solvent.

      NOTE: Care must be taken to prevent the solvent from entering the gear box. The gear box lubricant is not affected and should not be disturbed.

   c. After soaking, clean the entire length of the jack screw with a wire brush, rinse with solvent, and dry with compressed air (Do not disassemble the nut and ball retainer assembly).
   d. Run a cloth through the torque tube to remove any excess lubricant.
3. Relubricate the jack screw with MIL-G-21164 (Molybdenum Disulfide Grease) as follows:
   a. Rotate the nut down the screw toward the motor.
   b. Coat the screw and thread end of the nut with the grease and run the nut to full extension.
   c. Repeat the process and pack lubricant in the cavity between the nut and ball retainer at the threaded end of the nut.
   d. Repeat the process and work the nut back and forth several times.
   e. Remove excess grease.
4. Reinstall actuator in aircraft.

Cessna.
SKILL AND SERVICE

"TAKE YOUR CESSNA HOME FOR SERVICE AT THE SIGN OF THE CESSNA SHIELD"

# single-engine SERVICE LETTER

MARKETING DIVISION • CESSNA AIRCRAFT COMPANY
WICHITA, KANSAS 67201 • CABLE ADDRESS / CESSCO WICHITA

July 10, 1970

SE70-16
(Supplement #1)

SUBJECT: FLAP ACTUATOR MAINTENANCE

AIRCRAFT AFFECTED:

All single engine aircraft equipped with electric wing flaps.

REASON FOR LETTER:

To expand and clarify the inspection requirements for electric wing flap actuator jack screws.

This information supersedes the inspection procedures called out in SE70-16 dated June 12, 1970.

ACTION REQUIRED:

The following method of inspection is to be used in determining the condition of the lubricant used on flap actuator jack screws at each 100 hour inspection.

1. Gain access to the wing flap actuator by removing appropriate inspection plates on the lower surface of the wing.
2. Expose jack screw by operating flaps to the full down position.
3. Using a clean, dry, white cloth, wipe off the existing lubrication from a 1 to 2 inch section of the jack screw. Examine the cloth for lubrication texture to determine if it is caked or notably changed in color as compared to new grease of the proper specification. The objective is to ascertain that the lubricant has retained its original properties.
4. Scrape inside several grooves of the screw with a pocket knife and examine knife edge for small dark carbon type flakes (lightly coating the edge of the knife with clear petroleum jelly will cause the flakes to adhere to the knife edge for easier detection).
5. Visually examine the cleaned section of the jack screw to see that the base metal is exposed.

Continued.....

| Manufacturers Designation | Manufacturers Name and Address |
|---|---|
| Everlube 211-G Moly Grease | Everlube Corporation 6940 Farmdale Avenue No. Hollywood, California, 91605 |
| ROYCO 64C | Royal Lubricants Co. River Road Hanover, New Jersey, 07936 |

(Owner Notification System - No. 1)

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THE CESSNA AIRCRAFT COMPANY



Cessna

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# single-engine SERVICE LETTER

MARKETING DIVISION • CESSNA AIRCRAFT COMPANY
WICHITA, KANSAS 67201 • CABLE ADDRESS / CESSCO WICHITA

January 21, 1972

SE72-2

SUBJECT: WING FLAP ACTUATOR MODIFICATION

AIRCRAFT AFFECTED: All Single Engine Aircraft with Electric Wing Flaps

Single Engine Service Letters SE70-16 and Supplements 1 and 2 covered the proper inspection and lubrication that would result in reliable operation of the flap actuator jack screws on single engine aircraft equipped with electric wing flaps.

To further improve the flap system on these airplanes and to avoid any possibility of inadvertent flap actuator malfunctions, a design change was phased into production beginning in late 1971.

To also provide greater reliability for earlier aircraft, the following two programs have been developed for modifying flap actuators on in-service aircraft.

I. AIRCRAFT WITH STRUT SUPPORTED WINGS

Service Kit SK150-37A applies to this group of aircraft and provides necessary parts and instructions for adding a hydraulic snubber to existing flap actuators. This snubber does not affect normal extension or retraction of the wing flaps but protects against inadvertent flap retraction due to actuator slippage.

| KIT NUMBER | MODELS AFFECTED | SERIALS AFFECTED | SUGGESTED LIST PRICE |
|---|---|---|---|
| SK150-37A | 150 | 15061533 thru 15072629 | $21.30 (A) |
| | F150 | F150-0001 thru F15000738 | |
| | A150 | A1500001 thru A1500277 | |
| | FA150 | FA1500001 thru FA1500121 | |
| | FRA150 | FRA1500122 thru FRA1500161 | |
| | 172 | 17251823 thru 17259904 | |
| | F172 | F172-0086 thru F1720804 | |
| | R172 | R17200001 thru R17200494 | |
| | FR172 | FR17200001 thru FR17200306 | |
| | 182 | 18253599 thru 18260698 | |
| | A182 | A182-0001 thru A18200136 | |
| | 205 | 205-0001 thru 205-0577 | |
| | 206 | 206-0001 thru 206-0275 | |
| | U206/TU206 | U206-0276 thru U20601673 | |
| | P206/TP206 | P206-0001 thru P20600647 | |
| | 207/T207 | 20700001 thru 20700205 | |
| | 210 | 21058221 thru 21058818 | |
| | T210 | T210-0001 thru T210-0197 | |

Continued.....

II. AIRCRAFT WITH CANTILEVER WINGS

The Service Kits shown below apply to this group of aircraft and provide parts and instructions for installing the new recirculating ball screw assembly (now being used on production aircraft).

| KIT NUMBER | MODELS AFFECTED | SERIALS AFFECTED | SUGGESTED LIST PRICE |
|---|---|---|---|
| SK177-17A | 177 | 17700001 thru 17701023 | $55.20 (A) |
| SK177-18A | 177<br>177RG<br>F177RG | 17701024 thru 17701633<br>177RG0001 thru 177RG0212<br>F177RG0001 thru F177RG0042 | $48.60 (A) |
| SK210-68A | 210<br>T210 | 21058937 thru 21059470<br>T210-0308 thru T210-0454 | $23.70 (A) |
| SK210-69 | 210<br>T210 | 21058819 thru 21058936<br>T210-0198 thru T210-0307 | $64.40 (A) |

(Service Kits are available through the Cessna Dealer Organization.)

RETROFITTING OF ALL AIRCRAFT WILL BE REQUIRED BY JANUARY 1, 1973.

Because this modification is required on all aircraft, a parts allowance (based on model year) will be provided for all aircraft. In addition, an installation labor allowance will be paid for all 1970 and 1971 models.

To be eligible for this cost allowance, modifications must be completed and a Credit Claim submitted by the following dates:

Domestic and Canada ..... February 1, 1973
Export ..... April 1, 1973

Service Letter SE70-16 requires cleaning, careful inspection and lubrication of the flap actuator at each 100 hours plus complete removal of the actuator at each annual inspection. Compliance with this Service Letter reduces these maintenance requirements ---- actuator screws, which have been modified, need only to be visually inspected at each 100 hour and annual inspection period and lubricated as required.

The subject of this Service Letter is covered by Airworthiness Directive 72-3-3, dated January 25, 1972.

Owners are urged to contact their dealers for further details concerning this important program.

(Owner Notification System - No. 2)

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ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

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THE CESSNA AIRCRAFT COMPANY

"TAKE YOUR CESSNA HOME FOR SERVICE AT THE SIGN OF THE CESSNA SHIELD"

# single-engine SERVICE LETTER

MARKETING DIVISION • CESSNA AIRCRAFT COMPANY
WICHITA, KANSAS 67201 • CABLE ADDRESS / CESSCO WICHITA

March 24, 1972

SE72-2
(Supplement #1)

SUBJECT: WING FLAP ACTUATOR MODIFICATION
(Supplemental)

AIRCRAFT AFFECTED:

All single engine aircraft with electric wing flaps.

REASON FOR LETTER:

Following is revised and supplemental information pertaining to Service Letter SE72-2, dated January 21, 1972.

* REVISIONS:

1. Spring-type spacers have been added to Service Kit SK150-37. These spacers are installed as shown in Figure 1 below and serve to locate the flap motor to actuator coupling centrally insuring proper engagement of the motor shaft and actuator shaft.

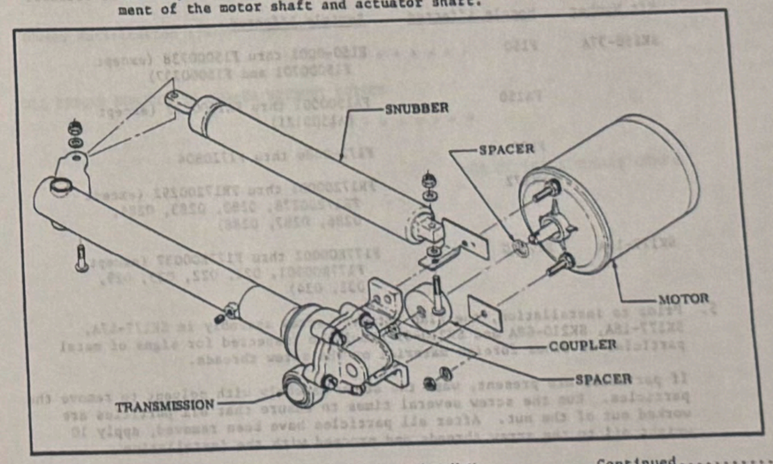


Figure 1. Spacer Installation.

Continued.....



NOs REQUIRING ADDITIONAL COMPLIANCE
MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)
FACTORY SERVICE NOTES 69

Aircraft which have already been modified per SK150-37 should have the spring spacers installed at the next convenient maintenance period. Spring spacers are available through the Cessna Dealer Organization.

| Part Number | Description | Qty. Req'd. | Suggested List Price |
|---|---|---|---|
| 0460203-1 | Spring Spacer | 2 | $0.09 (S) each |

Service Kits which contain the spacer will be identified as SK150-37B.

2. The wing rib modification necessary on Model 182 aircraft with long range tanks is also applicable to Model 205 aircraft with long range tanks. Service Kit SK150-37 (Section e) will be revised to reflect this requirement and will be identified as SK150-37B.

3. Wing flaps on early 1968 Model 210 aircraft (serials 21058937 thru 21059030 and T210-0308 thru T210-0378) will be full up (0°) when the ball nut is set at 0.12 ± .03" from the transmission housing.

   Flaps on aircraft after 21059030 and T210-0378 will be full down (30°) when the ball nut is set at 0.12 ± .03" from the transmission housing.

   Service Kit SK210-68A (Sections f and g) will be revised to clarify this point. Revised Service Kit instructions are dated February 29, 1972.

4. Reims aircraft affected serialization has been changed to read as follows:

| Kit Number | Models Affected | Serials Affected |
|---|---|---|
| SK150-37A | F150 | F150-0001 thru F15000738 (except F15000701 and F15000737) |
| | FA150 | FA1500001 thru FA1500122 (except FA1500121) |
| | F172 | F172-0086 thru F1720804 |
| | FR172 | FR17200001 thru FR17200292 (except FR17200278, 0280, 0283, 0284, 0286, 0287, 0288) |
| SK177-18A | F177RG | F177RG0002 thru F177RG0037 (except F177RG0001, 021, 022, 023, 029, 031, 034) |

5. Prior to installation, the flap actuator screw assembly in SK177-17A, SK177-18A, SK210-68A and SK210-69 should be inspected for signs of metal particles or other foreign material on the screw threads.

   If particles are present, wash the screw assembly with solvent to remove the particles. Run the screw several times to ensure that all particles are worked out of the nut. After all particles have been removed, apply 10 weight oil to the screw threads and proceed with the installation.

Continued.....



* MAINTENANCE REQUIREMENTS

Following is a summary of the periodic maintenance required on flap actuators:

| Model | |
|---|---|
| Pre-1972 (not modified per SE72-2) | Clean, inspect, and lubricate each 100 hours of operation and completely remove, clean, inspect, and lubricate at next annual inspection in accordance with Service Letter SE70-16.<br><br>Lubricant: MIL-G-211164 Grease |
| Pre-1972 (Modified per SE72-2) | Visually inspect at each 100 hour and annual inspection. Clean and lubricate as required.<br><br>Lubricant: 1) MIL-G-211164 Grease for strut supported wing aircraft.<br>2) No. 10 weight oil for cantilever wing aircraft. |
| 1972 and on | Visually inspect at each 100 hour and annual inspection. Clean and lubricate as required.<br><br>Lubricant: No. 10 weight oil |

(Owner Notification System - No. 2)

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ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

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THE CESSNA AIRCRAFT COMPANY

N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

# adNote

# Bendix Ignition Switch

76-7-12 Rev.1 N/R
AD NUMBER

| DATE | TOTAL TIME AT COMPL. | TACH OR RECORDING METER TIME AT COMPL. | METHOD OF COMPLIANCE | NEXT COMP. DUE AT TOTAL TIME | NEXT COMP. DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| | | | | 1747 | | Logbook # 4 |
| 11/15/00 | 1647 | | | | 1800.2 | Dave Kasica A&P311800359 |
| 1/22/02 | 1700.2 | | BY OPS CHECK | | 1847.50 | [illegible] A&P 2346866 |
| 3/20/03 | 1747.50 | | BY OPS CHECK | | 1912.3 | [illegible] A&P 2346866 |
| 5/13/04 | 1812.3 | | BY OPS CHECK | | 1995.5 | [illegible] A&P 2346866 |
| 6/9/05 | 1895.5 | | BY OPS CHECK | | 2035.3 | [illegible] A&P 2346866 |
| 7/6/06 | 1935.3 | | BY OPS CHECK | | 2067.3 | [illegible] A&P 2346866 |
| 8/6/07 | 1967.3 | | BY OPS CHECK | | 2094.3 | [illegible] A&P 2346866 |
| 8/29/08 | 1994.3 | | BY OPS CHECK | | 2103.9 | [illegible] A&P 2346866 |
| 9/18/09 | 2003.9 | | BY OPS CHECK | | 2112.8 | [illegible] A&P 2346866 |
| 9/29/10 | 20128 | | BY OSP CHECK | | 2118.0 | [illegible] A&P 2346866 |
| 3/11/11 | 2018.0 | | BY OPS CHECK | | | |

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Amendment 39-2575 as amended by Amendment 39-3024. Applies to all aircraft employing magnetos and using Bendix ignition switches listed in the table below except switches identified by four digit date code (new) adjacent to the model number or a white dot (modified) on the support plate adjacent to the Bendix logo.

| Bendix Switches Switch Function | Rotary Action, Key or Lever Actuated Bendix (series) Part Numbers |
|---|---|
| Twist-to-Start | 10-357XXX, 10-126XXX |
| Twist-to-Start/ Push-To-Prime | 10-357XXX, 10-126XXX |
| Push-to-Start | 10-357XXX, 10-126XXX, 10-157XXX |

Compliance required as indicated:

1. For switches subject to this AD, conduct the following checks within the next 100 hours time in service and each 100 hours thereafter to detect possible switch malfunction.

A. Observing regular ground run-up procedures, allow the engine to reach operating temperatures and perform a normal magneto check.

B. With the engine at normal idle rotate the switch key or lever through the "OFF" detent to the extreme limit of its travel in the "OFF" direction.

C. If the engine stops firing, this indicates a normal switch.

D. If the engine continues to run with the switch in the extreme "OFF" direction indicating a malfunctioning switch, prior to the next flight, accomplish Part III outlined in Bendix Service Bulletin No. 583, dated April 1976, for Repair and Replacement or use an alternate method approved by Chief, Engineering and Manufacturing Branch, Eastern Region.

2. The aircraft may be flown in eccordance with FAR 21.197 to a place where these modifications can be accomplished.

3. The checks required by this AD may be performed by the pilot.

4. Upon submission by an operator with substantiating data an FAA Maintenance Inspector subject to prior approval of the Chief, Engineering and Manufacturing Branch, FAA Eastern Region may adjust the compliance times specified in this AD if the request contains substantiating data to justify the increase for the operator.

NOTE: If the engine continues to run when complying with paragraph 1 and repair or replacement cannot or will not be accomplished immediately, the magneto (primary circuit) should be grounded in accordance with Bendix Service Bulletin No. 583, dated April 1976.

Amendment 39-2575 was effective April 14, 1976.

This Amendment 39-3024 is effective August 30, 1977.

AD Number (continued) _____

Page No. 2

adNote

Aircraft Registration No. N30553

Type Aircraft C177A

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL DUE AT TOTAL TIME | NEXT COMPL DUE AT DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 4/3/2012 | 2055.6 | | BY OPS CHECK - OK | | 2155.6 | RWC 234686C |
| 4/25/2013 | 2071.6 | | BY OPS CHECK - OK | | 2171.6 | RWC 234686C |
| 5/1/2014 | 2093.4 | | BY OPS CHECK - OK | | 2193.4 | RWC 234686C |
| 5/14/2015 | 2104.5 | | BY OPS CHECK - OK | | 2204.5 | RWC 234686C |
| 6/1/2016 | 2111.0 | | BY OPS CHECK - OK | | 2211.0 | RWC 234686C |
| 7/1/2017 | 2119.5 | | BY OPS CHECK - OK | | 2219.5 | RWC 234686C |
| 7/11/2018 | 2127.4 | | BY OPS CHECK - OK | | 2227.4 | RWC 234686C |
| 7/14/2019 | 2136.65 | | BY OPS CHECK-OK | | 2236.65 | RWC 234686C |
| 7/1/2020 | 2142.4 | | BY OPS CHECK-OK | | 2242.4 | RWC 234686C |
| 7/21/2021 | 2155.6 | | BY OPS CHECK-OK | | 2255.6 | RWC 234686C |
| 7/30/2022 | 2162.7 | | BY OPS CHECK-OK | | 2262.7 | RWC 234686C |
| 2/14/2023 | 2165.6 | | BY OPS CHECK-OK | | 2265.6 | RWC 234686C |
| 7/1/2024 | 2169.1 | | BY OPS CHECK - OK | | 2269.1 | RWC 234686C |

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N30553
AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

C177A
TYPE AIRCRAFT

adNote

2011-10-9 R
AD NUMBER

## Seat Rails & Seat Assemblies

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL DUE AT TOTAL TIME | NEXT COMPL DUE AT DATE, TACH OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 4/3/2012 | | 2055.6 | BY INSPECTION | | 2155.6 | RWC 234686C |
| 4/25/2013 | | 2071.6 | BY INSPECTION | | 2171.6 | RWC 234686C |
| 5/1/2014 | | 2093.4 | BY INSPECTION | | 2204.5 | RWC 234686C |
| 5/14/2015 | | 2104.5 | BY INSPECTION | | 2211.0 | RWC 234686C |
| 6/1/2016 | | 2111.0 | BY INSPECTION | | 2219.5 | RWC 234686C |
| 7/1/2017 | | 2119.5 | BY INSPECTION | | 2227.4 | RWC 234686C |
| 7/11/2018 | | 2127.4 | BY INSPECTION | | 2236.65 | RWC 234686C |
| 7/14/2019 | | 2136.65 | BY INSPECTION | | 2242.4 | RWC 234686C |
| 7/1/2020 | | 2142.4 | BY INSPECTION | | 2255.6 | RWC 234686C |
| 7/21/2021 | | 2155.6 | BY INSPECTION | | 2262.7 | RWC 234686C |
| 7/30/2022 | | 2162.7 | BY INSPECTION | | 2265.6 | RWC 234686C |
| 2/14/2023 | | 2165.6 | BY INSPECTION | | | |

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Amendment 39-16690; Docket No. FAA-2010-1101; Directorate Identifier 2009-CE-013-AD.

**Effective Date**

(a)This airworthiness directive (AD) is effective June 17, 2011.

**Affected ADs**

(b)This AD supersedes AD 87-20-03 R2, Amendment 39-6669.

**Applicability**

(c)This AD applies to all serial numbers of the following Cessna Aircraft Company (Cessna) Models that are certificated in any category:

**Models**

(1) 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150K, A150L, A150M, F150F, F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, FA150M, FRA150L, and FRA150M

(2) 152, A152, F152, and FA152

(3) 170, 170A, and 170B

(4) 172, 172A, 172B, 172C, 172D, 172E, 172F (USAF T-41A), 172G, 172H (USAF T-41A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 172RG, F172D, F172E, F172F, F172G, F172H, F172K, F172L, F172M, F172N, F172P, FR172E, FR172F, FR172G, FR172H, FR172J, FR172K, P172D, R172E (USAF T-41B) (USAF T-41C and D), R172F (USAF T-41D), R172G (USAF T-41C or D), R172H (USAF T-41D), R172J, and R172K

(5) 175, 175A, 175B, and 175C

(6) 177, 177A, 177B, 177RG, and F177RG

(7) 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, and 180K

(8) 182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, F182P, F182Q, FR182, R182, T182, and TR182

(9) 185, 185A, 185B, 185C, 185D, 185E, A185E, and A185F

(10) 188, 188A, A188, A188A, 188B, A188B, and T188C

(11) 190

(12) 195, 195A, and 195B

(13) 206, P206, P206A, P206B, P206C, P206D, P206E, TP206A, TP206B, TP206C, TP206D, TP206E, TU206A, TU206B, TU206C, TU206D, TU206E, TU206F, TU206G, U206, U206A,U206B, U206C, U206D, U206E, U206F, and U206G

(14) 207, 207A, T207, and T207A

(15) 210, 210-5 (205), 210-5A (205A), 210A, 210B, 210C, 210D, 210E, 210F, 210G, 210H, 210J, 210K, 210L, 210M, 210N, 210R, P210N, P210R, T210F, T210G, T210H, T210J, T210K, T210L, T210M, T210N, and T210R

(16) T303

(17) 336

(18) 337, 337A, 337B, 337C, 337D, 337E, 337F, 337G, 337H, F337E, F337F, F337G, F337H, FT337E, FT337F, FT337GP, FT337HP, M337B, P337H, T337B, T337C, T337D, T337E, T337F, T337G, T337H, and T337H-SP

(See page 2)➔

AD Number 2011-10-9 R
(continued)
Page No. 2

adNote

Aircraft Registration No. N30553
Type Aircraft C177A

| DATE | TOTAL TIME AT COMPL | TACH OR RECORDING METER TIME AT COMPL | METHOD OF COMPLIANCE | NEXT COMPL DUE AT TOTAL TIME | NEXT COMPL DUE AT DATE, TACH, OR RECORDING METER TIME | AUTHORIZED SIGNATURE & NUMBER |
|---|---|---|---|---|---|---|
| 7/1/2024 | | 2169.1 | BY INSPECTION | | 2269.1 | Pwschl 2346866 |

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**Subject**

(d) Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 51; Standard Practices Structures.

**Unsafe Condition**

(e) This AD was prompted by reports of seats slipping on the rails where the primary latch pin for the pilot/copilot seat is not properly engaged in the seat rail/track and reports of the seat roller housing departing the seat rail. We are issuing this AD to prevent seat slippage or the seat roller housing from departing the seat rail, which may consequently cause the pilot/copilot to be unable to reach all the controls. This failure could lead to the pilot/copilot losing control of the airplane.

**Compliance**

(f) Comply with this AD within the compliance times specified, unless already done.

**Actions**

(g)For all airplanes, to address the unsafe condition described in paragraph (e) of this AD, you must do the following actions on the seat rails; seat rollers, washers, and axle bolts or bushings; seat roller housings and the tangs; and lock pin springs, unless already done, initially within the next 100 hours time-in-service (TIS) after the last inspection done following AD 87-20-03 R2 or within the next 12 calendar months after the effective date of this AD, whichever occurs first. Repetitively thereafter do the actions at intervals not to exceed every 100 hours TIS or every 12 months, whichever occurs first:

(1) Visually inspect the pilot and copilot seat rails for dirt and debris that may prevent engagement of the seat locking pins. Before further flight, after any inspection where dirt or debris is found, remove the dirt or debris found.

(2) Remove the seat from the seat rail.

(i) Remove the seat stops.

(ii) Disengage seat belt/shoulder harness from the seat, if necessary.

(iii) Raise vertical adjusting seats to maximum height.

(iv) Hold seat latches disengaged and slide the seat forward and aft to disengage rollers.

(v) Lift the seat out of the airplane.

(3) Inspect the diameter of each seat locking pin engagement hole in the pilot and copilot seat rails for excessive wear. Due to wear on the rail surface at the hole opening, we allow this measurement 0.020 of an inch below the surface of the rail. You must take this measurement somewhere between the surface of the rail or no more than 0.020 of an inch below the surface of the rail.

(i) If the diameter of any of the holes is 0.42 of an inch or more (see figure 1), before further flight, replace the rail.

**Aerotech Note:** Figure 1 & 2 that was at this location in the FAA's directive has been moved to page 3 to facilitate compilation of this Airworthiness Directive.

(ii) Rail replacement does not terminate the repetitive actions required in paragraph (g) of this AD.

(4) Visually inspect the seat rollers for flat spots and inspect the rollers and washers for binding. Assure all rollers and washers, which are meant to rotate, turn freely on their axles (or bushings if installed).

(i) Before further flight, replace any rollers with flat spots and any worn washers.

(ii) Before further flight, remove and clean the parts if there is any binding between the bores of the rollers, washers, or axles.

(iii) Do not lubricate the rollers, washers, or axles because the lubricant will attract dust and other particles that may cause binding.

(5) Inspect the thickness of the tang (see figure 2 and figure 3). Due to wear of the tang chafing against the seat rail, measure the tang thickness where the tang inner edges contact the seat rail.

(i) If the tang thickness measures less than 0.05 of an inch, before further flight replace the roller housing.

(ii) Replacement of the roller housing does not terminate the repetitive actions required in paragraph (g) of this AD.

**Aerotech Note:** Figure 3 that was at this location in the FAA's directive has been moved to page 3 to facilitate compilation of this Airworthiness Directive.

(6) Due to wear or deformation of the tangs, inspect the tang length from the inner edge of the tang to the outer edge (the bend area) of the roller housing (see figure 4).

**Aerotech Note:** Figure 4 that was at this location in the FAA's directive has been moved to page 3 to facilitate compilation of this Airworthiness Directive.

(i) The minimum measurement allowed for the remaining tang length is 0.230 inches remaining on either of the tangs, from the inner edge of the tang to the outer edge (the bend area) of the roller housing. If the measurement is less than 0.230 inches on either of the tangs, before further flight, replace the roller housing.

(ii) Replacement of the roller housing does not terminate the repetitive actions required in paragraph (g) of this AD.

(7) Inspect the springs that keep the lock pins in position in the rail holes for positive engagement action: Before further flight, replace any spring that does not provide positive engagement.

(8) Visually inspect the seat rails for cracks.

(i) If there are seat rail cracks that exceed the crack criteria in figure 5, before further flight, replace the seat rail.

(ii)Replacement of the seat rail does not terminate the repetitive actions required in paragraph (g) of this AD.

**Aerotech Note:** Figure 5 that was at this location in the FAA's directive has been moved to page 4 to facilitate compilation of this Airworthiness Directive.

(9) Reinstall the seat on the seat rail.

(i) Lift the seat into the airplane and place on the seat rail.

(ii) Hold seat latches disengaged and slide the seat aft and then forward to re-engage rollers.

(iii) Lower vertical adjusting seats to a comfortable height.

(iv) Reattach seat belt/shoulder harness to the seat, if previously attached to the seat.

(v) Reinstall the seat stops.

(10) Lift up the forward edge of each seat to eliminate vertical play of the seat locking pin in the engagement hole, and from this position, inspect the depth of engagement of each seat locking pin (see figure 2). If the rail is worn, this depth is measured from the worn surface, not the manufactured surface.

(i) If engagement of any of the seat locking pins measures less than 0.15 of an inch, before further flight, replace or repair any seat components necessary to achieve a seat pin engagement of a minimum of 0.15 of an inch.

(ii) Repair or replacement of necessary seat components does not terminate the repetitive actions required in paragraph (g) of this AD.

**Paperwork Reduction Act Burden Statement**

(h) A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave., SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

**Alternative Methods of Compliance (AMOCs)**

(i)(1) The Manager, Wichita 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. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2 )Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) AMOCs approved for AD 87-20-03 R2 are approved for this AD.

**Related Information**

(j) For more information about this AD, contact Gary Park, Aerospace Engineer, ACE-118W, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4123; fax: (316) 946-4107; e-mail: gary.park@faa.gov.

Issued in Kansas City, Missouri, on April 27, 2011.

John Colomy, Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

AEROTECH NOTE: See figures 1 thru 5 on page 3

ADs REQUIRING ADDITIONAL COMPLIANCE
PW Powerplant ENGINES
SPECIAL EQUIPMENT
MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)
FACTORY SERVICE NOTES 09

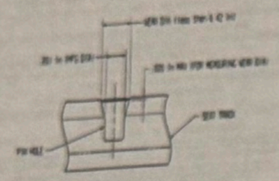


Figure 1. Diameter of seat pin locking engagement hole

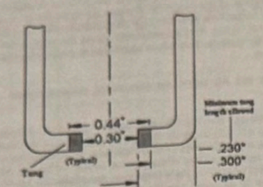



Figure 4. Closeup of seat roller housing and tang gap width

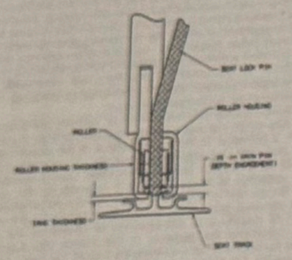
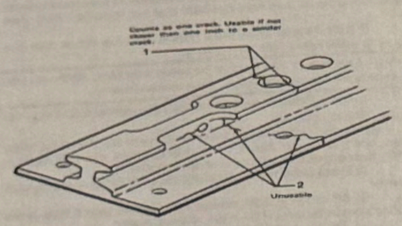


Figure 2. Seat locking pin detail engagement




Cracks as one crack. Usable if not closer than one inch to a similar crack.

REPLACE SEAT RAIL WHEN:

(1) Any portion of web or lower flange is cracked (index 2).
(2) Any crack in crown of rail is in any direction other than right angle to length of rail.
(3) Number of cracks on any one rail exceeds four, or any two cracks (index 1) are closer than one inch.

NOTE

Use of seat rail cargo tie-downs is not permissible on seat rails with cracks.

Figure 5. Seat rail

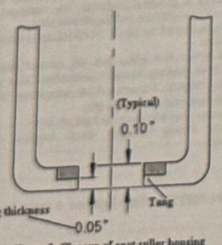



Figure 3. Closeup of seat roller housing and tang thickness

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)
FACTORY SERVICE NOTES (S)

Cowl Gasket

US Department of Transportation Federal Aviation Administration

# MAJOR REPAIR AND ALTERATION
## (Airframe, Powerplant, Propeller, or Appliance)

OMB No. 2120-0020 Exp. 01/31/2025 | Electronic Tracking Number | For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

**1. Aircraft**
- Nationality and Registration Mark: N30553
- Serial No.: 17701322
- Make: CESSNA
- Model: 177A
- Series:

**2. Owner**
- Name (As shown on registration certificate): Edward Standal
- Address (As shown on registration certificate): Address 4115 Juneau LN N; City Plymouth; State MN; Zip 55446-2723; Country

**3. For FAA Use Only**

| 4. Type Repair | 4. Type Alteration | 5. Unit Identification: Unit | Make | Model (As described in Item 1 above) | Serial No. |
|---|---|---|---|---|---|
| ☐ | ☑ | AIRFRAME | | | |
| ☐ | ☐ | POWERPLANT | | | |
| ☐ | ☐ | PROPELLER | | | |
| ☐ | ☐ | APPLIANCE | Type / Manufacturer | | |

**6. Conformity Statement**

A. Agency's Name and Address
- Name: Perry Clark
- Address: 340 Garrett Dr
- City: Pine River; State: MN
- Zip: 56474; Country:

B. Kind of Agency
- ☑ U. S. Certificated Mechanic
- ☐ Foreign Certificated Mechanic
- ☐ Certificated Repair Station
- ☐ Certificated Maintenance Organization
- ☐ Manufacturer

C. Certificate No.: 2346866

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual: Perry Clark 02/28/2023 Perry Clark

**7. Approval for Return to Service**

Pursuant to the authority given persons specified below, the unit identified in Item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☑ Approved ☐ Rejected

BY
- ☐ FAA Flt. Standards Inspector
- ☐ FAA Designee
- ☐ Manufacturer
- ☐ Repair Station
- ☐ Maintenance Organization
- ☑ Inspection Authorization
- ☐ Persons Approved by Canadian Department of Transport
- Other (Specify)

Certificate or Designation No.: 2346866

Signature/Date of Authorized Individual: Perry Clark 02/28/2023 Perry Clark

FAA Form 337 (10/08)

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

FACTORY SERVICE NOTES OR

**NOTICE**

*Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.*

8. Description of Work Accomplished
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

| N30553 | 2/28/2023 |
|---|---|
| Nationality and Registration Mark | Date |

Installation of Skybolt Aeromotive engine cowling and firewall fasteners in accordance with STC SA3286SO. Master Drawing List C177, SKMDL177.WQ. No change in weight and balance. Aircraft Return to Service.
END

☐ Additional Sheets Are Attached

FAA Form 337 (10/06)

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

United States of America
Department of Transportation—Federal Aviation Administration

# Supplemental Type Certificate

*Number* SA3286SO

*This certificate, issued to* Skybolt Aeromotive Corporation
9000 Airport Boulevard
Leesburg Municipal Airport
Leesburg, Florida 34788

*certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part* 23 *of the* Federal Aviation *Regulations.*

*Original Product—Type Certificate Number:* A13CE, A20CE
*Make:* Cessna
*Model:* 177 series, 177RG

*Description of Type Design Change:* Installation of engine cowling and firewall fasteners in accordance with Skybolt Aeromotive Corporation Master Drawing List - C177, SKMDL177.WQ9, no revision, dated March 1, 1992, or SKMDL177.XLS, Revision 002, dated April 25, 2001, or later FAA approved revisions.

*Limitations and Conditions:* This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will produce no adverse effect upon the airworthiness of that airplane. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

*This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

*Date of application:* April 23, 1992 *Date received:*
*Date of issuance:* July 15, 1992 *Date amended:* August 29, 2001

*By direction of the Administrator*

Paul C. Sconyers (signature)
Associate Manager, ACE-117A
Atlanta Aircraft Certification Office
(Title)

*Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.*
*This certificate may be transferred in accordance with FAR 21.47.*

FACTORY SERVICE NOTES (SB

SKYBOLT
AEROSPACE FASTENERS

## AUTHORIZATION FOR USE – C177

**Skybolt STC# SA3286SO**

EDWARD STANDAL may hereby use Skybolt STC'd components to modify aircraft:

Model C177 Serial Number 17701322

**Signature:** Ned C. Bowers
Ned C. Bowers
President, Skybolt Aeromotive Corp.

**Date**: February 20, 2022

**Return Policy - Skybolt SK203Conversion Kits**

All SK203 Conversion Kits must obtain a return authorization prior to return to Skybolt. Only unopened, complete kits will be accepted. All returns must be approved within 30 days of initial invoice. All returns will be charged 15% restocking fee.

**Loss of Use, Loss of Market, and Diminution in Value – Skybolt will not be responsible for any liabilities associated with aircraft loss of use, loss of market value, diminution in value, inconveniences, or any costs beyond replacement of materials invoiced to the customer by Skybolt.**

**FAA Form 337**

8. Description of Work Accomplished

S/N: SK2003-42A G3N IV C 17701322

Installed Cowling Conversion Kit#_____under STC# SA3286SO in accordance with Skybolt SK4177-42A.DOC instructions and AC 43.13-1b.

Performed functional operation check satisfactorily.

Continuing Airworthiness in accordance with Cessna Aircraft maintenance procedures.

All work performed in accordance with acceptable standards and procedures contained in AC 43.13-1b.

Aircraft returned to service this date.
2/28/2023

END

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

FACTORY SERVICE NOTES AS

US Department of Transportation Federal Aviation Administration

# MAJOR REPAIR AND ALTERATION
## (Airframe, Powerplant, Propeller, or Appliance)

OMB No: 2120-0020 Exp: 5/31/2018 | Electronic Tracking Number | For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

**1. Aircraft**
- Nationality and Registration Mark: USA N30553
- Make: Cessna
- Serial No.: 17701322
- Model: C177A
- Series:

**2. Owner**
- Name *(As shown on registration certificate)*: Edward D Standal
- Address *(As shown on registration certificate)*: Address 4115 Juneau Ln N; City Plymouth; State MN; Zip 55446-2723; Country United States

**3. For FAA Use Only**

AS PER FAA MEMO Installation Approval for ADS-B OUT Systems DATED: 3/2/2016 Page 3, This form can be submitted directly to the Aircraft Registration Branch without FAA approval/completion of Block 3.

| 4. Type | | 5. Unit Identification | | | |
|---|---|---|---|---|---|
| Repair | Alteration | Unit | Make | Model | Serial No. |
| ☐ | ☒ | AIRFRAME | Cessna | *(As described in Item 1 above)* | 17701322 |
| ☐ | ☐ | POWERPLANT | | | |
| ☐ | ☐ | PROPELLER | | | |
| ☐ | ☐ | APPLIANCE | Type / Manufacturer | | |

**6. Conformity Statement**

A. Agency's Name and Address
- Name: Perry W. Clark
- Address: 340 Garrett
- City: Pine River; State: MN
- Zip: 56474; Country: United States

B. Kind of Agency
- ☒ U.S. Certificated Mechanic
- ☐ Foreign Certificated Mechanic
- ☐ Certificated Repair Station
- ☐ Certificated Maintenance Organization
- ☐ Manufacturer

C. Certificate No.: 2346866

D. I certify that the repair and/or alteration made to the unit(s) identified in Item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual: Perry W Clark 7-10-2020

**7. Approval for Return to Service**

Pursuant to the authority given persons specified below, the unit identified in Item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ Approved ☐ Rejected

BY
- ☐ FAA Flt. Standards Inspector
- ☐ FAA Designee
- ☐ Manufacturer
- ☐ Repair Station
- ☒ Maintenance Organization
- ☐ Inspection Authorization
- ☐ Persons Approved by Canadian Department of Transport
- Other *(Specify)*

Certificate or Designation No.: 2346866

Signature/Date of Authorized Individual: Perry W Clark 7-10-2020

NOTICE

*Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.*

**8. Description of Work Accomplished**
*(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)*

USA N30553 — Nationality and Registration Mark
07/10/2020 — Date

Replaced existing rear white position light with uAvionix tailbeacon assembly, Part # UAV-10021183-001 in accordance with tailbeacon STC Installation Guide, Document # UAV-1002514-001. Used existing position light circuit and confirmed appropriate per AC43.13-1B, Chapter 11, Section 5 & 6.

Existing rear position light wiring was terminated to the tailbeacon position light wires (red to red and black/ground to black) using environmental splice (Part # UAV-1001487-001).

Configuration of the tailbeacon was performed with the following data:
Anonymous Mode: Off
Call Sign: N30553
ICAO Number: A33508
Vso: 48
ADS-B In Capability: 978MHz
Position Light: On
Emitter Type: Light Airplane
Aircraft Length: L ≤ 15
Aircraft Width: W ≤ 23
GPS Antenna Offset (Lateral): 0m
GPS Antenna Offset (Longitudinal): Aft 10m

1. Placard installed next to position light switch.
2. Tailbeacon instructions for Continued Airworthiness uAvionix Document# UAV1002513-001.
3. Tailbeacon Flight Manual Supplement: uAvionix Document # UAV-1002512-001.
4. Airworthiness Limitations: No additional Airworthiness Limitations.
5. Change to Weight and Balance is negligable. Equipment List was revised.
6. Per Cessna Cardinal Service Manual, no ruder balancing required.
7. The above modification was found not to interfere with other installed systems and/or modifications and does not exceed 80% of generator output. No adverse interference to radios and navigation systems RFI was found while operating the tailbeacon during the configuration process.
8. The installed ADS-B OUT system was shown to meet the equipment performance requirements of 14 CFR section 91.277.

END

☐ Additional Sheets Are Attached

FAA Form 337 (10/06) Page 2

US Department of Transportation
Federal Aviation Administration

**MAJOR REPAIR AND ALTERATION**
**(Airframe, Powerplant, Propeller, or Appliance)**

Form Approved
OMB No. 2120-0020
**For FAA Use Only**
Office Identification

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed $1,000 for each such violation (Section 901 Federal Aviation Act of 1958)

| | | |
|---|---|---|
| **1. Aircraft** | Make: CESSNA | Model: C177A |
| | Serial No.: 17701322 | Nationality and Registration Mark: N30553 |
| **2. Owner** | Name (As shown on registration certificate): EDWARD D. STANDAL | Address (As shown on registration certificate): 4115 JUNEAU LN N. PLYMOUTH, MN 55446 |

**3. For FAA Use Only**

**4. Unit Identification**

| Unit | Make | Model | Serial No. | 5. Type: Repair | 5. Type: Alteration |
|---|---|---|---|---|---|
| AIRFRAME | (As described in Item 1 above) | | | | X |
| POWERPLANT | | | | | |
| PROPELLER | | | | | |
| APPLIANCE | Type | | | | |
| | Manufacturer | | | | |

**6. Conformity Statement**

| A. Agency's Name and Address | B. Kind of Agency | C. Certificate No. |
|---|---|---|
| PERRY W. CLARK 41170 W 207 FOX LAKE RD FIFTY LAKES, MN 56448 | X U.S. Certificated Mechanic | 2346866 |
| | Foreign Certificated Mechanic | |
| | Certificated Repair Station | |
| | Manufacturer | |

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Date: FEB 24, 2008 — Signature of Authorized Individual: Perry W Clark

**7. Approval for Return To Service**

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ APPROVED ☐ REJECTED

| BY | | | | | |
|---|---|---|---|---|---|
| | FAA Flt. Standards Inspector | | Manufacturer | X Inspection Authorization | Other (Specify) |
| | FAA Designee | | Repair Station | Person Approved by Transport Canada Airworthiness Group | |

| Date of Approval or Rejection | Certificate or Designation No. | Signature of Authorized Individual |
|---|---|---|
| FEB 24, 2008 | 2346866 | Perry W Clark |

FAA Form 337 (12-88)

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

**NOTICE**

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

**8. Description of Work Accomplished**
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

INSTALLED J.P. INSTRUMENTS temperature MONITORING SYSTEM model 701 SERIES IN ACCORDANCE WITH FAA Approved DRAWING LIST No 100, REV D, dated DECEMBER 19, 1996. STC # SA2586NM AND MASTER ELIGIBILITY LIST dated JUNE 12, 2001 USED. INSTALLATION completed IN ACCORDANCE WITH J.P. INSTRUMENTS INSTALLATION MANUAL, AND AC 43-13

WEIGHT AND BALANCE CHANGES NOTED IN AIRCRAFT RECORDS.

FAA Approved AIRPLANE FLIGHT MANUAL Supplement ADDED to AIRCRAFT MANUAL.

END

☐ Additional Sheets Are Attached

*U.S. GOVERNMENT PRINTING OFFICE: 1992-769-012/60157

FAA Form 337 (10/06) Page 2

United States Of America
Department of Transportation - Federal Aviation Administration

# Supplemental Type Certificate

Number SA2586NM

This Certificate issued to: J. P. INSTRUMENTS
PO Box 7033
Huntington Beach, CA 92646

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified herein meets the airworthiness requirements of Part 3 of the Civil Aviation Regulations, including respective Amendments as specified in the attached Approved Model List.

Original Product Type Certificate Number: • *See attached FAA Approved J.P. Instruments

Make: • Master Eligibility List No. SA2586NM for list

Model: • of approved aircraft models and applicable TCDS

Description of Type Design Change:
Installation of J. P. Instruments temperature monitoring systems in accordance with FAA Approved J. P. Instruments Drawing List Report No. 100, Revision D, dated December 19, 1996, or later FAA approved revisions. FAA Approved Airplane/Rotorcraft Flight Manual Supplement No. 1 for EGT-701 temperature indicator, Revision A, dated December 13, 1996, or later FAA approved revisions.

Limitations and Conditions: The approval of the change in type design applies to the basic airplane of the specific models that are otherwise unmodified. This approval should not be extended to other specific airplanes of these models on which other previously approved modifications are incorporated, unless it is determined that the interrelationship between this installation and any previously approved configuration will not introduce any adverse effect upon the airworthiness of that airplane. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission. (See continuation sheet)

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: December 31, 1984

Date of issuance: August 14, 1985

Date reissued:

Date amended: July 13, 1987, November 13, 1992, December 19, 1996, May 15, 1998, June 17, 1999

By direction of the Administrator

(Signature)
Manager, Propulsion Branch
Los Angeles Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

FAA Form 8110-2(10-88) Page 1 of 3 This certificate may be transferred in accordance with FAR 21.47.

Date of application: December 31, 1984
Date of issuance: August 14, 1985
Date amended: July 13, 1987, November 13, 1992, December 19, 1996, May 15, 1998, June 17, 1999
By direction of the Administrator
Manager, Propulsion Branch
Los Angeles Aircraft Certification Office
(Title)
Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.
Page 1 of 3 This certificate may be transferred in accordance with FAR 21.47.

MAJOR REPAIR & ALTERATION FORMS (FAA FORM 337)

WEIGHT & BALANCE PAPERS

FACTORY SERVICE NOTES OR BULLETINS

FAA APPROVED MASTER ELIGIBILITY LIST J.P. INSTRUMENTS REPORT: SA 2588NM SHEET 8

| MAKE | AIRCRAFT MODEL | Part Number T.C.D.S. (See P. 9 for Series) | 1A2 | (4), (A) |
|---|---|---|---|---|
| 96. Thompson | Navion A, B, C, D, E, F, G, H | A782 | | (6), (_), (B) |
| 97. VARGA | 2150, 2150A, 2160 | 4A19 | | (4), (A) |
| Aerostar, Inc. | | | | |
| 98. WAC | YMF, YWC, YWC-S, YKS-6, 2KS-5 | ATC542 | | (7), (C) |
| | UPF-7, YPF-7 | A-533 | | (7), (C) |
| 99. PITTS (AVIAT) | S-1S, S-1T, S-2, S-2A | A-642 | | (7), (C) |
| White Inter./Ltd. | S-2S, S-2B | A9SO | | (4), (A) |
| 100. Christen (AVIAT) | A-1, A, B | | | (6), (B) |
| White Inter./ Sky Inter. | | A22NM | | (4), (A) |
| 101. Westberry | 620, A, B | A26WE | | (9), (E) |
| 102. Piper | PA-18, PA-18S, PA-18 "105" (Special), PA-18S "105" (Special) PA-18A, PA-18 "125" (Army L-21A) PA-18S "125", PA-18AS "125", PA-18 "135" (Army L-21B), PA-18A "135", PA-18S "135", PA-18AS "135", PA-18 "150", PA-18A "150", PA-18S "150", PA-18AS "150", PA-18A-"150" | A782 | | (6), (_), (B) |
| 103. Piper | PA-18 -"150" (Crosswinds STC'd. STC SA682AL) or (Penn-Yan, STC SA00035NY) | 4A19 | | (4), (A) |
| 104. Piper | PA-20, 20S, 20-"115", 20S-"115" | A1C542 | 1A4 | (4), (A) |
| 105. Piper | PA-20-"135", -20S-"135" | A-533 | | (7), (C) |
| | PA-22, -22-108, -22-135, -22S-135, | A-642 | 1A8 | (4), (A) |
| 106. Piper | PA-22S-150, -22-160, -22S-160 | A9SO | | (4), (A) |
| 107. Piper | PA-23, 23-160 | | 1A10 | (41), (A1) |
| Piper | PA-23-235, PA-250, E23-250, 23-250 | | 1A10 | (6T), (BT) |
| 108. Piper | PA-24 | | 1A15 | (4), (A) |
| Piper | PA -24-250, -24-260 | | 1A15 | (6), (B) |
| Piper | PA-24-400 | | 1A15 | (9), (D) |
| 109. Piper | PA-25 | | 2A8 | (4), (A) |
| Piper | PA-25-235, -260 | | 2A8 | (6), (B) |
| 110. Piper | PA-28-140, -150, -151, -160, -161, PA-28-180, -28S-160 | | 2A13 | (4), (A) |
| Piper | PA-28S-180, -28R-160, -28-181, PA-28R-200, PA-28-236, -28-235 PA-28R-201, -28R-201T, -28-201T, PA-28RT-201, -28RT-201T, -28-201 | | 2A13 | (6*), (B*) |
| 111. Piper | PA-30, PA-39, PA-40 | | A1EA | (41), (A1) |
| 112. Piper | PA-31, -31-300, -31-325, -31-350 | | A26SO | (6T), (BT) |
| 113. Piper | PA-31P, 31P-350 | | A8EA | (6T*), (BT*) |
| 114. Piper | PA-32-260, -32-300, -32S-300 PA-32R-300, -32RT-300, -32RT-300T, PA-32R-301, -32R-301T, PA-32-301, -32-301T | | A3SO | (6*), (B*) |
| 115. Piper | PA-34-200 | | A7SO | (41), (A1) |
| Piper | PA-34-200T, -220T | | A7SO | (6T*), (BT*) |
| 116. Piper | PA-36-112 | | A16SO | (4), (A) |
| 117. Piper | PA-44-180, -44-180T | | A19SO | (4T*), (A1*) |
| 118. Piper | PA-46-310P, -350P | | A2SSO | (6T*), (BT*) |
| 119. Piper | PA-60-600, -60-601, -60-700P, A, CR PA-60-601P, PA-60-602P, PA-60-650 | | A17WE | (6T*), (BT*) |
| 120. Republic | RC-3 | | 769 | (6), (B) |
| 121. Robinson Helicopter | R22, R22 ALPHA, R22 BETA, R22 MARINER | | H10WE | (4), (A) |
| | R44 | | H11NM | (6), (B) |
| 122. Sial-Marchetti | S.205-18/F, -18/R, -20/F, -20/R, -22/R, S.208, S208A | | A9EU | (4), (A) |
| | F.260, F.260B, F.260C, F.260D, , F.260E, , F.260F, | | A10EU | (6*), (B*) |
| 123. S.O.C.A.T.A Aerospatiale | TB9,10, | | A51EU | (4), (A) |
| | TB20, TB21,200 | | A51EU | (6*), (B*) |
| 124. Swift | GC-1A | | 79B | (4), (A) |
| 125. Swift | GC-1B | | 79B | (6), (B) |

FAA approved AFM Supplement is required with the EGT-701. The EGT-701 is applicable to all EGT-1200 series—RPM and MAP applicable to the PIN EGT-701, 4 and 6 cylinder engines only.

FAA approved AFM Supplement is required with the EGT-701. The EGT-701 is applicable to all EGT-1200 series—RPM and MAP applicable to the PIN EGT-701, 4 and 6 cylinder engines only.

U.S. Department of Transportation
Federal Aviation Administration

# MAJOR REPAIR AND ALTERATION
## (Airframe, Powerplant, Propeller, or Appliance)

Form Approved
OMB No. 2120-0020
For FAA Use Only
Office Identification

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed $1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

| | | |
|---|---|---|
| 1. Aircraft | Make: CESSNA | Model: C177A |
| | Serial No.: 17701322 | Nationality and Registration Mark: N30553 |
| 2. Owner | Name (As shown on registration certificate): EDWARD A. STANDAL | Address (As shown on registration certificate): 4115 JUNEAU LN N. PLYMOUTH, MN 55446 |

3. For FAA Use Only

| 4. Unit Identification | | | | 5. Type | |
|---|---|---|---|---|---|
| Unit | Make | Model | Serial No. | Repair | Alteration |
| AIRFRAME | ..... (As described in Item 1 above) ..... | | | | X |
| POWERPLANT | | | | | |
| PROPELLER | | | | | |
| APPLIANCE | Type | | | | |
| | Manufacturer | | | | |

6. Conformity Statement

| A. Agency's Name and Address | B. Kind of Agency | C. Certificate No. |
|---|---|---|
| PERRY W CLARK 41176 WEST FOX LAKE RD. FIFTY LAKES, MN 56448 | X U.S. Certificated Mechanic | 2346866 |
| | Foreign Certificated Mechanic | |
| | Certificated Repair Station | |
| | Manufacturer | |

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

| Date | Signature of Authorized Individual* |
|---|---|
| FEB 26, 2008 | Perry W Clark |

7. Approval for Return To Service

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is X APPROVED ☐ REJECTED

| BY | | | | | | Other (Specify) |
|---|---|---|---|---|---|---|
| | FAA Flt. Standards Inspector | | Manufacturer | X | Inspection Authorization | |
| | FAA Designee | | Repair Station | | Person Approved by Transport Canada Airworthiness Group | |

| Date of Approval or Rejection | Certificate or Designation No. | Signature of Authorized Individual |
|---|---|---|
| FEB 26 2008 | 2346866 | Perry W Clark |

FAA Form 337 (12-88)

MAJOR REPAIR & ALTERATION

WEIGHT & BALANCE PAPERS

FACTORY SERVICE NOTES OR BULLETINS

**NOTICE**

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. Any ... compatible with all previous alterations to assure continued conformity with the applicable airworthiness ...

8. Description of Work Accomplished
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work ...

INSTALLED ZEFTRONIC ALTERNATOR CONTROLLER UNIT #R15V00 IN ACCORDANCE WITH ZEFTRONICS DRAWING Z00IDC, DATED 1/31/91 AND STC 8031SW.
WEIGHT AND BALANCE CHANGES ARE: NONE.
ALL WIRING SECURED AND CLEARANCE ASSURED FROM ALL MOVING PARTS AND CONTROLS.

END

☐ Additional Sheets Are Attached

☆U.S. GOVERNMENT PRINTING OFFICE: 1992-769-012/60157

United States of America
Department of Transportation — Federal Aviation Administration

# Supplemental Type Certificate

Number SA8031SW

This certificate, issued to Tovya Group, Inc. dba Zeftronics
1622 E. Whaley St.
Longview, TX 75601-6830

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part * of the * Regulations.

Original Product — Type Certificate Number: * *See
Make: * attached FAA Approved Model List
Model: * No. SA8031SW for list of approved aircraft and certification data.

Description of Type Design Change:
Installation of Zeftronics Alternator Controller Unit P/N R15100 (Product Configuration File Z0CPCF), or R15V00 (Product Configuration File Z0DPCF), in accordance with Zeftronics Drawing Z00IDC, dated 1/31/91 (R15100), or Z00IDD, dated 1/31/91 (R15V00), or later FAA approved revision.

Limitations and Conditions:
Compatibility of this modification with previously installed equipment must be determined by the installer.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: January 31, 1991
Date of issuance: May 28, 1991
Date reissued:
Date amended: 01/06/92, 11/17/92, 1/6/94
Rev. 3

By direction of the Administrator

Mark R. Schilling
(Signature)
Mark R. Schilling, Manager
Special Certification Office
(Title)

FEDERAL AVIATION ADMINISTRATION

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.
This certificate may be transferred in accordance with FAR 21.47.

FAA Form 8110-2 (10-68)

MAJOR REPAIR & ALTERATION

WEIGHT & BALANCE PAPERS

FACTORY SERVICE NOTES OR BULLETINS

# ZEFTRONICS

*ELECTRICAL CHARGING SYSTEM SOLUTIONS*

## *PRODUCT ELIGIBILITY CATALOG*

1622 E. Whaley St., Longview, TX 75601. USA.
Tech Help: 903-758-6661. Fax: 903-236-9766
Email : cess@zeftronics.com.
Visit: www.zeftronics.com

Dwg No: Z00PEC Rev A1. Date: 01/04. By: FGI

**VOLTAGE REGULATORS, ALTERNATOR CONTROLLERS, AUTO-PARALLEL ALTERNATOR CONTROLLERS, NERATOR CONTROLLERS, STARTER-GENERATOR CONTROLLERS, ALTERNATOR & BUS SYSTEM VOLTAGE MONITORS, PARALLELING RELAYS, OVER CURRENT & OVER VOLTAGE PROTECTION UNITS (RELAYS OR ELECTRONICS), TEMPERATURE CONTROLLERS AND TIMERS.**

| CS ber | System Voltage | *PART NUMBERS REFERENCE Aircraft & Other Manufacturers* | FAA PMA | *AIRCRAFT ELIGIBILITY* |
|---|---|---|---|---|
| ev A | VR: 14V | **Cessna:** C611001-0101, -0102, -0101. **Beech:** 33-380010. Electrodelta: VR600. FORD: D4FF-10316-BA, D4FF-10316-CA | YES | **CESSNA:** 150,A,B,C,D,E,F,G,H,J,K,L,M; A150,K,L,M; F150F,G,H,J; FA150,K,L,M. 172,B,D,E,F,G,H,I,K,L,M,N,P,Q; F172,D,E,F,G,H,J,K,L,M,N; FR172,E; R172E, P172, R172K. 177,A,B,RG,F172RG. 180,F,G,H,J,K. 185,C,D,E; A185E, F. 182,E,G,H,J,K,L, 182M,N,P,Q; F182P,Q; T182. 188,A188,T188. 205A. 206; U206,A,B,C,D,E,F,G; P206,A,B,C,D,E; T206; TP206A,B,C,D,E; TU206,A,B,C,D,E,F,G. 207,A; T207,A. 210,B,C,D,E,F,G,H,J,K,L; 210,F,G,H,J,K. **Gulfstream (Grumman):** AA-5,A,B. **Beech:** 35A33, 35B33, 35C33, E33, E33A, F33, H35, K35, M35, N35, P35. |
| Rev A | VR: 14V OV: 16V | R15V00 = R15100 with OV Protection R15V00 Rev A is self protected R15100 Rev A is self protected | | *APPLICABLE FOR ALLCESSNA AIRCRAFT MODELS LISTED FOR R13100.* |
| | OV: 16V | **Cessna:** C593001-0101. Other No: 0800002. OS60. 0337. EM235 | YES | |
| | VR: 14V | Prestolite: VSF7201,2,3,4, VSF7202S,3A,3S. Electrodelta: VSF7203A TCM: 649684-1 **Piper:** 550-383. R15V0N = R1510N + OV Relay + L/OV Pin | YES | **Citabria:** 7GCAA,7ECA,7GCBC,7KCAB,8GCBC. **Lake:** LA-4,A,P. **Grumman:** AA-1,A. **Commander:** 112,B,TC,TCA. **Varga:** 2150A **Beech:** 19A,B19,M19A,23,23A,A23A,A23-19, A23-24,B23,C23, 24, 24R,B24R,C24R. **Piper:** 23,-160,235,250; PA24-260, PA30,39; **Cessna:** 175,185,188. **Maule:** M-5-180C,235C; M-6-180,235; M-7-235;MX-7-180,235. **Schweizer:** 269C. **Bellanca:** 14-19,-19-2,19-3,19-3A; 17-30,31,31TC; 17-30A,31A,31ATC. |
| 70N | 14V/16V | | | |
| 0A | OV: 16V | **Piper:** 450-397, 484-183, 550-380, 456-393 **Beech:** 138-1. Wico: X-17621. Lamar: B00289-2, B00339-1. Electrodelta: OS75-14. Delco-Remy: 1115831. Prestolite: FOC-4002B. | YES | **Citabria:** 7GCAA,7ECA,7GCBC,7KCAB,8GCBC. **Lake:** LA-4,A,P. **Grumman:** AA-1,A. **Beech:** 19A,B19,M19A,23,23A,A23A,A23-19, A23-24,B23, 23,A24, 24R,B24R,C24R, S35,V35,V35TC. **Lake:** LA-4,A,P. **Grumman:** AA-1,A. **Piper:** 23,-160,235,250; PA24-260, 400; PA30,39. **Cessna:** 175,185,188. **Maule:** M-5-180C,235C; M-6-180,235;M-7-235,MX-7-180, 235. **Varga:** 2150A. **Bellanca:** 14-19,-19-2,19-3,19-3A; 17-30, 31,31TC; 17-30A,31A,31ATC. **Schweizer:** 269C. **Piper:** PA28-140,150,151,160,161,180,235,236,201T. PA28R-180,200,201,201T. PA28S-160,180. PA28RT-201,201T. PA32-260,300. PA32S-300. PA32RT-300,300T. PA32R-301,301T. PA32-301,310T. PA34-200. PA38-112. **Commander:** 112,B,TC,TCA. |
| R1510L | VR: 14V | **Piper:** 450-392, 484-121, 66804-03, 756-055 **Beech:** 169-380063 Other mfr P/N: X16300B, X17990. 9000590. B00267-1,2, B00331-1,2. 1816110. VR200, A. FVR4004,4224; RBM: 87-87102-21 | YES | **Bellanca:** 7GCAA,7ECA,7GCBC,7KCAB,8KCAB. **Commander:** 112,B,TC,TCA. **Beech:** 19, 19A,B19,M19A,23,23A,A23A,A23-19, A23-24,B23,C23,A24,A24R, B24R, C24R, S35,V35,V35TC. **Piper:** PA24-260,400. PA28-140,150,151,160,161,180,235,236,201T. PA28R-180,200,201,201T. PA28S-160,180. PA28RT-201,201T. PA32-260,300. PA32S-300. PA32R-300,300T. PA32R-301,301T. PA32-301,310T. PA38-112. **Grumman:** AA-1B, AA-1C |
| R15V0L | VR: 14V OV: 16V | **Piper:** 557-337. Lamar: B00371-1,-8,-14 Electrodelta: VR371 | YES | **Bellanca:** 8GCB,8KCAB. **Maule:** M-5-180C,235C; M-6-180,235; M-7-235; MT-7-235; MX-7-160, 180,235; MXT-7-160,180. **Piper:** PA24-260,400; PA28-140,150,151,160,161, 180,235, 236, 201T. PA28R-180,200,201,201T; PA28S-160,180. PA28RT-201,201T. PA32-260,300. PA32S-300. PA32R-300,300T. PA32R-301,301T. PA32-301,310T. PA38-112. |
| R25101 R25101 Rev A | VR: 27.7 VR: 27.7 | **Cessna:** C611004-0101,C611002-0102,-0105 Ford: C8FF/C6FF-10316-A, TCM: 636147 Electrodelta: VR500-0101. | YES | **Cessna:** 152,A152,F152,FA152. 172,H,N; P172; FR172K; R172,K; 177,A,B,RG; 180,K; 182,P,Q, F182,P,Q; R182, FR182; T182,TR182. 185,A185F. 188, A188,A,B; T188,C; 206, P206,TU206A, U206,G; 207,A; T207,A; 210,K,L,M,N; P210N, P210R; T210,K,L,M,N; 337,A,B,C,D,E,F,G,H; P337,B,C,D,E,F,G,H; P337H; T337B,C,D,E,F,G,H,H-SP; FT337E,F,GP,HP M337B. |
| R25102 Rev A R25102 | VR: 28.8 VR: 28.8 | **Cessna:** C611004-0102 Electrodelta: VR500-0102 | | *Applicable for all CESSNA models listed for R25101 except 337A (USAF 02B); M337B (USAF 02A).* |
| R25S01 R25S02 | VR: 27.7 OV: 32V | C611004-0101 & OV Sensor C611004-0102 & OV Sensor | YES YES | **Cessna:** 210 **Cessna:** 210 |
| R15200 R25200 | 14V/16V 28V/32V | **Aerrufab:** 2-7750-49, VR417-2 **Aerrufab:** 3-7780-51 | YES YES | **Lake:** LA-4, LA-4-200; Model 250 S/N: 1-35 **Lake:** Model 250 S/N: 36 & UP |
| EQ1500 | EQ: 12V | Delco-Remy 1116887; PAC: 450-386 | YES | **Piper:** PA23-150,-160,-238,250; PA30; PA39 |
| EQ2500 | EQ: 24V | DELCO-REMY 1116902 | YES | **Cessna:** 310,A,B,C,D,E,F,G,H,I,J,J-1,K; E310H,I,J. 320,A,B,C,D,E,320-1. **Beech:** 95,B95,B95A,D95A,E95;95-55,-A55,-B55,-B55A;58,A. **Twin Commander:** 500,-A,B. |
| R15400 | VR: 28V OV: 32V | **Cessna:** C611005-0103, -0101, -0102 Electrodelta: VR515P,G Prt: DGRJ | YES | **Cessna:** 152,A152,F152,FA152; 172,N,P,RG; FR172,K; R172,K; F172N,P; 180,K; 182,Q,R; R182, FR182,TR182. F182R,T182R; 185,A185F; 206,U206; 207,T207; 210,N,R; P210N,R; T210N,R |
| V25101 | OV: 32V | **Cessna:** C593003-0101, -0102 Other P/N: OS100-0101. EM233 | YES | **Cessna:** 152,A152,F152,FA152; 172,N; F172; R172K; 177,A,B,RG; 180,K; 182,Q; F182Q; R182; FR182; 185,A185F; 188,A188B,T188C; 206,U206; 207,T207; 210,K,L,M,N; P210,N; T210,K,L,M,N. |
| R2510N R25V0N V2510A | VR: 28V 28V/32V 32V | Prestolite: VSF7403A,4,3S. PAC: 550-381 R2510N with OV Protection & LV/OV warning PAC: 484182. Others: F0C4003A. OS75-28 | YES | **Piper:** PA31,31-300,-31-310,-31-325,-31-350. PA36-285,-300,-375. PA-600,601,601P,602P,700P **Cessna:** 310,310P,3100, 320. 401A,4016,402A,4020,414,421,421A,421B. **Schweitzer:** 269C. **Twin Commander:** 500S. **Beech:** B55, 58, F33A, F33C, A36, A36TC |
| R251DR | 27.7V | Delco-Remy, **Beech, Piper:** 9000591 | YES | **Cessna:** 310N, 310L, 320D, 320E; **Beech:** B95A, D95A,95-B55,-C55; **Piper:** PA-31,-300,-310,-325 |
| R15300 | VR: 14V OV: 16V | **Mooney:** 800270-505, 880016-503 Electrodelta: **VR415F.** Prt: DGR1-1 | YES | **Mooney:** M20C, M20D, M20E, M20F, M20G, M20J, M20K |
| R1530B | VR: 14V OV: 16V | **Mooney:** 880016-501 Other P/N: **20082. VR414** **Beech:** 35-380093-1,2,3. Other P/N: 20053, 20065, 20137, 20437 B00403-1. EM2073-1,2. | YES | **Mooney:** M20C:M20D,M20E,M20F **Beech:** H35, J35, K35, M35, N35, P35, S35, V35. V35TC,V35A,V35A-TC,V35B, 36, A36 **Beech:** 33, A33, B33, C33, E33, C33A, E33A, E33C, F33A, F33C. |

**Visit: www.zeftronics.com for trouble-shooting notes, product information and charging system training**



Dear Mr. Ibberson:

We have received your letter transmitting the product data for the R15V00 Rev. A, dated 4/2/97, and the R15100 Rev. A, dated 4/2/97. Both units are self protected and will be added to the ZEFTRONICS product line.

This letter constitutes FAA approval for the above data as referenced in the ZEFTRONICS Type Design Change paragraph.

Please call if you have any questions concerning this matter.

Sincerely,

Richard Ritz
Aerospace Engineer
Special Certification Office

FAA Approved: Manager, Chicago Aircraft Certification Office

ISSUE DATE: 5-20-91

FOR INSTALLATION OF R15100 or R15V00 ACU/VR

ZEFTRONICS

ZEFTRONICS MODEL LIST (ALL) NO. SA003ISW. Rev. -L-

AIRCRAFT MODEL

| | AIRCRAFT MAKE | AIRCRAFT MODEL | ORIGINAL TYPE CERTIFICATE NUMBER | INSTALLATION DRAWING BASIS FOR ALTERATION | INSTALLATION DRAWING Number | INSTALLATION Revision /Date | APP. AMENDMENT DATE |
|---|---|---|---|---|---|---|---|
| 1 | CESSNA | 150,A150,K,L,M,P25 | A16CE | CAR 3 | 20012C.20012D | 1-31-91 | 11-17-92 |
| 2 | CESSNA | 150,A150,150C,150D,150E,150F,150G,150H,150J,150K,150L,150M,150P,150R,150S,A150M,A150L,A150K,A150M,150P,A150M,150R,A150M,150S,A150M,150T,A150M,150U,A150M,150V,A150M,150W,A150M,150X,A150M,150Y,A150M,150Z,A150M,A150N,A150P,A150Q,A150R,A150S,A150T,A150U,A150V,A150W,A150X,A150Y,A150Z

**Do not install this unit unless you agree to the terms and conditions of this warranty policy.** By installing this unit, the buyer / installer (or his/her assignee) indicates his/her acceptance of the terms and conditions of this warranty policy. This policy contains the entire warranty terms and conditions for this product, there are no other promises or conditions in any other agreement whether written or oral concerning the subject of this policy. **2. ZEFTRONICS, herein called seller**, warrants that each unit delivered shall at the time of delivery thereof to buyer or buyer's customers, be free from defects in workmanship and materials when used in a manner that is generally recognized by the industry as good aviation practice. **3. Limitation of Warranty.** The warranty, obligations, and liabilities of the seller hereunder are exclusive and in substitution for and buyer hereby waives all other warranties, whether expressed or implied, arising by law or otherwise (including, without limitation, the implied warranty or merchantability, and implied warranty arising from course of performance, course of dealing or usage of trade, any implied warranty of fitness, and any obligation of seller with respect to incidental or consequential damages), and shall not be extended, altered or varied except by a written instrument signed by seller and buyer.

**Extent.** ZEFTRONICS' sole liability under this limited warranty shall be at ZEFTRONICS' option, to overhaul or replace any defective unit. This limited warranty excludes all other remedies against ZEFTRONICS for consequential or other damages arising out of sale, use, or operation of the unit. Any replacement unit provided pursuant to this warranty policy will only have warranty for the remainder of the warranty period applicable to the replaced unit. **4. Limitations.** ZEFTRONICS will deny warranty for units only functionally tested or tested for time re-certification; units that are found to be fully functional at the receiving inspection tests; units opened by the customer; units damaged by improper storage, handling, packaging, installation, operation, alteration, repair, misuse, or abuse. Abuse can include, but may not be limited to: Damage due to faulty alternator / generator field or wiring, corrosion, deformity of unit's case, base, cover, or connector. **5. Duration of warranty:** 12 months or 600 hours from installation date as verified by the completed required returned warranty registration card. Warranty is void if warranty card is incomplete or not returned. **6. Shelf life of unit:** Return units that are on the shelf for more than 36 months for testing and rectification. Test charge applies. **7. Warranty Claim:** To return a thoroughly completed warranty registration card within 10 days of installing this product. Properly filling the warranty card helps the installer to trouble-shoot the aircraft system. Warranty is void if completed warranty card is not returned. To claim warranty, send unit (FREIGHT PREPAID) with a written description of the problems that the system is experiencing. Telephone, fax, or email us to let us know it is being returned for warranty claim. See return policy for return instructions. **8. Return policy:** With our prior approval (indicated by our RMA#), you may return a unit (unused & not mounted) that you have determined you do not need. Send the unit freight prepaid with all its tags and papers, and a completed warranty registration, within 5 days of receipt. Restocking fees (RSF) charged on returned units: 25% on unopened & unused units; 45% installed & used but undamaged units; 60% on damaged units; 65% on special application or custom designs; 50-98% on units that are more than 36 months old. Shipping charges are not refundable. The refund granted on a returned unit will not exceed the amount ZEFTRONICS sold unit to the first (original) purchaser be it an FBO, a dealer, a distributor, or an OEM. All returns must go through the vendor from whom the product was acquired. We provide refunds through credit cards, refund check, or account credit. Allow 2 to 3 weeks for refund processing. This return policy also applies to warranty claims and replacement units. **9. Shipping:** All shipping charges, custom tariffs, taxes, or other related charges are the sole responsibility of the customer. To avoid damage to unit, and a denial of warranty claim, package the unit properly. **10. Extra charges:** We will charge extra for replacing of damaged connectors /base/ case/ cover, overhauling units, testing units, performing on aircraft work, researching peculiar problems, and other non-standard requirements by the customer. **11. Replacement unit:** If you want a replacement unit before sending yours in for warranty evaluation, you can purchase a new or overhauled replacement unit using your Master Card, Visa card, Discover card, UPS COD, or FEDEX COD. You pay the shipping charges. After receiving the replacement unit you have 5 days to return the warranty claim. Upon receipt and evaluation of the warranty claim, we will inform you of our findings and recommendations. See return policy for return instructions. There is a 60% RSF on damaged replacement units.

ZEFTRONICS Warranty Policy, ZWCOA1 U1 page 1


**Before installing this unit, read warranty policy, take and record the required measurements.**

PN: R15V00 REV A
SN: V14281

ZEFTRONICS

| | | | | | |
|---|---|---|---|---|---|
| Tech Ph: 903-758-6661 or visit www.zeftronics.com | | | | | |
| Field Ω at ALT | 6 Ω | Field Ω at ACU/VR | 6 Ω | Field Breaker | Ω |
| Bus Voltage, Master Switch on: engine | 13.9 V | | | engine at 1800 RPM | 13.9 V |
| Other: | | | | | |

***About the aircraft & the installer***

| | | | |
|---|---|---|---|
| Make / Model | | | N |
| Installer, Name | | A&P# | |
| Tach Time On | Date | Tach Time Off | Date |

***About the company***

| | | | |
|---|---|---|---|
| Company | | D.O.M | |
| Address | | Buyer | |
| | | Phone | |
| | | Email | |

***Please circle the number that shows your experience with us. Circle 1=Poor, 4=Met expectation***

| | | | | | | |
|---|---|---|---|---|---|---|
| Tech Help | 1 | 2 | 3 | 4 | 5 | How do you rate our tech help? Do we meet your need? |
| Sales Help | 1 | 2 | 3 | 4 | 5 | How do you rate our sales help? Are you pleased? |
| Product | 1 | 2 | 3 | 4 | 5 | Did the product serve your reason for buying it? |
| Website | 1 | 2 | 3 | 4 | 5 | Did you find help & information at www.zeftronics.com? |

Why did you buy the Unit? ☐Previous one ☐Friend ☐Product Reputation ☐Price ☐Tech Help

FOR YOUR RECORDS.
TAKE & RECORD THE REQUIRED MEASUREMENTS BEFORE INSTALLING THIS UNIT.

PN: R15V00 REV A
SN: V14281
ZEFTRONICS

| | | | | | |
|---|---|---|---|---|---|
| Tech Ph: 903-758-6661 or visit www.zeftronics.com | | | | | |
| Field Ω at ALT | Ω | Field Ω at ACU/VR | V | Field Breaker | |
| Bus Voltage, Master Switch on: engine off | | | | engine at 1800 RPM | |
| Other: | | | | | |

***About the aircraft & the installer***

| | | | |
|---|---|---|---|
| Make / Model | 172 SKN | | N 30553 |
| Installer, Name | ZEFTRA | A&P# | |
| Tach Time On | Date | Tach Time Off | Date |


MAJOR REPAIR & ALTERATION
WEIGHT & BALANCE PAPERS
FACTORY SERVICE NOTES OR BULLETINS


FAA APPROVED MASTER ELIGIBILITY LIST JP INSTRUMENTS REPORT: SA 2555NM SHEET 1

| MAKE | AIRCRAFT MODEL | T.C.D.S. (See P. 5 for Series) | Part Number (See P. 5 for Series) |
|---|---|---|---|
| 73. Piper | PA-18, PA-18S, PA-18A (Special) PA-18AS "125" PA-18S "125" PA-18 "135" (Military) PA-18A "135" PA-18AS "135" PA-18A "150" | A7SO | (5, L) (B) |
| | | 4A19 | (4), (A) |
| 74. Piper | PA-18A-"135" PA-18 -"150" (Crosswind) SA0003 | A7SO42 | (5), (C) |
| | | A-533 | (5), (C) |
| | | A-542 | (5), (C) |
| | | A850 | (4), (A) |
| 75. Piper | PA-20, PA-20S | A20NM | (5), (B) |
| 76. Piper | PA-20 | A20NM | (4), (A) |
| 77. Piper | PA-22 | A20NM | (5), (E) |
| | PA-22 | | |
| | Piper | | |
| 78. Piper | Piper | | |
| | Piper | | |
| 79. Piper | Piper | | |
| | Piper | | |
| 80. Piper | Piper | | |
| | Piper | | |
| 81. Piper | Piper | | |
| 82. Piper | Piper | | |
| 83. Piper | Piper | | |
| 84. Piper | Piper | | |
| 85. Piper | Piper | | |
| | Piper | | |
| 86. Piper | Piper | | |
| 87. Piper | Piper | | |
| 88. Piper | Piper | | |
| 89. Piper | Piper | | |
| 90. Piper | Piper | | |
| 91. Piper | Piper | | |
| 92. Piper | Piper | | |

MAJOR REPAIR & ALTERATION

1. Do not install this unit unless you agree to the terms and conditions of this warranty policy. By installing this unit, the buyer / installer (or his/her assignee) indicates his/her acceptance of the terms and conditions of this warranty policy. This policy contains the entire warranty terms and conditions for this product, there are no other promises or conditions in any other agreement whether written or oral concerning the subject of this policy. 2. ZEFTRONICS, herein called seller, warrants that each unit delivered shall at the time of delivery thereof to buyer or buyer's customers, be free from defects in workmanship and materials when used in a manner that is generally recognized by the industry as good aviation practice. The warranty, obligations, and liabilities of the seller hereunder are exclusive and in substitution for and buyer hereby waives all other warranties, expressed or implied, arising by law or otherwise (including, without limitation, the implied warranty or merchantability, and implied warranty arising from course of performance, course of dealing or usage of trade, any implied warranty of fitness, and any obligation of seller with respect to incidental or consequential damages), and shall not be extended, altered or varied except by a written instrument signed by seller and buyer. 3. Extent. ZEFTRONICS' sole liability under this limited warranty shall be at ZEFTRONICS' option, to overhaul or replace any defective unit. This limited warranty excludes all other remedies against ZEFTRONICS for consequential or other damages arising out of sale, use, or operation of the unit. Any replacement unit provided pursuant to this warranty policy will only have warranty for the remainder of the warranty period applicable to the replaced unit. 4. Limitations. ZEFTRONICS will deny warranty for units only functionally tested or tested for time re-certification; units that are found to be fully functional at the receiving inspection tests; units opened by the customer; units damaged by improper storage, handling, packaging, installation, operation, alteration, repair, misuse, or abuse. Abuse can include, but may not be limited to: Damage due to faulty alternator / generator field or wiring, corrosion, deformity of unit's case, base, cover, or connector. 5. Duration of warranty: 12 months or 600 hours from installation date as verified by the completed required returned warranty registration card. Warranty is void if warranty card is incomplete or not returned. 6. Shelf life of unit: Return units that are on the shelf for more than 36 months for testing and rectification. Test charge applies. 7. Warranty Claim: Return a thoroughly completed warranty registration card within 10 days of installing this product. Properly filing the warranty card helps the installer to trouble-shoot the aircraft system. Warranty is void if completed warranty card is not returned. To claim warranty, send unit (FREIGHT PREPAID) with a written description of the problems that the system is experiencing. Telephone, fax, or email us to let us know it is being returned for warranty claim. See return policy for return instructions. 8. Return policy: With our prior approval (indicated by our RMA#), you may return a unit (unused & not mounted) that you have determined you do not need. Send the unit freight prepaid with all its tags and papers, and a completed warranty registration, within 5 days of receipt. Restocking fees (RSF) charged on returned units: 25% on unopened & unused units; 45% installed & used but undamaged units; 60% on damaged units; 65% on special application or custom designs; 50-98% on units that are more than 36 months old. Shipping charges are not refundable. The refund granted on a returned unit will not exceed the amount ZEFTRONICS sold unit to the first (original) purchaser be it an FBO, a dealer, a distributor, or an OEM. All returns must go through the vendor from whom the product was acquired. We provide refunds through credit cards, refund check, or account credit. Allow 2 to 3 weeks for refund processing. This return policy also applies to warranty claims and replacement units. 9. Shipping: All shipping charges, custom tariffs, taxes, or other related charges are the sole responsibility of the customer. To avoid damage to unit, and a denial of warranty claim, package the unit properly. 10. Extra charges: We will charge extra for replacing of damaged connectors /base/ case/ cover, overhauling units, testing units, performing on aircraft work, researching peculiar problems, and other non-standard requirements by the customer. 11. Replacement unit: If you want a replacement unit before sending yours in for warranty evaluation, you can purchase a new or overhauled replacement unit using your Master Card, Visa card, Discover card, UPS COD, or FEDEX COD. You pay the shipping charges. After receiving the replacement unit you have 5 days to return the warranty claim. Upon receipt and evaluation of the warranty claim, we will inform you of our findings and recommendations. See return policy for return instructions. There is a 60% RSF on damaged replacement units.

ZEFTRONICS Warranty Policy, ZWCQA1 01 page 1

**Before installing this unit, read warranty policy, take and record the required measurements.**

PN: R15V00 REV A
SN: V14281

ZEFTRONICS

Tech Ph: 903-758-6661 or visit www.zeftronics.com

| | | | | | |
|---|---|---|---|---|---|
| Field Ω at ALT | 6 Ω | Field Ω at ACU/VR | 6 Ω | Field Breaker | Ø Ω |
| Bus Voltage, Master Switch on: engine | 13.9 V | engine at 1800 RPM | | | 13.9 V |
| Other: | | | | | |

***About the aircraft & the installer***

| | | | | | |
|---|---|---|---|---|---|
| Make / Model | | | | N | |
| Installer, Name | | | A&P# | | |
| Tach Time On | | Date | Tach Time Off | | Date |

***About the company***

| | | | |
|---|---|---|---|
| Company | | D.O.M | |
| Address | | Buyer | |
| | | Phone | |
| | | Email | |

***Please circle the number that shows your experience with us. Circle 1=Poor, 4=Met expectation***

| | | | | | | |
|---|---|---|---|---|---|---|
| Tech Help | 1 | 2 | 3 | 4 | 5 | How do you rate our tech help? Do we meet your need? |
| Sales Help | 1 | 2 | 3 | 4 | 5 | How do you rate our sales help? Are you pleased? |
| Product | 1 | 2 | 3 | 4 | 5 | Did the product serve your reason for buying it? |
| Website | 1 | 2 | 3 | 4 | 5 | Did you find help & information at www.zeftronics.com? |

Why did you buy the Unit? ☐ Previous one ☐ Friend ☐ Product Reputation ☐ Price ☐ Tech Help

WEIGHT & BALANCE PAPERS

FACTORY SERVICE NOTES OR BULLETINS

Cessna
A Textron Company

## Service Bulletin

NOT APPLICABLE BY DATE OF MANUFACTURE.

SEB05-3

July 18, 2005

7/31/2005

**TITLE**

ENGINE CRANKSHAFT REPLACEMENT

**EFFECTIVITY**

The following airplanes equipped with a Lycoming O-360, IO-360, or O-540 engine and/or engine crankshaft listed in Lycoming Mandatory Service Bulletin No. 566 (or latest revision):

| Model | Year | Serial Numbers |
|---|---|---|
| 172RG | 1980 | 172RG0001 thru 172RG0570 |
| 172RG | 1981 | 172RG0571 thru 172RG0890 |
| 172RG | | 691 |
| 172RG | 1982 | 172RG0891 thru 172RG1099 |
| 172RG | 1983 | 172RG1100 thru 172RG1144 |
| 172RG | 1984 | 172RG1145 thru 172RG1177 |
| 172RG | 1985 | 172RG1178 thru 172RG1191 |
| 177 | | 661 |
| 177A | 1969 | 17701165 thru 17701370 #1322 |
| 177B | 1970 | 17701371 thru 17701471 |
| 177B | 1970 | 17701473 thru 17701530 |
| 177B | 1971 | 17701531 thru 17701633 |
| 177B | | 17700002 |
| 177B | 1972 | 17701634 thru 17701773 |
| 177B | 1973 | 17701774 thru 17701973 |
| 177B | 1974 | 17701974 thru 17702123 |
| 177B | 1975 | 17702124 thru 17702313 |
| 177B | | 17701472 |
| 177B | 1976 | 17702314 thru 17702522 |
| 177B | 1977 | 17702523 thru 17702672 |
| 177B | 1978 | 17702673 thru 17702752 |
| 177RG | 1971 | 177RG0001 thru 177RG0212 |
| 177RG | 1972 | 177RG0213 thru 177RG0282 |



To obtain satisfactory results, procedures specified in this publication must be accomplished in accordance with accepted methods and prevailing government regulations. Cessna Aircraft Company cannot be responsible for the quality of work performed in accomplishing the requirements of this publication.

**Cessna Aircraft Company**, Product Support, P.O. Box 7706, Wichita, Kansas 67277, U.S.A. (316) 517-5800, Facsimile (316) 942-9006

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FACTORY SERVICE NOTES OR BULLETINS
WEIGHT & BALANCE PAPERS
MAJOR REPAIR & ALTERATION
AD's REQUIRING ADDITIONAL COMPLIANCE

| | | |
|---|---|---|
| 177RG | 1973 | 177RG0283 thru 177RG0418 |
| 177RG | 1973 | 177RG0420 thru 177RG0432 |
| 177RG | 1974 | 177RG0433 thru 177RG0592 |
| 177RG | 1975 | 177RG0593 thru 177RG0787 |
| 177RG | 1976 | 177RG0788 thru 177RG1051 |
| 177RG | 1977 | 177RG1052 thru 177RG1266 |
| 177RG | 1978 | 177RG1267 thru 177RG1366 |
| T182 | 1981 | 177RG0419 |
| T182 | | 18267716 thru 18268055 |
| T182 | 1982 | 18267302 |
| T182 | 1983 | 18268056 thru 18268293 |
| T182 | 1984 | 18268294 thru 18268368 |
| T182 | 1985 | 18268369 thru 18268434 |
| R182 | | 18268435 thru 18268541 |
| R182 | 1978 | 683 |
| R182/TR182 | 1979 | R18200002 thru R18200583 |
| R182/TR182 | | R18200584 thru R18201313 |
| R182/TR182 | 1980 | R18200001 |
| R182/TR182 | 1980 | R18201314 |
| R182/TR182 | 1981 | R18201316 thru R18201628 |
| R182/TR182 | 1982 | R18201629 thru R18201798 |
| R182/TR182 | 1983 | R18201799 thru R18201928 |
| R182/TR182 | 1984 | R18201929 thru R18201973 |
| R182/TR182 | 1985 | R18201974 thru R18201999 |
| R182/TR182 | | R18202000 thru R18202031 |
| R182/TR182 | 1986 | R18201315 |
| F177RG | 1972 | R18202032 thru R18202039 |
| F177RG | 1973 | F177RG0043 thru F177RG0062 |
| F177RG | 1974 | F177RG0063 thru F177RG0092 |
| F177RG | 1975 | F177RG0093 thru F177RG0122 |
| F177RG | 1976 | F177RG0123 thru F177RG0138 |
| F177RG | 1977 | F177RG0139 thru F177RG0160 |
| FR182 | 1978 | F177RG0161 thru F177RG0177 |
| FR182 | 1979 | FR18200001 thru FR18200020 |
| FR182 | 1980 | FR18200021 thru FR18200045 |
| | | FR18200046 thru FR18200070 |

Also affected are any new, rebuilt or overhauled Lycoming O-360, IO-360, or O-540 engine and/or engine crankshaft listed in Lycoming Mandatory Service Bulletin No. 566 (or latest revision) that are in Service Station stock.



**PURPOSE**

To transmit Lycoming Mandatory Service Bulletin No. 566: Crankshaft Replacement in Lycoming Engines.

According to Lycoming, "Lycoming has continued to analyze crankshafts in service. This analysis indicates that replacement of certain crankshafts is warranted. Therefore, Lycoming is recalling certain crankshafts in the specified four and six cylinder engines." Non-compliance with Service Bulletin SEB05-3/Lycoming Mandatory Service Bulletin No. 566 could result in crankshaft failure and complete loss of engine power.

**COMPLIANCE**

Mandatory; shall be accomplished within the next 50 hours of operation or 6 months, whichever occurs first as stated in Lycoming Mandatory Service Bulletin No. 566 (or latest revision).

**APPROVAL**

Refer to the attached Lycoming Mandatory Service Bulletin No. 566 (or latest revision).

For DGAC Airplanes: DGAC approval has not been obtained on technical data in this publication. The affected "F" model and serial number airplanes are included for informational purposes. Cessna considers compliance mandatory on "F" model airplanes regardless.

**MAN-HOURS**

Refer to the attached Lycoming Mandatory Service Bulletin No. 566 (or latest revision).

Refer to the attached Lycoming Customer Letter dated July 11, 2005.

**MATERIAL**

No applicable

**ACCOMPLISHMENT INSTRUCTIONS**

1. Review and accomplish the attached Lycoming Mandatory Service Bulletin No. 566 (or latest revision).

   **NOTE:** If the engine is to be returned to Lycoming, refer to the attached Lycoming instructions to determine which items are to be returned with the engine, and which are not.

2. Make appropriate entries in the airplane and engine logbooks stating compliance with this Service Bulletin/Lycoming Mandatory Service Bulletin No. 566 (or latest revision).

**NOTE:** This information shall be considered an amendment to the Cessna Manufacturer's Service/Maintenance Manual or Instructions for continued airworthiness and must be accomplished for ongoing airworthiness compliance as required per 14 CFR Part 43.13.

**CREDIT**

Refer to Lycoming Mandatory Service Bulletin No. 566 (or latest revision).

**OWNER NOTIFICATION**

On July 18, 2005 a copy of this Service Bulletin will be sent to applicable owners of record.

It is recommended that owners contact a Cessna Single Engine Service Station for detailed information and if applicable, arrange to have Cessna Service Bulletin SEB05-3/Lycoming Mandatory Service Bulletin No. 566 (or latest revision) accomplished on your airplane.



LYCOMING
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www.lycoming.textron.com

MANDATORY
# SERVICE BULLETIN

Service Bulletin No. 566

DATE: July 11, 2005

SUBJECT: Crankshaft Replacement in Lycoming Engines.

MODELS AFFECTED: Any Lycoming engine model specified below manufactured, rebuilt, overhauled or repaired after March 1, 1999:

Lycoming O-540, IO-540, AEIO-540 and TIO-540 engines rated at 290 horsepower or lower as described in Section 1 and listed in Table 1.

Lycoming IO-540-P, -S, -AA engines rated at 250-290 horsepower by Lycoming as described in Section 2 and listed in Table 2.

Lycoming IO-540 and AEIO-540 engines rated at 300 horsepower as described in Section 2 and listed in Table 2.

Lycoming counterweighted (L)O-360, (L)IO-360 and AEIO-360 engines rated at any horsepower as described in Section 3 and listed Table 3.

Lycoming crankshafts with a crankshaft serial number listed in Table 4 shipped as a spare after March 1, 1999. These crankshafts may be installed in any of the engine models listed above.

NOTE

Engines that have complied with Service Bulletin No. 552 or Service Bulletin No. 553 are not affected by this Service Bulletin.

TIME OF COMPLIANCE: Within next 50 hours of operation or 6 months from the date of this Service Bulletin, whichever occurs first.

Lycoming has continued to analyze crankshafts in service. This analysis indicates that replacement of certain crankshafts is warranted. Therefore, Lycoming is recalling certain crankshafts in the specified four and six cylinder engines.

All affected Lycoming crankshafts have a serial number format of "V5379" followed by a 3 to 5 digit number and are listed in Table 4. Please note that not all "V5379" crankshafts are affected. The crankshaft serial number is marked on the O.D. of the propeller mounting flange.

NOTE

1. The engine model, engine serial number, date of engine manufacture, and horsepower rating can be found in the engine logbook or on the engine data plate. This information will be required to determine if your engine is affected.



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FACTORY SERVICE NOTES OR BULLETINS
WEIGHT & BALANCE PAPERS
MAJOR REPAIR & ALTERATION
ADs REQUIRING ADDITIONAL

NOTES (CONT.)

2. Some field repair stations mark their own identification (numbers and/or letters) on the propeller flange O.D. These numbers are not related to any Lycoming information.
3. For reference purposes, other Lycoming crankshaft serial number formats include the following:

   a. An "I" followed by 5 digits.
   b. A "V" followed by a 3 to 5 digit number.
   c. A number from 3 to 6 digits.

Crankshafts with these serial numbers are not affected by this Service Bulletin.

**MODEL DESCRIPTIONS:**

**SECTION 1**

Any Lycoming engine model specified below manufactured, rebuilt, overhauled or repaired after March 1, 1999:

Lycoming O-540, IO-540, AEIO-540 and TIO-540 engines rated at 290 horsepower or lower with serial numbers as listed in Table 1.

Any overhauled or repaired Lycoming O-540, IO-540, AEIO-540 or TIO-540 engine rated at 290 horsepower or lower that has had a crankshaft replaced after March 1, 1999 with a crankshaft serial number listed in Table 4.

**SECTION 2**

Any Lycoming engine model specified below manufactured, rebuilt, overhauled or repaired after March 1, 1999:

Lycoming IO-540-P, -S, -AA engines rated at 250-290 horsepower by Lycoming with serial numbers as listed in Table 2.

Lycoming IO-540 and AEIO-540 engines rated at 300 horsepower with serial numbers as listed in Table 2.

Any overhauled or repaired Lycoming IO-540-P, -S, -AA rated at 250-290 horsepower by Lycoming or Lycoming IO-540 or AEIO-540 engine rated at 300 horsepower that has had a crankshaft replaced after March 1, 1999 with a crankshaft serial number listed in Table 4.

**SECTION 3**

Any Lycoming engine model specified below manufactured, rebuilt, overhauled or repaired after March 1, 1999:

Lycoming counterweighted (L)O-360, (L)IO-360 and AEIO-360 engines rated at any horsepower with serial numbers as listed in Table 3.

Any overhauled or repaired Lycoming counterweighted (L)O-360, (L)IO-360 or AEIO-360 engine that has had a crankshaft replaced after March 1, 1999 with a crankshaft serial number listed in Table 4.

NOTE

The counterweighted 360 engines can be identified by the #6 as the 4th suffix character in the engine model (Example: IO-360-A1B**6**).





**INSTRUCTIONS FOR COMPLIANCE:**

1. If your Lycoming engine serial number is listed in the Table for your engine model (Table 1, 2 or 3), before 50 hours or 6 months, whichever occurs first, contact Lycoming by phone at 570-323-6181 or by fax at 570-327-7160 to schedule return of the engine for crankshaft replacement.
2. If your engine model was overhauled, repaired, or had the crankshaft replaced after March 1, 1999, verify the crankshaft serial number through pertinent aircraft/engine documentation or overhaul/maintenance facility records. The engine logbook may contain crankshaft replacement and serial number information. If your crankshaft serial number is listed in appropriate Table 4, contact Lycoming by phone at 570-323-6181 or by fax at 570-327-7160 to schedule return of the engine for crankshaft replacement. If your crankshaft serial number cannot be verified through engine records, contact Lycoming.
3. Crankshafts listed in Table 4 must **not** be reused to assemble any engine. Check any uninstalled crankshaft against Table 4. If a subject crankshaft is found, contact Lycoming.
4. After you determine that your engine and crankshaft are not affected by this Service Bulletin, make appropriate logbook entries.
5. Factory replacement of the crankshafts listed in Table 4 will be accomplished at no cost to the owner. Labor for engine removal and reinstallation, when authorized by Lycoming, will be reimbursed in accordance with the current revision of Removal and Installation Labor Allowance Guidebook, SSP-875 through an authorized Lycoming Distributor, using the standard Warranty procedure.



FACTORY SERVICE NOTES OR BULLETINS
WEIGHT & BALANCE PAPERS
MAJOR REPAIR & ALTERATION

TABLE 1

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| AEIO-540-D4A5 | L-26306-48A | AEIO-540-D4A5 | L-27470-48A | IO-540-AB1A5 | L-27315-48A |
| AEIO-540-D4A5 | L-27079-48A | AEIO-540-D4A5 | L-27471-48A | IO-540-AB1A5 | L-27316-48A |
| AEIO-540-D4A5 | L-27123-48A | AEIO-540-D4A5 | L-27487-48A | IO-540-AB1A5 | L-27317-48A |
| AEIO-540-D4A5 | L-27163-48A | AEIO-540-D4A5 | L-27540-48A | IO-540-AB1A5 | L-27318-48A |
| AEIO-540-D4A5 | L-27164-48A | AEIO-540-D4A5 | L-27542-48A | IO-540-AB1A5 | L-27323-48A |
| AEIO-540-D4A5 | L-27195-48A | AEIO-540-D4A5 | L-27543-48A | IO-540-AB1A5 | L-27331-48A |
| AEIO-540-D4A5 | L-27196-48A | AEIO-540-D4A5 | L-27555-48A | IO-540-AB1A5 | L-27338-48A |
| AEIO-540-D4A5 | L-27197-48A | AEIO-540-D4A5 | L-27556-48A | IO-540-AB1A5 | L-27339-48A |
| AEIO-540-D4A5 | L-27198-48A | AEIO-540-D4A5 | L-27557-48A | IO-540-AB1A5 | L-27340-48A |
| AEIO-540-D4A5 | L-27199-48A | AEIO-540-D4A5 | L-27574-48A | IO-540-AB1A5 | L-27341-48A |
| AEIO-540-D4A5 | L-27243-48A | AEIO-540-D4A5 | L-27576-48A | IO-540-AB1A5 | L-27342-48A |
| AEIO-540-D4A5 | L-27244-48A | AEIO-540-D4A5 | L-27614-48A | IO-540-AB1A5 | L-27352-48A |
| AEIO-540-D4A5 | L-27249-48A | AEIO-540-D4A5 | L-27615-48A | IO-540-AB1A5 | L-27353-48A |
| AEIO-540-D4A5 | L-27251-48A | AEIO-540-D4A5 | L-27616-48A | IO-540-AB1A5 | L-27354-48A |
| AEIO-540-D4A5 | L-27263-48A | AEIO-540-D4A5 | L-27620-48A | IO-540-AB1A5 | L-27355-48A |
| AEIO-540-D4A5 | L-27265-48A | AEIO-540-D4A5 | L-27635-48A | IO-540-AB1A5 | L-27370-48A |
| AEIO-540-D4A5 | L-27272-48A | AEIO-540-D4A5 | L-27636-48A | IO-540-AB1A5 | L-27371-48A |
| AEIO-540-D4A5 | L-27279-48A | AEIO-540-D4A5 | L-27637-48A | IO-540-AB1A5 | L-27372-48A |
| AEIO-540-D4A5 | L-27305-48A | AEIO-540-D4A5 | L-27638-48A | IO-540-AB1A5 | L-27374-48A |
| AEIO-540-D4A5 | L-27322-48A | AEIO-540-D4A5 | L-27655-48A | IO-540-AB1A5 | L-27376-48A |
| AEIO-540-D4A5 | L-27326-48A | IO-540-AB1A5 | RL-8356-48A | IO-540-AB1A5 | L-27379-48A |
| AEIO-540-D4A5 | L-27327-48A | IO-540-AB1A5 | L-8791-48A | IO-540-AB1A5 | L-27390-48A |
| AEIO-540-D4A5 | L-27328-48A | IO-540-AB1A5 | RL-10884-48A | IO-540-AB1A5 | L-27391-48A |
| AEIO-540-D4A5 | L-27332-48A | IO-540-AB1A5 | L-11828-48A | IO-540-AB1A5 | L-27392-48A |
| AEIO-540-D4A5 | L-27334-48A | IO-540-AB1A5 | RL-16849-48A | IO-540-AB1A5 | L-27397-48A |
| AEIO-540-D4A5 | L-27335-48A | IO-540-AB1A5 | RL-23628-48A | IO-540-AB1A5 | L-27398-48A |
| AEIO-540-D4A5 | L-27336-48A | IO-540-AB1A5 | L-27256-48A | IO-540-AB1A5 | L-27404-48A |
| AEIO-540-D4A5 | L-27337-48A | IO-540-AB1A5 | L-27278-48A | IO-540-AB1A5 | L-27408-48A |
| AEIO-540-D4A5 | L-27396-48A | IO-540-AB1A5 | L-27280-48A | IO-540-AB1A5 | L-27414-48A |
| AEIO-540-D4A5 | L-27409-48A | IO-540-AB1A5 | L-27283-48A | IO-540-AB1A5 | L-27415-48A |
| AEIO-540-D4A5 | L-27410-48A | IO-540-AB1A5 | L-27284-48A | IO-540-AB1A5 | L-27419-48A |
| AEIO-540-D4A5 | L-27411-48A | IO-540-AB1A5 | L-27290-48A | IO-540-AB1A5 | L-27421-48A |
| AEIO-540-D4A5 | L-27412-48A | IO-540-AB1A5 | L-27292-48A | IO-540-AB1A5 | L-27422-48A |
| AEIO-540-D4A5 | L-27413-48A | IO-540-AB1A5 | L-27293-48A | IO-540-AB1A5 | L-27423-48A |
| AEIO-540-D4A5 | L-27431-48A | IO-540-AB1A5 | L-27294-48A | IO-540-AB1A5 | L-27425-48A |
| AEIO-540-D4A5 | L-27437-48A | IO-540-AB1A5 | L-27299-48A | IO-540-AB1A5 | L-27426-48A |
| AEIO-540-D4A5 | L-27461-48A | IO-540-AB1A5 | L-27300-48A | IO-540-AB1A5 | L-27427-48A |
| AEIO-540-D4A5 | L-27462-48A | IO-540-AB1A5 | L-27301-48A | IO-540-AB1A5 | L-27428-48A |
| AEIO-540-D4A5 | L-27463-48A | IO-540-AB1A5 | L-27304-48A | IO-540-AB1A5 | L-27429-48A |
| AEIO-540-D4A5 | L-27466-48A | IO-540-AB1A5 | L-27306-48A | IO-540-AB1A5 | L-27430-48A |
| AEIO-540-D4A5 | L-27469-48A | IO-540-AB1A5 | L-27310-48A | IO-540-AB1A5 | L-27441-48A |





TABLE 1 (CONT.)

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| IO-540-AB1A5 | L-27442-48A | IO-540-AB1A5 | L-27527-48A | IO-540-AB1A5 | L-27670-48A |
| IO-540-AB1A5 | L-27443-48A | IO-540-AB1A5 | L-27536-48A | IO-540-AB1A5 | L-27671-48A |
| IO-540-AB1A5 | L-27450-48A | IO-540-AB1A5 | L-27537-48A | IO-540-AB1A5 | L-27679-48A |
| IO-540-AB1A5 | L-27453-48A | IO-540-AB1A5 | L-27548-48A | IO-540-AB1A5 | L-27681-48A |
| IO-540-AB1A5 | L-27454-48A | IO-540-AB1A5 | L-27549-48A | IO-540-AB1A5 | L-27682-48A |
| IO-540-AB1A5 | L-27455-48A | IO-540-AB1A5 | L-27550-48A | IO-540-AB1A5 | L-27692-48A |
| IO-540-AB1A5 | L-27475-48A | IO-540-AB1A5 | L-27551-48A | IO-540-AB1A5 | L-27693-48A |
| IO-540-AB1A5 | L-27477-48A | IO-540-AB1A5 | L-27552-48A | IO-540-AB1A5 | L-27694-48A |
| IO-540-AB1A5 | L-27478-48A | IO-540-AB1A5 | L-27553-48A | IO-540-AB1A5 | L-27696-48A |
| IO-540-AB1A5 | L-27479-48A | IO-540-AB1A5 | L-27581-48A | IO-540-AB1A5 | L-27699-48A |
| IO-540-AB1A5 | L-27480-48A | IO-540-AB1A5 | L-27582-48A | IO-540-AB1A5 | L-27700-48A |
| IO-540-AB1A5 | L-27481-48A | IO-540-AB1A5 | L-27585-48A | IO-540-AB1A5 | L-27701-48A |
| IO-540-AB1A5 | L-27482-48A | IO-540-AB1A5 | L-27586-48A | IO-540-AB1A5 | L-27702-48A |
| IO-540-AB1A5 | L-27483-48A | IO-540-AB1A5 | L-27593-48A | IO-540-AB1A5 | L-27704-48A |
| IO-540-AB1A5 | L-27485-48A | IO-540-AB1A5 | L-27596-48A | IO-540-AB1A5 | L-27721-48A |
| IO-540-AB1A5 | L-27486-48A | IO-540-AB1A5 | L-27597-48A | IO-540-AB1A5 | L-27725-48A |
| IO-540-AB1A5 | L-27488-48A | IO-540-AB1A5 | L-27598-48A | IO-540-AB1A5 | L-27727-48A |
| IO-540-AB1A5 | L-27489-48A | IO-540-AB1A5 | L-27601-48A | IO-540-AB1A5 | L-27732-48A |
| IO-540-AB1A5 | L-27491-48A | IO-540-AB1A5 | L-27602-48A | IO-540-AB1A5 | L-27763-48A |
| IO-540-AB1A5 | L-27494-48A | IO-540-AB1A5 | L-27603-48A | IO-540-AB1A5 | L-27770-48A |
| IO-540-AB1A5 | L-27495-48A | IO-540-AB1A5 | L-27604-48A | IO-540-AB1A5 | L-27776-48A |
| IO-540-AB1A5 | L-27498-48A | IO-540-AB1A5 | L-27605-48A | IO-540-AB1A5 | L-27827-48A |
| IO-540-AB1A5 | L-27499-48A | IO-540-AB1A5 | L-27623-48A | IO-540-AB1A5 | L-27833-48A |
| IO-540-AB1A5 | L-27500-48A | IO-540-AB1A5 | L-27624-48A | IO-540-AB1A5 | L-27913-48A |
| IO-540-AB1A5 | L-27501-48A | IO-540-AB1A5 | L-27625-48A | IO-540-AB1A5 | L-27930-48A |
| IO-540-AB1A5 | L-27502-48A | IO-540-AB1A5 | L-27626-48A | IO-540-AB1A5 | L-27937-48A |
| IO-540-AB1A5 | L-27503-48A | IO-540-AB1A5 | L-27632-48A | IO-540-AB1A5 | L-27955-48A |
| IO-540-AB1A5 | L-27505-48A | IO-540-AB1A5 | L-27643-48A | IO-540-AB1A5 | L-28348-48A |
| IO-540-AB1A5 | L-27506-48A | IO-540-AB1A5 | L-27645-48A | IO-540-AB1A5 | L-28389-48A |
| IO-540-AB1A5 | L-27507-48A | IO-540-AB1A5 | L-27649-48A | IO-540-AB1A5 | L-28413-48A |
| IO-540-AB1A5 | L-27508-48A | IO-540-AB1A5 | L-27650-48A | IO-540-C4B5 | RL-1179-48A |
| IO-540-AB1A5 | L-27515-48A | IO-540-AB1A5 | L-27651-48A | IO-540-C4B5 | RL-1199-48A |
| IO-540-AB1A5 | L-27516-48A | IO-540-AB1A5 | L-27652-48A | IO-540-C4B5 | L-6345-48A |
| IO-540-AB1A5 | L-27517-48A | IO-540-AB1A5 | L-27656-48A | IO-540-C4B5 | L-6707-48A |
| IO-540-AB1A5 | L-27518-48A | IO-540-AB1A5 | L-27657-48A | IO-540-C4B5 | L-7588-48A |
| IO-540-AB1A5 | L-27520-48A | IO-540-AB1A5 | L-27658-48A | IO-540-C4B5 | L-7686-48A |
| IO-540-AB1A5 | L-27521-48A | IO-540-AB1A5 | L-27659-48A | IO-540-C4B5 | L-7928-48A |
| IO-540-AB1A5 | L-27523-48A | IO-540-AB1A5 | L-27660-48A | IO-540-C4B5 | RL-7960-48A |
| IO-540-AB1A5 | L-27524-48A | IO-540-AB1A5 | L-27661-48A | IO-540-C4B5 | L-9419-48A |
| IO-540-AB1A5 | L-27525-48A | IO-540-AB1A5 | L-27662-48A | IO-540-C4B5 | RL-9714-48A |
| IO-540-AB1A5 | L-27526-48A | IO-540-AB1A5 | L-27666-48A | IO-540-C4B5 | L-9766-48A |

**TABLE 1 (CONT.)**

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| IO-540-C4B5 | RL-10199-48A | IO-540-C4D5D | L-27448-48A | IO-540-V4A5 | L-27072-48A |
| IO-540-C4B5 | RL-10477-48A | IO-540-C4D5D | L-27449-48A | IO-540-V4A5 | L-27159-48A |
| IO-540-C4B5 | RL-12252-48A | IO-540-C4D5D | L-27589-48A | IO-540-V4A5 | L-27176-48A |
| IO-540-C4B5 | RL-12495-48A | IO-540-C4D5D | L-27591-48A | IO-540-V4A5 | L-27233-48A |
| IO-540-C4B5 | L-13636-48A | IO-540-C4D5D | L-27592-48A | IO-540-V4A5 | L-27235-48A |
| IO-540-C4B5 | L-14025-48A | IO-540-C4D5D | L-27641-48A | IO-540-V4A5 | L-27236-48A |
| IO-540-C4B5 | L-15960-48A | IO-540-C4D5D | L-27642-48A | IO-540-V4A5 | L-27237-48A |
| IO-540-C4B5 | L-17624-48A | IO-540-C4D5D | L-27654-48A | IO-540-V4A5 | L-27238-48A |
| IO-540-C4B5 | L-18090-48A | IO-540-C4D5D | L-27707-48A | IO-540-V4A5 | L-27239-48A |
| IO-540-C4B5 | L-18373-48A | IO-540-C4D5D | L-27713-48A | IO-540-V4A5 | L-27240-48A |
| IO-540-C4B5 | L-18515-48A | IO-540-C4D5D | L-27714-48A | IO-540-V4A5 | L-27241-48A |
| IO-540-C4B5 | RL-19795-48A | IO-540-C4D5D | L-27733-48A | IO-540-V4A5 | L-27314-48A |
| IO-540-C4B5 | L-23361-48A | IO-540-C4D5D | L-27783-48A | IO-540-V4A5 | L-27361-48A |
| IO-540-C4B5 | L-24127-48A | IO-540-C4D5D | L-27823-48A | IO-540-V4A5 | L-27403-48A |
| IO-540-C4D5D | L-614-48A | IO-540-C4D5D | L-27824-48A | IO-540-V4A5 | L-27460-48A |
| IO-540-C4D5D | RL-6142-48A | IO-540-C4D5D | L-27826-48A | IO-540-V4A5 | L-27511-48A |
| IO-540-C4D5D | RL-8408-48A | IO-540-C4D5D | L-27880-48A | IO-540-V4A5 | L-27512-48A |
| IO-540-C4D5D | L-8919-48A | IO-540-C4D5D | L-27881-48A | IO-540-V4A5 | L-27513-48A |
| IO-540-C4D5D | L-18337-48A | IO-540-C4D5D | L-27882-48A | IO-540-V4A5 | L-27514-48A |
| IO-540-C4D5D | L-27062-48A | IO-540-C4D5D | L-27889-48A | IO-540-V4A5 | L-27529-48A |
| IO-540-C4D5D | L-27088-48A | IO-540-C4D5D | L-27891-48A | IO-540-V4A5 | L-27530-48A |
| IO-540-C4D5D | L-27089-48A | IO-540-C4D5D | L-27997-48A | IO-540-V4A5 | L-27531-48A |
| IO-540-C4D5D | L-27110-48A | IO-540-D4A5 | L-9786-48A | IO-540-V4A5 | L-27532-48A |
| IO-540-C4D5D | L-27146-48A | IO-540-D4A5 | L-14170-48A | IO-540-V4A5 | L-27533-48A |
| IO-540-C4D5D | L-27147-48A | IO-540-D4A5 | L-27381-48A | IO-540-V4A5 | L-27534-48A |
| IO-540-C4D5D | L-27185-48A | IO-540-E1A5 | L-6335-48 | IO-540-V4A5 | L-27544-48A |
| IO-540-C4D5D | L-27186-48A | IO-540-J4A5 | RL-11687-48A | IO-540-V4A5 | L-27562-48A |
| IO-540-C4D5D | L-27188-48A | IO-540-T4B5 | L-18443-48A | IO-540-V4A5 | L-27563-48A |
| IO-540-C4D5D | L-27211-48A | IO-540-T4B5 | L-27064-48A | IO-540-V4A5 | L-27564-48A |
| IO-540-C4D5D | L-27224-48A | IO-540-T4B5 | L-27124-48A | IO-540-V4A5 | L-27565-48A |
| IO-540-C4D5D | L-27269-48A | IO-540-T4B5 | L-27183-48A | IO-540-V4A5 | L-27566-48A |
| IO-540-C4D5D | L-27270-48A | IO-540-T4B5 | L-27281-48A | IO-540-V4A5 | L-27567-48A |
| IO-540-C4D5D | L-27307-48A | IO-540-T4B5 | L-27357-48A | IO-540-V4A5 | L-27568-48A |
| IO-540-C4D5D | L-27319-48A | IO-540-T4B5 | L-27402-48A | IO-540-V4A5 | L-27569-48A |
| IO-540-C4D5D | L-27365-48A | IO-540-T4B5 | L-27497-48A | IO-540-V4A5 | L-27570-48A |
| IO-540-C4D5D | L-27366-48A | IO-540-T4B5 | L-27559-48A | IO-540-V4A5 | L-27571-48A |
| IO-540-C4D5D | L-27367-48A | IO-540-T4B5 | L-27577-48A | IO-540-V4A5 | L-27608-48A |
| IO-540-C4D5D | L-27380-48A | IO-540-T4B5 | L-27634-48A | IO-540-V4A5 | L-27611-48A |
| IO-540-C4D5D | L-27445-48A | IO-540-T4B5 | L-27785-48A | IO-540-V4A5 | L-27612-48A |
| IO-540-C4D5D | L-27446-48A | IO-540-T4B5D | RL-16639-48A | IO-540-V4A5 | L-27613-48A |
| IO-540-C4D5D | L-27447-48A | IO-540-T4B5D | L-17842-48A | IO-540-V4A5 | L-27663-48A |





**TABLE 1 (CONT.)**

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| IO-540-V4A5 | L-27677-48A | O-540-B4B5 | L-25576-40A | O-540-E4C5 | RL-23567-40A |
| IO-540-V4A5 | L-27689-48A | O-540-B4B5 | L-25577-40A | O-540-E4C5 | RL-23575-40AC |
| IO-540-V4A5 | L-27698-48A | O-540-B4B5 | L-25580-40A | O-540-E4C5 | L-24378-40A |
| IO-540-V4A5 | L-27711-48A | O-540-B4B5 | L-25581-40A | O-540-E4C5 | L-25529-40A |
| IO-540-V4A5 | L-27747-48A | O-540-B4B5 | L-25611-40A | O-540-E4C5 | L-25530-40A |
| IO-540-V4A5 | L-27803-48A | O-540-B4B5 | L-25659-40A | O-540-E4C5 | L-25583-40A |
| IO-540-V4A5 | L-27856-48A | O-540-B4B5 | L-25660-40A | O-540-E4C5 | L-25584-40A |
| IO-540-V4A5 | L-27858-48A | O-540-B4B5 | L-25661-40A | O-540-F1B5 | L-23746-40A |
| IO-540-V4A5 | L-27859-48A | O-540-B4B5 | L-25662-40A | O-540-F1B5 | L-25185-40A |
| IO-540-W1A5 | L-27302-48A | O-540-B4B5 | L-25663-40A | O-540-F1B5 | L-25452-40A |
| IO-540-W1A5 | L-27303-48A | O-540-B4B5 | L-25694-40A | O-540-F1B5 | L-25463-40A |
| IO-540-W1A5 | L-27320-48A | O-540-B4B5 | L-25695-40A | O-540-F1B5 | L-25467-40A |
| IO-540-W1A5 | L-27452-48A | O-540-B4B5 | L-25696-40A | O-540-F1B5 | L-25468-40A |
| IO-540-W1A5 | L-27476-48A | O-540-B4B5 | L-25718-40A | O-540-F1B5 | L-25475-40A |
| IO-540-W1A5 | L-27594-48A | O-540-B4B5 | L-25751-40A | O-540-F1B5 | L-25476-40A |
| IO-540-W1A5 | L-27595-48A | O-540-E4A5 | L-18799-40A | O-540-F1B5 | L-25485-40A |
| IO-540-W1A5 | L-27619-48A | O-540-E4A5 | RL-19319-40A | O-540-F1B5 | L-25487-40A |
| IO-540-W1A5 | L-27669-48A | O-540-E4B5 | L-10133-40 | O-540-F1B5 | L-25490-40A |
| IO-540-W1A5 | L-27910-48A | O-540-E4B5 | RL-18025-40A | O-540-F1B5 | L-25492-40A |
| IO-540-W1A5 | L-27911-48A | O-540-E4B5 | RL-18845-40A | O-540-F1B5 | L-25494-40A |
| IO-540-W1A5 | L-27960-48A | O-540-E4B5 | RL-19891-40A | O-540-F1B5 | L-25495-40A |
| O-540-A1A5 | L-15434-40A | O-540-E4B5 | L-20394-40A | O-540-F1B5 | L-25499-40A |
| O-540-A1B5 | RL-15752-40A | O-540-E4B5 | L-20509-40A | O-540-F1B5 | L-25501-40A |
| O-540-A1B5 | L-23528-40A | O-540-E4B5 | L-23628-40A | O-540-F1B5 | L-25503-40A |
| O-540-A1C5 | L-1189-40 | O-540-E4B5 | RL-24285-40A | O-540-F1B5 | L-25506-40A |
| O-540-A1C5 | L-9613-40A | O-540-E4B5 | RL-24946-40A | O-540-F1B5 | L-25510-40A |
| O-540-A1C5 | RL-25610-40A | O-540-E4B5 | L-25239-40A | O-540-F1B5 | L-25511-40A |
| O-540-A1D5 | L-5081-40A | O-540-E4C5 | RL-4602-40A | O-540-F1B5 | L-25513-40A |
| O-540-A1D5 | L-12311-40A | O-540-E4C5 | RL-4606-40A | O-540-F1B5 | L-25515-40A |
| O-540-B2B5 | L-9816-40A | O-540-E4C5 | RL-6288-40A | O-540-F1B5 | L-25517-40A |
| O-540-B2C5 | RL-6358-40A | O-540-E4C5 | L-7960-40A | O-540-F1B5 | L-25518-40A |
| O-540-B2C5 | RL-13274-40A | O-540-E4C5 | RL-10209-40A | O-540-F1B5 | L-25519-40A |
| O-540-B2C5 | L-19818-40A | O-540-E4C5 | L-12639-40A | O-540-F1B5 | L-25520-40A |
| O-540-B2C5 | RL-20166-40A | O-540-E4C5 | RL-14393-40A | O-540-F1B5 | L-25522-40A |
| O-540-B2C5 | RL-20804-40A | O-540-E4C5 | L-14511-40C | O-540-F1B5 | L-25523-40A |
| O-540-B2C5 | RL-25224-40A | O-540-E4C5 | L-15215-40A | O-540-F1B5 | L-25524-40A |
| O-540-B4B5 | RL-14610-40A | O-540-E4C5 | RL-17877-40A | O-540-F1B5 | L-25525-40A |
| O-540-B4B5 | L-21498-40A | O-540-E4C5 | RL-18489-40A | O-540-F1B5 | L-25526-40A |
| O-540-B4B5 | L-25507-40A | O-540-E4C5 | RL-21721-40A | O-540-F1B5 | L-25527-40A |
| O-540-B4B5 | L-25560-40A | O-540-E4C5 | L-22033-40A | O-540-F1B5 | L-25528-40A |
| O-540-B4B5 | L-25561-40A | O-540-E4C5 | L-22976-40A | O-540-F1B5 | L-25531-40A |

TABLE I (CONT.)

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| O-540-F1B5 | L-25534-40A | O-540-F1B5 | L-25593-40A | O-540-F1B5 | L-25645-40A |
| O-540-F1B5 | L-25535-40A | O-540-F1B5 | L-25594-40A | O-540-F1B5 | L-25646-40A |
| O-540-F1B5 | L-25540-40A | O-540-F1B5 | L-25595-40A | O-540-F1B5 | L-25647-40A |
| O-540-F1B5 | L-25542-40A | O-540-F1B5 | L-25596-40A | O-540-F1B5 | L-25648-40A |
| O-540-F1B5 | L-25543-40A | O-540-F1B5 | L-25598-40A | O-540-F1B5 | L-25649-40A |
| O-540-F1B5 | L-25544-40A | O-540-F1B5 | L-25599-40A | O-540-F1B5 | L-25650-40A |
| O-540-F1B5 | L-25545-40A | O-540-F1B5 | L-25600-40A | O-540-F1B5 | L-25652-40A |
| O-540-F1B5 | L-25546-40A | O-540-F1B5 | L-25601-40A | O-540-F1B5 | L-25654-40A |
| O-540-F1B5 | L-25547-40A | O-540-F1B5 | L-25602-40A | O-540-F1B5 | L-25655-40A |
| O-540-F1B5 | L-25548-40A | O-540-F1B5 | L-25603-40A | O-540-F1B5 | L-25658-40A |
| O-540-F1B5 | L-25549-40A | O-540-F1B5 | L-25604-40A | O-540-F1B5 | L-25665-40A |
| O-540-F1B5 | L-25550-40A | O-540-F1B5 | L-25605-40A | O-540-F1B5 | L-25666-40A |
| O-540-F1B5 | L-25551-40A | O-540-F1B5 | L-25606-40A | O-540-F1B5 | L-25667-40A |
| O-540-F1B5 | L-25552-40A | O-540-F1B5 | L-25607-40A | O-540-F1B5 | L-25668-40A |
| O-540-F1B5 | L-25553-40A | O-540-F1B5 | L-25608-40A | O-540-F1B5 | L-25670-40A |
| O-540-F1B5 | L-25554-40A | O-540-F1B5 | L-25609-40A | O-540-F1B5 | L-25671-40A |
| O-540-F1B5 | L-25555-40A | O-540-F1B5 | L-25613-40A | O-540-F1B5 | L-25672-40A |
| O-540-F1B5 | L-25556-40A | O-540-F1B5 | L-25614-40A | O-540-F1B5 | L-25673-40A |
| O-540-F1B5 | L-25557-40A | O-540-F1B5 | L-25615-40A | O-540-F1B5 | L-25674-40A |
| O-540-F1B5 | L-25558-40A | O-540-F1B5 | L-25616-40A | O-540-F1B5 | L-25675-40A |
| O-540-F1B5 | L-25559-40A | O-540-F1B5 | L-25617-40A | O-540-F1B5 | L-25676-40A |
| O-540-F1B5 | L-25563-40A | O-540-F1B5 | L-25618-40A | O-540-F1B5 | L-25678-40A |
| O-540-F1B5 | L-25564-40A | O-540-F1B5 | L-25619-40A | O-540-F1B5 | L-25680-40A |
| O-540-F1B5 | L-25565-40A | O-540-F1B5 | L-25620-40A | O-540-F1B5 | L-25681-40A |
| O-540-F1B5 | L-25566-40A | O-540-F1B5 | L-25622-40A | O-540-F1B5 | L-25683-40A |
| O-540-F1B5 | L-25567-40A | O-540-F1B5 | L-25623-40A | O-540-F1B5 | L-25684-40A |
| O-540-F1B5 | L-25568-40A | O-540-F1B5 | L-25624-40A | O-540-F1B5 | L-25685-40A |
| O-540-F1B5 | L-25569-40A | O-540-F1B5 | L-25625-40A | O-540-F1B5 | L-25686-40A |
| O-540-F1B5 | L-25571-40A | O-540-F1B5 | L-25628-40A | O-540-F1B5 | L-25687-40A |
| O-540-F1B5 | L-25572-40A | O-540-F1B5 | L-25629-40A | O-540-F1B5 | L-25688-40A |
| O-540-F1B5 | L-25573-40A | O-540-F1B5 | L-25630-40A | O-540-F1B5 | L-25689-40A |
| O-540-F1B5 | L-25574-40A | O-540-F1B5 | L-25631-40A | O-540-F1B5 | L-25690-40A |
| O-540-F1B5 | L-25575-40A | O-540-F1B5 | L-25632-40A | O-540-F1B5 | L-25691-40A |
| O-540-F1B5 | L-25578-40A | O-540-F1B5 | L-25633-40A | O-540-F1B5 | L-25692-40A |
| O-540-F1B5 | L-25579-40A | O-540-F1B5 | L-25634-40A | O-540-F1B5 | L-25693-40A |
| O-540-F1B5 | L-25585-40A | O-540-F1B5 | L-25635-40A | O-540-F1B5 | L-25697-40A |
| O-540-F1B5 | L-25586-40A | O-540-F1B5 | L-25636-40A | O-540-F1B5 | L-25698-40A |
| O-540-F1B5 | L-25587-40A | O-540-F1B5 | L-25637-40A | O-540-F1B5 | L-25699-40A |
| O-540-F1B5 | L-25588-40A | O-540-F1B5 | L-25639-40A | O-540-F1B5 | L-25700-40A |
| O-540-F1B5 | L-25591-40A | O-540-F1B5 | L-25640-40A | O-540-F1B5 | L-25701-40A |
| O-540-F1B5 | L-25592-40A | O-540-F1B5 | L-25642-40A | O-540-F1B5 | L-25702-40A |





TABLE I (CONT.)

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| O-540-F1B5 | L-25704-40A | O-540-F1B5 | L-25859-40A | TIO-540-AF1B | L-10548-61A |
| O-540-F1B5 | L-25705-40A | O-540-F1B5 | L-25865-40A | TIO-540-AF1B | L-10550-61A |
| O-540-F1B5 | L-25706-40A | O-540-F1B5 | L-25867-40A | TIO-540-AF1B | L-10558-61A |
| O-540-F1B5 | L-25707-40A | O-540-F1B5 | L-26041-40A | TIO-540-AF1B | L-10566-61A |
| O-540-F1B5 | L-25708-40A | O-540-J3A5 | RL-17708-40A | TIO-540-AF1B | L-10598-61A |
| O-540-F1B5 | L-25709-40A | O-540-J3A5 | L-25656-40A | TIO-540-AF1B | L-10606-61A |
| O-540-F1B5 | L-25711-40A | O-540-J3A5 | L-25657-40A | TIO-540-AF1B | L-10623-61A |
| O-540-F1B5 | L-25712-40A | O-540-J3A5 | L-25677-40A | TIO-540-AF1B | L-10644-61A |
| O-540-F1B5 | L-25715-40A | O-540-J3A5 | L-25682-40A | TIO-540-AF1B | L-10651-61A |
| O-540-F1B5 | L-25723-40A | O-540-J3A5 | L-25799-40A | TIO-540-AF1B | L-10660-61A |
| O-540-F1B5 | L-25725-40A | O-540-J3C5D | RL-10884-40A | TIO-540-AF1B | L-10683-61A |
| O-540-F1B5 | L-25727-40A | O-540-J3C5D | RL-13008-40A | TIO-540-AF1B | L-10732-61A |
| O-540-F1B5 | L-25737-40A | O-540-J3C5D | RL-13269-40A | TIO-540-AF1B | L-10772-61A |
| O-540-F1B5 | L-25738-40A | O-540-J3C5D | RL-14240-40A | TIO-540-AG1A | L-10361-61A |
| O-540-F1B5 | L-25743-40A | O-540-J3C5D | RL-21235-40A | TIO-540-AG1A | L-10419-61A |
| O-540-F1B5 | L-25745-40A | O-540-J3C5D | L-23560-40A | TIO-540-AG1A | L-10505-61A |
| O-540-F1B5 | L-25746-40A | O-540-L3C5D | RL-12233-40A | TIO-540-AG1A | L-10556-61A |
| O-540-F1B5 | L-25752-40A | O-540-L3C5D | L-19738-40A | TIO-540-AG1A | L-10614-61A |
| O-540-F1B5 | L-25754-40A | O-540-L3C5D | RL-20507-40A | TIO-540-AG1A | L-10642-61A |
| O-540-F1B5 | L-25755-40A | O-540-L3C5D | RL-22992-40A | TIO-540-AG1A | L-10670-61A |
| O-540-F1B5 | L-25774-40A | TIO-540-AB1AD | L-10460-61A | TIO-540-AG1A | L-10775-61A |
| O-540-F1B5 | L-25775-40A | TIO-540-AB1AD | L-10549-61A | TIO-540-AK1A | L-10901-61A |
| O-540-F1B5 | L-25779-40A | TIO-540-AB1AD | L-10610-61A | TIO-540-AK1A | L-10908-61A |
| O-540-F1B5 | L-25781-40A | TIO-540-AB1AD | L-10656-61A | TIO-540-C1A | L-3738-61A |
| O-540-F1B5 | L-25783-40A | TIO-540-AB1AD | L-10665-61A | TIO-540-C1A | RL-4661-61A |
| O-540-F1B5 | L-25784-40A | TIO-540-AB1AD | L-10684-61A | TIO-540-C1A | L-5831-61A |
| O-540-F1B5 | L-25786-40A | TIO-540-AB1AD | L-10819-61A | TIO-540-C1A | RL-7223-61A |
| O-540-F1B5 | L-25792-40A | TIO-540-AF1B | L-10751-61A | TIO-540-C1A | L-8420-61A |
| O-540-F1B5 | L-25794-40A | TIO-540-AF1B | RL-5773-61A | TIO-540-X136 | L-1466-X |
| O-540-F1B5 | L-25797-40A | TIO-540-AF1B | L-9288-61A | TIO-540-X155 | L-1459-X |
| O-540-F1B5 | L-25798-40A | TIO-540-AF1B | L-9915-61A | TIO-540-X155 | L-1462-X |
| O-540-F1B5 | L-25805-40A | TIO-540-AF1B | RL-9916-61A | | |
| O-540-F1B5 | L-25826-40A | TIO-540-AF1B | L-10225-61A | | |
| O-540-F1B5 | L-25827-40A | TIO-540-AF1B | L-10324-61A | | |
| O-540-F1B5 | L-25837-40A | TIO-540-AF1B | L-10386-61A | | |
| O-540-F1B5 | L-25838-40A | TIO-540-AF1B | L-10395-61A | | |
| O-540-F1B5 | L-25843-40A | TIO-540-AF1B | L-10467-61A | | |
| O-540-F1B5 | L-25844-40A | TIO-540-AF1B | L-10485-61A | | |
| O-540-F1B5 | L-25846-40A | TIO-540-AF1B | L-10493-61A | | |
| O-540-F1B5 | L-25849-40A | TIO-540-AF1B | L-10509-61A | | |
| O-540-F1B5 | L-25852-40A | TIO-540-AF1B | L-10516-61A | | |



FACTORY SERVICE NOTES OR BULLETINS
WEIGHT & BALANCE PAPERS
MAJOR REPAIR & ALTERATION
REQUIRING ADDITIONAL

## TABLE 2

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| AEIO-540-L1B5 | L-25966-48A | IO-540-AC1A5 | L-27217-48A | IO-540-AC1A5 | L-27769-48A |
| AEIO-540-L1B5 | L-27125-48A | IO-540-AC1A5 | L-27246-48A | IO-540-AC1A5 | L-27801-48A |
| AEIO-540-L1B5 | L-27141-48A | IO-540-AC1A5 | L-27247-48A | IO-540-AC1A5 | L-28013-48A |
| AEIO-540-L1B5 | L-27177-48A | IO-540-AC1A5 | L-27259-48A | IO-540-AC1A5 | L-28033-48A |
| AEIO-540-L1B5 | L-27178-48A | IO-540-AC1A5 | L-27260-48A | IO-540-AC1A5 | L-28075-48A |
| AEIO-540-L1B5 | L-27182-48A | IO-540-AC1A5 | L-27282-48A | IO-540-AC1A5 | L-28081-48A |
| AEIO-540-L1B5 | L-27200-48A | IO-540-AC1A5 | L-27286-48A | IO-540-AC1A5 | L-28122-48A |
| AEIO-540-L1B5 | L-27208-48A | IO-540-AC1A5 | L-27287-48A | IO-540-AC1A5 | L-28203-48A |
| AEIO-540-L1B5 | L-27219-48A | IO-540-AC1A5 | L-27312-48A | IO-540-C1B5 | L-9774-48A |
| AEIO-540-L1B5 | L-27220-48A | IO-540-AC1A5 | L-27313-48A | IO-540-K1A5 | L-5296-48A |
| AEIO-540-L1B5 | L-27271-48A | IO-540-AC1A5 | L-27330-48A | IO-540-K1A5 | L-6344-48A |
| AEIO-540-L1B5 | L-27274-48A | IO-540-AC1A5 | L-27358-48A | IO-540-K1A5 | RL-8342-48A |
| AEIO-540-L1B5 | L-27285-48A | IO-540-AC1A5 | L-27359-48A | IO-540-K1A5 | RL-9306-48A |
| AEIO-540-L1B5 | L-27295-48A | IO-540-AC1A5 | L-27362-48A | IO-540-K1A5 | L-10777-48A |
| AEIO-540-L1B5 | L-27333-48A | IO-540-AC1A5 | L-27364-48A | IO-540-K1A5 | L-20104-48A |
| AEIO-540-L1B5 | L-27344-48A | IO-540-AC1A5 | L-27382-48A | IO-540-K1A5 | L-27206-48A |
| AEIO-540-L1B5 | L-27346-48A | IO-540-AC1A5 | L-27384-48A | IO-540-K1A5 | L-27207-48A |
| AEIO-540-L1B5 | L-27386-48A | IO-540-AC1A5 | L-27393-48A | IO-540-K1A5 | L-27232-48A |
| AEIO-540-L1B5 | L-27388-48A | IO-540-AC1A5 | L-27417-48A | IO-540-K1A5 | L-27395-48A |
| AEIO-540-L1B5 | L-27436-48A | IO-540-AC1A5 | L-27424-48A | IO-540-K1A5 | L-27456-48A |
| AEIO-540-L1B5 | L-27439-48A | IO-540-AC1A5 | L-27433-48A | IO-540-K1A5D | L-6027-48A |
| AEIO-540-L1B5 | L-27440-48A | IO-540-AC1A5 | L-27434-48A | IO-540-K1B5 | RL-1014-48A |
| AEIO-540-L1B5 | L-27538-48A | IO-540-AC1A5 | L-27435-48A | IO-540-K1B5 | RL-14542-48A |
| AEIO-540-L1B5 | L-27539-48A | IO-540-AC1A5 | L-27444-48A | IO-540-K1B5 | RL-20102-48A |
| AEIO-540-L1B5 | L-27622-48A | IO-540-AC1A5 | L-27458-48A | IO-540-K1B5 | RL-27618-48A |
| AEIO-540-L1B5 | L-27680-48A | IO-540-AC1A5 | L-27459-48A | IO-540-K1B5 | L-27757-48A |
| AEIO-540-L1B5 | L-27715-48A | IO-540-AC1A5 | L-27473-48A | IO-540-K1F5 | L-14345-48A |
| AEIO-540-L1B5 | L-27716-48A | IO-540-AC1A5 | L-27474-48A | IO-540-K1G5 | L-4950-48A |
| AEIO-540-L1B5 | L-27717-48A | IO-540-AC1A5 | L-27510-48A | IO-540-K1G5 | RL-7987-48A |
| AEIO-540-L1B5 | L-27808-48A | IO-540-AC1A5 | L-27535-48A | IO-540-K1G5 | L-8339-48A |
| AEIO-540-L1B5 | L-27888-48A | IO-540-AC1A5 | L-27578-48A | IO-540-K1G5 | L-11106-48A |
| AEIO-540-L1B5 | L-28066-48A | IO-540-AC1A5 | L-27583-48A | IO-540-K1G5 | L-12928-48A |
| AEIO-540-L1B5 | L-28139-48A | IO-540-AC1A5 | L-27588-48A | IO-540-K1G5 | L-14818-48A |
| IO-540-AC1A5 | RL-6817-48A | IO-540-AC1A5 | L-27628-48A | IO-540-K1G5 | L-16276-48A |
| IO-540-AC1A5 | RL-8070-48A | IO-540-AC1A5 | L-27630-48A | IO-540-K1G5 | RL-17056-48A |
| IO-540-AC1A5 | RL-12473-48A | IO-540-AC1A5 | L-27646-48A | IO-540-K1G5 | L-20807-48A |
| IO-540-AC1A5 | RL-15936-48A | IO-540-AC1A5 | L-27665-48A | IO-540-K1G5 | L-24113-48A |
| IO-540-AC1A5 | L-27170-48A | IO-540-AC1A5 | L-27708-48A | IO-540-K1G5 | L-27132-48A |
| IO-540-AC1A5 | L-27193-48A | IO-540-AC1A5 | L-27709-48A | IO-540-K1G5 | L-27273-48A |
| IO-540-AC1A5 | L-27194-48A | IO-540-AC1A5 | L-27710-48A | IO-540-K1G5 | L-27309-48A |
| IO-540-AC1A5 | L-27204-48A | IO-540-AC1A5 | L-27720-48A | IO-540-K1G5 | L-27356-48A |





## TABLE 2 (CONT.)

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| IO-540-K1G5 | L-27394-48A | IO-540-K1H5 | L-27547-48A | IO-540-X160 | L-1463-X |
| IO-540-K1G5 | L-27418-48A | IO-540-K1H5 | L-27560-48A | IO-540-X160 | L-1465-X |
| IO-540-K1G5 | L-27464-48A | IO-540-K1H5 | L-27580-48A | | |
| IO-540-K1G5 | L-27467-48A | IO-540-K1H5 | L-27664-48A | | |
| IO-540-K1G5 | L-27468-48A | IO-540-K1H5 | L-27705-48A | | |
| IO-540-K1G5 | RL-27472-48A | IO-540-K1H5 | L-28120-48A | | |
| IO-540-K1G5 | L-27496-48A | IO-540-K1J5 | L-18244-48A | | |
| IO-540-K1G5 | L-27504-48A | IO-540-K1J5 | L-20289-48A | | |
| IO-540-K1G5 | RL-27509-48A | IO-540-K1J5D | L-27137-48A | | |
| IO-540-K1G5 | L-27545-48A | IO-540-K1J5D | L-27541-48A | | |
| IO-540-K1G5 | L-27561-48A | IO-540-K1J5D | L-27639-48A | | |
| IO-540-K1G5 | L-27609-48A | IO-540-K1J5D | L-27640-48A | | |
| IO-540-K1G5 | L-27617-48A | IO-540-K1J5D | L-27653-48A | | |
| IO-540-K1G5 | L-27621-48A | IO-540-K1J5D | L-27723-48A | | |
| IO-540-K1G5 | L-27667-48A | IO-540-K1J5D | L-27724-48A | | |
| IO-540-K1G5 | L-27706-48A | IO-540-K1J5D | L-28109-48A | | |
| IO-540-K1G5 | L-27736-48A | IO-540-K1J5D | L-28110-48A | | |
| IO-540-K1G5 | L-27745-48A | IO-540-K1J5D | L-28148-48A | | |
| IO-540-K1G5 | L-27834-48A | IO-540-K1J5D | L-28149-48A | | |
| IO-540-K1G5 | L-27884-48A | IO-540-K1J5D | L-28165-48A | | |
| IO-540-K1G5 | L-28058-48A | IO-540-K1J5D | L-28166-48A | | |
| IO-540-K1G5 | L-28084-48A | IO-540-K1J5D | L-28198-48A | | |
| IO-540-K1G5 | L-28115-48A | IO-540-K1J5D | L-28211-48A | | |
| IO-540-K1G5 | L-28161-48A | IO-540-K1J5D | L-28251-48A | | |
| IO-540-K1G5D | RL-788-48A | IO-540-K1J5D | L-28252-48A | | |
| IO-540-K1G5D | RL-2452-48A | IO-540-K1K5 | L-28127-48A | | |
| IO-540-K1G5D | L-6043-48A | IO-540-K1K5 | L-28137-48A | | |
| IO-540-K1G5D | RL-7379-48A | IO-540-K1K5 | L-28138-48A | | |
| IO-540-K1G5D | RL-8831-48A | IO-540-L1C5 | L-27383-48A | | |
| IO-540-K1G5D | RL-12880-48A | IO-540-L1C5 | L-27546-48A | | |
| IO-540-K1G5D | L-13149-48A | IO-540-L1C5 | L-28130-48A | | |
| IO-540-K1G5D | L-14761-48A | IO-540-L1C5 | L-28131-48A | | |
| IO-540-K1G5D | RL-16049-48A | IO-540-M1A5 | L-8526-48A | | |
| IO-540-K1G5D | L-16218-48A | IO-540-M1A5 | L-8627-48A | | |
| IO-540-K1G5D | L-17772-48A | IO-540-M1A5 | L-9775-48A | | |
| IO-540-K1G5D | L-20926-48A | IO-540-M1A5 | L-9776-48A | | |
| IO-540-K1G5D | RL-28094-48A | IO-540-M1A5 | RL-14616-48A | | |
| IO-540-K1G5D | RL-28101-48A | IO-540-M1C5 | L-28172-48A | | |
| IO-540-K1H5 | L-27184-48A | IO-540-S1A5 | RL-6087-48A | | |
| IO-540-K1H5 | L-27275-48A | IO-540-S1A5 | RL-6682-48A | | |
| IO-540-K1H5 | L-27451-48A | | | | |



PROPELLER
ADs REQUIRING ADDITIONAL
MAJOR REPAIR & ALTERATION
WEIGHT & BALANCE PAPERS
FACTORY SERVICE NOTES OR BULLETINS

**TABLE 3**

| Model | Engine S/N | Model | Engine S/N | Model | Engine S/N |
|---|---|---|---|---|---|
| AEIO-360-A1B6 | L-29671-51A | IO-360-A3B6D | RL-25468-51A | O-360-A1H6 | L-38015-36A |
| AEIO-360-A1B6 | L-29789-51A | IO-360-A3B6D | RL-29692-51A | O-360-A1H6 | L-38030-36A |
| AEIO-360-A1B6 | L-29790-51A | IO-360-C1C6 | L-1887-51A | O-360-A1H6 | L-38048-36A |
| AEIO-360-A1B6 | L-29801-51A | IO-360-C1C6 | L-10888-51A | O-360-A1H6 | L-38056-36A |
| AEIO-360-A1E6 | L-30089-51A | IO-360-C1C6 | L-19622-51A | O-360-A1H6 | L-38059-36A |
| IO-360-A1B6 | L-18436-51A | IO-360-C1C6 | L-22274-51A | O-360-A1H6 | L-38063-36A |
| IO-360-A1B6 | RL-22215-51A | IO-360-C1C6 | L-29587-51A | O-360-A1H6 | L-38092-36A |
| IO-360-A1B6 | RL-25280-51A | IO-360-C1C6 | L-29621-51A | O-360-A1H6 | L-38104-36A |
| IO-360-A1B6 | L-29550-51A | IO-360-C1C6 | L-29670-51A | O-360-A1H6 | L-38114-36A |
| IO-360-A1B6 | L-29551-51A | IO-360-C1C6 | L-29831-51A | O-360-A1H6 | L-38134-36A |
| IO-360-A1B6 | L-29552-51A | IO-360-C1C6 | L-29939-51A | O-360-A1H6 | L-38138-36A |
| IO-360-A1B6 | L-29622-51A | IO-360-C1D6 | RL-9834-51A | O-360-A1H6 | L-38153-36A |
| IO-360-A1B6 | L-29623-51A | IO-360-C1D6 | RL-29555-51A | O-360-A1H6 | L-38203-36A |
| IO-360-A1B6 | L-29672-51A | IO-360-C1D6 | L-30087-51A | O-360-A1H6 | L-38227-36A |
| IO-360-A1B6 | L-29686-51A | IO-360-C1E6 | L-13296-51A | O-360-A1H6 | L-38229-36A |
| IO-360-A1B6 | L-29687-51A | LO-360-A1G6D | L-226-71A | O-360-A1H6 | L-38235-36A |
| IO-360-A1B6 | L-29688-51A | LO-360-A1G6D | L-358-71A | O-360-A1H6 | L-38259-36A |
| IO-360-A1B6 | L-29690-51A | LO-360-A1G6D | L-458-71A | O-360-A1H6 | L-38263-36A |
| IO-360-A1B6 | L-29691-51A | LO-360-A1G6D | RL-647-71A | O-360-A1H6 | L-38264-36A |
| IO-360-A1B6 | RL-29694-51A | LO-360-A1H6 | L-665-71A | O-360-A1H6 | L-38281-36A |
| IO-360-A1B6 | L-29749-51A | LO-360-A1H6 | L-666-71A | O-360-A1H6 | L-38320-36A |
| IO-360-A1B6 | L-29753-51A | LO-360-A1H6 | L-667-71A | O-360-A1H6 | L-38331-36A |
| IO-360-A1B6 | L-29766-51A | LO-360-A1H6 | L-669-71A | O-360-A1H6 | L-38332-36A |
| IO-360-A1B6 | L-29937-51A | LO-360-A1H6 | L-670-71A | O-360-A1H6 | L-38335-36A |
| IO-360-A1B6 | L-29941-51A | LO-360-A1H6 | L-673-71A | O-360-A1H6 | L-38376-36A |
| IO-360-A1B6 | L-29982-51A | LO-360-A1H6 | L-675-71A | O-360-A1H6 | L-38377-36A |
| IO-360-A1B6 | L-30008-51A | LO-360-A1H6 | L-676-71A | O-360-A1H6 | L-38388-36A |
| IO-360-A1B6 | L-30009-51A | LO-360-A1H6 | L-743-71A | O-360-F1A6 | RL-15978-36A |
| IO-360-A1B6 | L-30101-51A | O-360-A1F6 | L-27262-36A | O-360-F1A6 | L-23194-36A |
| IO-360-A1B6 | L-30102-51A | O-360-A1F6 | L-37982-36A | O-360-F1A6 | RL-23224-36A |
| IO-360-A1B6D | RL-29575-51A | O-360-A1F6 | L-38136-36A | O-360-F1A6 | L-23321-36A |
| IO-360-A3B6 | L-29519-51A | O-360-A1G6D | L-17048-36A | O-360-F1A6 | L-25877-36A |
| IO-360-A3B6 | L-29542-51A | O-360-A1H6 | L-23063-36A | O-360-F1A6 | L-26649-36A |
| IO-360-A3B6 | RL-29693-51A | O-360-A1H6 | L-31664-36A | O-360-F1A6 | RL-26826-36A |
| IO-360-A3B6 | L-30120-51A | O-360-A1H6 | L-37659-36A | O-360-F1A6 | RL-28420-36A |
| IO-360-A3B6 | L-30242-51A | O-360-A1H6 | L-37935-36A | O-360-F1A6 | RL-28534-36A |
| IO-360-A3B6D | RL-8648-51A | O-360-A1H6 | L-37936-36A | O-360-F1A6 | L-29794-36A |
| IO-360-A3B6D | RL-15970-51A | O-360-A1H6 | L-37961-36A | O-360-F1A6 | L-32096-36A |
| IO-360-A3B6D | RL-17502-51A | O-360-A1H6 | L-37986-36A | O-360-F1A6 | L-33190-36A |
| IO-360-A3B6D | RL-17707-51A | O-360-A1H6 | L-37996-36A | O-360-F1A6 | RL-35708-36A |
| IO-360-A3B6D | RL-21032-51A | O-360-A1H6 | L-38009-36A | | |





**TABLE 4**

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|---|---|
| V537911348 | V537912342 | V537912610 | V537912966 | V537913273 |
| V537912180 | V537912343 | V537912612 | V537912967 | V537913274 |
| V537912223 | V537912344 | V537912615 | V537912974 | V537913275 |
| V537912243 | V537912346 | V537912623 | V537912979 | V537913277 |
| V537912244 | V537912348 | V537912624 | V537912980 | V537913278 |
| V537912248 | V537912349 | V537912625 | V537912981 | V537913285 |
| V537912251 | V537912350 | V537912626 | V537913200 | V537913286 |
| V537912259 | V537912356 | V537912628 | V537913201 | V537913287 |
| V537912262 | V537912357 | V537912643 | V537913203 | V537913288 |
| V537912270 | V537912359 | V537912647 | V537913205 | V537913293 |
| V537912273 | V537912360 | V537912648 | V537913209 | V537913297 |
| V537912274 | V537912361 | V537912650 | V537913213 | V537913298 |
| V537912275 | V537912363 | V537912657 | V537913216 | V537913300 |
| V537912277 | V537912364 | V537912663 | V537913219 | V537913303 |
| V537912280 | V537912365 | V537912861 | V537913221 | V537913304 |
| V537912281 | V537912366 | V537912862 | V537913223 | V537913305 |
| V537912282 | V537912367 | V537912874 | V537913225 | V537913306 |
| V537912283 | V537912369 | V537912897 | V537913232 | V537913307 |
| V537912284 | V537912378 | V537912898 | V537913235 | V537913308 |
| V537912285 | V537912379 | V537912899 | V537913240 | V537913309 |
| V537912287 | V537912381 | V537912904 | V537913244 | V537913311 |
| V537912288 | V537912383 | V537912911 | V537913251 | V537913312 |
| V537912289 | V537912386 | V537912917 | V537913253 | V537913313 |
| V537912290 | V537912387 | V537912920 | V537913255 | V537913315 |
| V537912291 | V537912391 | V537912925 | V537913257 | V537913317 |
| V537912292 | V537912393 | V537912930 | V537913258 | V537913318 |
| V537912293 | V537912394 | V537912944 | V537913259 | V537913319 |
| V537912302 | V537912395 | V537912945 | V537913261 | V537913320 |
| V537912335 | V537912397 | V537912950 | V537913266 | V537913321 |
| V537912337 | V537912400 | V537912958 | V537913267 | V537913322 |
| V537912339 | V537912401 | V537912962 | V537913268 | V537913323 |
| V537912340 | V537912503 | V537912963 | V537913269 | V537913324 |
| V537912341 | V537912525 | V537912965 | V537913270 | V537913325 |

TABLE 4 (CONT.)

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|---|---|
| V537913326 | V537913476 | V537913537 | V537913704 | V537913748 |
| V537913327 | V537913478 | V537913541 | V537913706 | V537913750 |
| V537913328 | V537913479 | V537913545 | V537913708 | V537913751 |
| V537913330 | V537913480 | V537913550 | V537913709 | V537913752 |
| V537913331 | V537913481 | V537913552 | V537913714 | V537913753 |
| V537913332 | V537913482 | V537913555 | V537913716 | V537913754 |
| V537913333 | V537913483 | V537913558 | V537913717 | V537913757 |
| V537913334 | V537913484 | V537913560 | V537913718 | V537913758 |
| V537913335 | V537913485 | V537913562 | V537913719 | V537913759 |
| V537913336 | V537913486 | V537913563 | V537913720 | V537913760 |
| V537913338 | V537913487 | V537913564 | V537913721 | V537913761 |
| V537913340 | V537913488 | V537913565 | V537913722 | V537913762 |
| V537913341 | V537913489 | V537913566 | V537913723 | V537913764 |
| V537913342 | V537913490 | V537913567 | V537913724 | V537913765 |
| V537913343 | V537913492 | V537913568 | V537913725 | V537913766 |
| V537913344 | V537913493 | V537913569 | V537913727 | V537913767 |
| V537913345 | V537913494 | V537913570 | V537913728 | V537913768 |
| V537913346 | V537913495 | V537913572 | V537913729 | V537913769 |
| V537913348 | V537913497 | V537913573 | V537913730 | V537913770 |
| V537913349 | V537913498 | V537913574 | V537913731 | V537913771 |
| V537913350 | V537913499 | V537913575 | V537913732 | V537913772 |
| V537913351 | V537913504 | V537913576 | V537913733 | V537913773 |
| V537913352 | V537913507 | V537913580 | V537913734 | V537913774 |
| V537913353 | V537913508 | V537913582 | V537913735 | V537913775 |
| V537913356 | V537913509 | V537913583 | V537913736 | V537913776 |
| V537913358 | V537913514 | V537913584 | V537913739 | V537913777 |
| V537913359 | V537913516 | V537913680 | V537913740 | V537913778 |
| V537913360 | V537913523 | V537913687 | V537913741 | V537913779 |
| V537913470 | V537913524 | V537913688 | V537913742 | V537913780 |
| V537913471 | V537913527 | V537913697 | V537913743 | V537913781 |
| V537913472 | V537913531 | V537913699 | V537913744 | V537913784 |
| V537913473 | V537913534 | V537913700 | V537913745 | V537913785 |
| V537913474 | V537913536 | V537913703 | V537913746 | V537913786 |





TABLE 4 (CONT.)

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|---|---|
| V537913787 | V537914136 | V537914175 | V537914372 | V537914519 |
| V537913788 | V537914137 | V537914176 | V537914398 | V537914520 |
| V537913789 | V537914138 | V537914178 | V537914399 | V537914521 |
| V537913790 | V537914139 | V537914179 | V537914485 | V537914522 |
| V537913791 | V537914140 | V537914180 | V537914486 | V537914523 |
| V537913792 | V537914143 | V537914181 | V537914487 | V537914524 |
| V537913793 | V537914144 | V537914182 | V537914488 | V537914525 |
| V537913794 | V537914145 | V537914210 | V537914489 | V537914526 |
| V537913795 | V537914146 | V537914214 | V537914490 | V537914527 |
| V537913796 | V537914147 | V537914256 | V537914491 | V537914528 |
| V537913798 | V537914148 | V537914257 | V537914492 | V537914529 |
| V537913799 | V537914151 | V537914259 | V537914493 | V537914530 |
| V537913866 | V537914152 | V537914262 | V537914494 | V537914532 |
| V537913900 | V537914153 | V537914271 | V537914495 | V537914533 |
| V537913901 | V537914155 | V537914274 | V537914496 | V537914534 |
| V537913903 | V537914156 | V537914275 | V537914497 | V537914535 |
| V537913906 | V537914157 | V537914281 | V537914498 | V537914538 |
| V537913907 | V537914158 | V537914286 | V537914501 | V537914698 |
| V537913908 | V537914159 | V537914287 | V537914502 | V537914699 |
| V537913909 | V537914160 | V537914293 | V537914503 | V537914884 |
| V537913995 | V537914161 | V537914295 | V537914504 | V537914887 |
| V537913997 | V537914162 | V537914296 | V537914505 | V537914888 |
| V537913998 | V537914163 | V537914298 | V537914506 | V537914889 |
| V537914123 | V537914164 | V537914302 | V537914507 | V537914890 |
| V537914124 | V537914165 | V537914306 | V537914508 | V537914891 |
| V537914125 | V537914166 | V537914307 | V537914509 | V537914892 |
| V537914126 | V537914167 | V537914308 | V537914510 | V537914893 |
| V537914127 | V537914168 | V537914311 | V537914512 | V537914894 |
| V537914129 | V537914169 | V537914314 | V537914513 | V537914895 |
| V537914130 | V537914170 | V537914315 | V537914514 | V537914896 |
| V537914132 | V537914172 | V537914317 | V537914515 | V537914897 |
| V537914133 | V537914173 | V537914328 | V537914516 | V537914898 |
| V537914135 | V537914174 | V537914330 | V537914518 | V537914899 |



FACTORY SERVICE NOTES OR BULLETINS
WEIGHT & BALANCE PAPERS
MAJOR REPAIR & ALTERATION

TABLE 4 (CONT.)

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|---|---|
| V537914900 | V537914934 | V537915244 | V537915454 | V537915699 |
| V537914901 | V537914935 | V537915245 | V537915455 | V537915718 |
| V537914902 | V537914936 | V537915246 | V537915456 | V537915719 |
| V537914903 | V537914937 | V537915247 | V537915457 | V537915720 |
| V537914904 | V537914939 | V537915248 | V537915458 | V537915721 |
| V537914905 | V537914940 | V537915249 | V537915459 | V537915722 |
| V537914906 | V537914943 | V537915250 | V537915460 | V537915723 |
| V537914907 | V537914944 | V537915251 | V537915461 | V537915724 |
| V537914908 | V537914945 | V537915252 | V537915462 | V537915725 |
| V537914909 | V537914946 | V537915255 | V537915463 | V537915726 |
| V537914910 | V537914947 | V537915299 | V537915464 | V537915727 |
| V537914911 | V537914948 | V537915302 | V537915465 | V537915728 |
| V537914913 | V537914949 | V537915303 | V537915466 | V537915729 |
| V537914914 | V537915047 | V537915304 | V537915467 | V537915730 |
| V537914915 | V537915048 | V537915309 | V537915469 | V537915731 |
| V537914916 | V537915223 | V537915312 | V537915470 | V537915732 |
| V537914917 | V537915224 | V537915313 | V537915471 | V537915733 |
| V537914918 | V537915226 | V537915314 | V537915472 | V537915734 |
| V537914919 | V537915227 | V537915319 | V537915475 | V537915735 |
| V537914920 | V537915228 | V537915321 | V537915478 | V537915736 |
| V537914921 | V537915229 | V537915322 | V537915479 | V537915737 |
| V537914922 | V537915230 | V537915325 | V537915481 | V537915738 |
| V537914923 | V537915231 | V537915326 | V537915484 | V537915739 |
| V537914924 | V537915232 | V537915443 | V537915486 | V537915740 |
| V537914925 | V537915234 | V537915444 | V537915488 | V537915741 |
| V537914926 | V537915235 | V537915445 | V537915491 | V537915742 |
| V537914927 | V537915236 | V537915446 | V537915492 | V537915743 |
| V537914928 | V537915238 | V537915447 | V537915493 | V537915744 |
| V537914929 | V537915239 | V537915448 | V537915494 | V537915745 |
| V537914930 | V537915240 | V537915449 | V537915495 | V537915746 |
| V537914931 | V537915241 | V537915450 | V537915498 | V537915747 |
| V537914932 | V537915242 | V537915451 | V537915499 | V537915959 |
| V537914933 | V537915243 | V537915453 | V537915502 | V537915960 |





TABLE 4 (CONT.)

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|---|---|
| V537915961 | V537916009 | V537916346 | V537916419 | V537916495 |
| V537915962 | V537916011 | V537916347 | V537916421 | V537916496 |
| V537915963 | V537916012 | V537916348 | V537916423 | V537916497 |
| V537915964 | V537916013 | V537916349 | V537916425 | V537916498 |
| V537915965 | V537916016 | V537916350 | V537916426 | V537916499 |
| V537915966 | V537916019 | V537916351 | V537916427 | V537916540 |
| V537915967 | V537916112 | V537916352 | V537916428 | V537916605 |
| V537915968 | V537916113 | V537916353 | V537916430 | V537916606 |
| V537915969 | V537916117 | V537916354 | V537916432 | V537916607 |
| V537915970 | V537916120 | V537916355 | V537916433 | V537916609 |
| V537915971 | V537916122 | V537916356 | V537916437 | V537916610 |
| V537915972 | V537916129 | V537916357 | V537916471 | V537916611 |
| V537915973 | V537916130 | V537916358 | V537916472 | V537916612 |
| V537915975 | V537916132 | V537916359 | V537916473 | V537916613 |
| V537915976 | V537916134 | V537916360 | V537916474 | V537916614 |
| V537915977 | V537916135 | V537916361 | V537916475 | V537916615 |
| V537915978 | V537916140 | V537916362 | V537916476 | V537916616 |
| V537915979 | V537916141 | V537916364 | V537916477 | V537916617 |
| V537915980 | V537916143 | V537916365 | V537916478 | V537916618 |
| V537915981 | V537916332 | V537916366 | V537916479 | V537916619 |
| V537915982 | V537916333 | V537916367 | V537916480 | V537916620 |
| V537915983 | V537916334 | V537916368 | V537916481 | V537916621 |
| V537915984 | V537916335 | V537916369 | V537916482 | V537916622 |
| V537915985 | V537916336 | V537916370 | V537916483 | V537916623 |
| V537915986 | V537916337 | V537916371 | V537916484 | V537916624 |
| V537915987 | V537916338 | V537916372 | V537916485 | V537916625 |
| V537915989 | V537916339 | V537916374 | V537916486 | V537916626 |
| V537915990 | V537916340 | V537916375 | V537916488 | V537916627 |
| V537915991 | V537916341 | V537916376 | V537916489 | V537916628 |
| V537915995 | V537916342 | V537916410 | V537916491 | V537916629 |
| V537915996 | V537916343 | V537916412 | V537916492 | V537916630 |
| V537916004 | V537916344 | V537916414 | V537916493 | V537916631 |
| V537916008 | V537916345 | V537916416 | V537916494 | V537916632 |

TABLE 4 (CONT.)

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|---|---|
| V537916633 | V537916669 | V537916798 | V537916840 | V537916947 |
| V537916634 | V537916670 | V537916799 | V537916843 | V537916948 |
| V537916635 | V537916671 | V537916800 | V537916911 | V537916949 |
| V537916637 | V537916672 | V537916801 | V537916912 | V537916951 |
| V537916639 | V537916673 | V537916802 | V537916913 | V537916952 |
| V537916640 | V537916674 | V537916803 | V537916914 | V537916953 |
| V537916641 | V537916717 | V537916804 | V537916915 | V537916954 |
| V537916642 | V537916719 | V537916805 | V537916916 | V537916955 |
| V537916643 | V537916722 | V537916806 | V537916917 | V537916956 |
| V537916644 | V537916725 | V537916808 | V537916919 | V537916961 |
| V537916645 | V537916726 | V537916809 | V537916920 | V537916966 |
| V537916646 | V537916732 | V537916811 | V537916922 | V537916967 |
| V537916647 | V537916733 | V537916812 | V537916923 | V537916969 |
| V537916648 | V537916738 | V537916813 | V537916925 | V537916972 |
| V537916649 | V537916741 | V537916815 | V537916926 | V537916974 |
| V537916650 | V537916742 | V537916816 | V537916927 | V537916976 |
| V537916651 | V537916744 | V537916817 | V537916928 | V537916978 |
| V537916652 | V537916746 | V537916818 | V537916929 | V537916981 |
| V537916653 | V537916751 | V537916819 | V537916931 | V537916986 |
| V537916655 | V537916782 | V537916820 | V537916932 | V537916990 |
| V537916656 | V537916783 | V537916822 | V537916933 | V537917027 |
| V537916657 | V537916784 | V537916823 | V537916934 | V537917036 |
| V537916658 | V537916785 | V537916824 | V537916935 | V537917038 |
| V537916659 | V537916786 | V537916826 | V537916936 | V537917096 |
| V537916660 | V537916787 | V537916827 | V537916937 | V537917197 |
| V537916661 | V537916788 | V537916828 | V537916938 | V537917199 |
| V537916662 | V537916789 | V537916829 | V537916940 | V537917200 |
| V537916663 | V537916791 | V537916831 | V537916941 | V537917202 |
| V537916664 | V537916792 | V537916835 | V537916942 | V537917210 |
| V537916665 | V537916793 | V537916836 | V537916943 | V537917214 |
| V537916666 | V537916794 | V537916837 | V537916944 | V537917216 |
| V537916667 | V537916796 | V537916838 | V537916945 | V537917277 |
| V537916668 | V537916797 | V537916839 | V537916946 | V537917279 |





TABLE 4 (CONT.)

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|---|---|
| V537917280 | V537918639 | V537918997 | V537919335 | V537920393 |
| V537917281 | V537918649 | V537918998 | V537919336 | V537920495 |
| V537917282 | V537918650 | V537918999 | V537919337 | V537920497 |
| V537917284 | V537918651 | V537919000 | V537919338 | V537920498 |
| V537917285 | V537918652 | V537919001 | V537919339 | V537920499 |
| V537917288 | V537918655 | V537919002 | V537919341 | V537920500 |
| V537917600 | V537918656 | V537919003 | V537919342 | V537920503 |
| V537917700 | V537918664 | V537919004 | V537919343 | V537920504 |
| V537917780 | V537918667 | V537919005 | V537919344 | V537920505 |
| V537917800 | V537918672 | V537919006 | V537919346 | V537920506 |
| V537917903 | V537918674 | V537919007 | V537919347 | V537920507 |
| V537918020 | V537918971 | V537919008 | V537919348 | V537920508 |
| V537918023 | V537918972 | V537919009 | V537919349 | V537920509 |
| V537918024 | V537918973 | V537919010 | V537919350 | V537920510 |
| V537918025 | V537918974 | V537919011 | V537919351 | V537920511 |
| V537918026 | V537918975 | V537919012 | V537919352 | V537920512 |
| V537918028 | V537918977 | V537919013 | V537919828 | V537920514 |
| V537918029 | V537918978 | V537919014 | V537919832 | V537920515 |
| V537918030 | V537918979 | V537919015 | V537919855 | V537920516 |
| V537918035 | V537918980 | V537919016 | V537920046 | V537920517 |
| V537918036 | V537918982 | V537919017 | V537920349 | V537920518 |
| V537918037 | V537918983 | V537919018 | V537920351 | V537920519 |
| V537918042 | V537918984 | V537919019 | V537920353 | V537920520 |
| V537918043 | V537918985 | V537919020 | V537920354 | V537920521 |
| V537918044 | V537918987 | V537919021 | V537920357 | V537920522 |
| V537918045 | V537918988 | V537919023 | V537920358 | V537920523 |
| V537918046 | V537918989 | V537919025 | V537920361 | V537920524 |
| V537918047 | V537918990 | V537919081 | V537920365 | V537920720 |
| V537918048 | V537918991 | V537919123 | V537920368 | V537920721 |
| V537918049 | V537918992 | V537919127 | V537920371 | V537920722 |
| V537918051 | V537918994 | V537919129 | V537920374 | V537920723 |
| V537918136 | V537918995 | V537919333 | V537920375 | V537920725 |
| V537918334 | V537918996 | V537919334 | V537920378 | V537920726 |

TABLE 4 (CONT.)

| Crankshaft S/N | Crankshaft S/N | Crankshaft S/N |
|---|---|---|
| V537920727 | V537920944 | V537922049 |
| V537920728 | V537920946 | V537922050 |
| V537920729 | V537920956 | V537922052 |
| V537920730 | V537920957 | V537922983 |
| V537920731 | V537920959 | V537923515 |
| V537920732 | V537921541 | V537923516 |
| V537920733 | V537921542 | |
| V537920737 | V537921544 | |
| V537920739 | V537921545 | |
| V537920740 | V537921546 | |
| V537920742 | V537921547 | |
| V537920743 | V537921549 | |
| V537920744 | V537921550 | |
| V537920745 | V537921551 | |
| V537920746 | V537921553 | |
| V537920747 | V537921554 | |
| V537920748 | V537921558 | |
| V537920749 | V537921679 | |
| V537920909 | V537922034 | |
| V537920911 | V537922035 | |
| V537920913 | V537922036 | |
| V537920915 | V537922037 | |
| V537920916 | V537922038 | |
| V537920918 | V537922039 | |
| V537920923 | V537922040 | |
| V537920925 | V537922041 | |
| V537920932 | V537922042 | |
| V537920934 | V537922043 | |
| V537920935 | V537922044 | |
| V537920937 | V537922045 | |
| V537920938 | V537922046 | |
| V537920941 | V537922047 | |
| V537920943 | V537922048 | |

Pa



**LYCOMING**
A Textron Company

Lycoming Engines, is a division of Avco Corporation, a wholly owned subsidiary of Textron Inc.

652 Oliver Street
Williamsport, PA 17701
570-323-6181
Fax: 570-327-7160

July 11, 2005

Dear Valued Lycoming Customer,

As an industry leader, Lycoming continues to improve the reliability and performance of its engines, having built over 325,000 engines during its 75 year history in the aviation industry. Lycoming strives to apply innovation to advance the design, performance and reliability of its engines.

In 2002, Lycoming issued three Service Bulletins relating to crankshafts in turbocharged engines rated at 300 hp and higher. Approximately 950 engines were removed from service pursuant to these Service Bulletins. The crankshafts in these engines were replaced with crankshafts forged with a different process and specific FAA-approved process controls designed to verify compliance with Lycoming's specification. Lycoming has recently certified and gained FAA approval of a new forging supplier, which will use the same enhanced process controls.

Lycoming and the FAA have continued to monitor closely and analyze the service performance of engine models equipped with crankshafts made with the same process as those affected by the earlier Service Bulletins. Though our analysis is still ongoing, it appears that the same condition that prompted the 2002 Service Bulletins could be adversely affecting the performance of certain engines outside of the scope of those Bulletins. Lycoming continues to monitor the performance of its engines and, consistent with our strong commitment to flight safety, will continue to take whatever measures are necessary for safety and reliability.

Service Bulletin 566 requires crankshaft removal within the next fifty (50) flight hours or within six (6) months, whichever comes first. The affected crankshafts and engines are identified in the Bulletin.

Contact Lycoming at 1-800-258-3279 or outside the United States at 570-323-6181 and follow the menu instructions, or by fax at 570-327-7160 to schedule the return of your engine.

When Lycoming receives your engine it will be disassembled, inspected and scheduled for reassembly that includes an approved crankshaft and new bearings. We will warrant this work on your engine for twelve (12) months, with the start date of the warranty being two weeks from the date the engine is shipped back to you, after compliance with this Bulletin, subject to the standard warranty restrictions.

FACTORY SERVICE NOTES OR BULLETINS
WEIGHT & BALANCE PAPERS
MAJOR REPAIR & ALTERATION

LYCOMING

Lycoming will pay inbound and outbound freight via Lycoming's specified LTL carrier. Removal and re-installation of the engine will be reimbursed per the *Removal and Installation Labor Allowance* Guide Book (SSP-875) through an authorized Lycoming distributor.

Lycoming will prioritize the engine repairs as follows:

1. Federal, State and Municipal facilities, especially those involved in Homeland Security;
2. FAR Part 121 operators (scheduled carriers);
3. FAR Part 135 operators (commuter and on-demand operations);
4. FAR Part 91 and 141 operators (flight training and general operations).

We apologize for the inconvenience to you. We will continue to exert our best efforts to meet our commitments to you: quality, reliability and service.

Again, if you have any questions, please contact us at the Lycoming Engines Service Department: Lycoming Customer Service 800 number 1-800-258-3279; outside the US 1-570-323-6181 or fax 1-570-327-7160.

THE LYCOMING TEAM

Enclosure: SB 566

## Factory Turbocharged Engines (TIO-)

The following items, if not returned with your engine, will cause <u>delay</u> in the repair process.

- Engine logbook with an entry of the engine removal and the time since received from Lycoming. Example: Time since new or Time since overhaul or rebuild
- Injector Lines
- Complete Turbo system including exhaust system up to the turbocharger and complete fuel injection system which includes: Servo, flow divider, Lycoming fuel injector nozzles and lines

**Do not return** the following items with your engine. These items if received will be returned to you prior to return of your engine.

- ☐ Aircraft Baffles
- ☐ Chrome Covers
- ☐ CHT Probe
- ☐ Air condition Compressors
- ☐ De-Icer Systems
- ☐ **Engine Mounts**
- ☐ Fuel Rotometer
- ☐ Fuel System Fittings
- ☐ Hydraulic Pump
- ☐ Magneto Tach Pick Up
- ☐ Non Lycoming Injector Nozzles (GAMI) – do not remove injector lines – these are required for repair.
- ☐ Oil Cooler Hoses
- ☐ Oil Pressure Probe
- ☐ Oil System Fittings
- ☐ Oil Temperature Probes
- ☐ Prop Governor
- ☐ Quick Drains
- ☐ Remote Oil Filters And Associated Hoses / Lines
- ☐ **Starter Ring Gear Support**
- ☐ **Starter/Alternator And Associated Brackets**
- ☐ Sump Heater
- ☐ Tailpipes
- ☐ TIT Probe
- ☐ Turbo Blanket
- ☐ Vacuum Pump
- ☐ If the engine was turbocharged through an STC – DO NOT return turbo system

**Ensure all openings to the engine are plugged prior to shipment to prevent engine contamination.**

## Factory Engines (AEIO-, IO- or O-)

The following items, if not returned with your engine, will cause **delay** in the repair process.

- Engine logbook with an entry of the engine removal and the time since received from Lycoming. Example: Time since new or Time since overhaul or rebuild
- Complete fuel injection system which includes: Servo, flow divider, Lycoming fuel injector nozzles, lines and fuel line from Servo to flow divider

**Do not return** the following items with your engine. These items if received will be returned to you prior to return of your engine.

- ☐ Aircraft Baffles
- ☐ Chrome Covers
- ☐ CHT Probe
- ☐ Air condition Compressors
- ☐ De-Icer Systems
- ☐ **Engine Mounts**
- ☐ Fuel Rotometer
- ☐ Fuel System Fittings
- ☐ Hydraulic Pump
- ☐ Magneto Tach Pick Up
- ☐ Non Lycoming Injector Nozzles (GAMI) – do not remove injector lines – these are required for repair.
- ☐ Oil Cooler Hoses
- ☐ Oil Pressure Probe
- ☐ Oil System Fittings
- ☐ Oil Temperature Probes
- ☐ Prop Governor
- ☐ Quick Drains
- ☐ Remote Oil Filters And Associated Hoses / Lines
- ☐ **Starter Ring Gear Support**
- ☐ **Starter/Alternator And Associated Brackets**
- ☐ Sump Heater
- ☐ Vacuum Pump
- ☐ If the engine was turbocharged through an STC – DO NOT return turbo system

**Ensure all openings to the engine are plugged prior to shipment to prevent engine contamination.**



adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

## Service Bulletin Compliance

Aircraft Registration No. _____

Make & Model _____

Serial No. _____

| MANU-FACTURER | BULLETIN NUMBER | REVISION NUMBER | BULLETIN DATE | SUBJECT | COMPLIANCE ACCOMPLISHED: Date, Time or Cycles | ADDITIONAL COMPLIANCE REQUIRED AT: Date, Time or Cycles |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

GARMIN.

Garmin International, Inc.
1200 East 151st Street
Olathe, Kansas 66062
P: 913-397-8200 F: 913-397-8282

February 19, 2025

**Subject: Permission to Use FAA STC SA01818WI or EASA STC 10060846 , or EASA STC 10064473**
**Installation of Garmin G5 Electronic Flight Instrument**
**See Approved Model List (AML) for Approved Aircraft Models**

Pursuant to 49 U.S.C. 44704, 14 CFR § 21.120, 14 CFR § 91.403(d), FAA Order 8110.48 and FAA Advisory Circular 21-40; Garmin International, Inc. hereby grants permission to TYRREL DAVIS owner/operator of Cessna 177A bearing manufacturer's serial number 17701535 to use FAA Supplemental Type Certificate SA01818WI and deliverable data associated with it, for the sole and express purpose of installation and approval of the installation of a Garmin G5 Electronic Flight Instrument into the above referenced aircraft. Installer must still verify airframe eligibility per STC SA01818WI and the associated Approved Model List (AML). Following modification per STC SA01818WI, a copy of this permission letter should be placed in the aircraft's permanent records. Alteration or reproduction of this letter is strictly prohibited.

For Aircraft registered in an EASA state, EASA STC **10060846** (EASA Validation of US FAA STC SA01818WI) may be used in the same manner as STC SA01818WI, provided the aircraft is listed on the AML for STC SA01818WI and the aircraft also has a EASA Type Certificate.

For Aircraft registered in an EASA state but not on the FAA STC, EASA STC **10064473** may be used in the same manner as STC SA01818WI, provided the aircraft is listed on the EASA Approved AML 005-01112-46 for STC 10064473.

Robert G. Murray
Director, Aircraft Certification
Garmin International, Inc.

United States of America
Department of Transportation
Federal Aviation Administration

# Supplemental Type Certificate

Number: SA01818WI

This certificate issued to: Garmin International, Inc.
1200 East 151st Street
Olathe, KS 66062

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 23* of the Federal Aviation Regulations.

Original Product – Type Certificate Number
Multiple - AML STC

Make:
Model: See Approved Model List (AML) SA01818WI for approved aircraft models and applicable airworthiness regulations

Description of Type Design Change:
Installation of Garmin G5 Electronic Flight Instrument
Data Required:
(1) Garmin Master Drawing List (MDL) 005-01112-01, Revision 1, dated July 22, 2016
(2) Garmin G5 STC Maintenance Manual including ICA190-01112-11, Revision 1, dated July 22, 2016
(3) Garmin G5 Airplane Flight Manual Supplement 190-01112-13, Revision 1, dated July 22, 2016
Later FAA-approved revisions to the data listed above are incorporated without amendment to this certificate

Limitations and Conditions:
(1) Compatibility of this design change with previously approved modifications must be determined by the installer.
(2) The installation of the G5 requires the retention of the mechanical airspeed indicator, altimeter, and vertical speed indicator. The installation of the G5 in configurations not approved by this STC, such as an electronic standby instrument, requires separate airworthiness approval.
(3) For installations in aircraft approved for IFR operations:
(a) If the G5 is installed as the primary attitude indicator, the existing rate of turn indicator must be retained.
(b) If the G5 is installed as the rate of turn indicator, the existing primary attitude indicator must be retained.

(continued on Page 3)

*This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, and revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

Date of Application: May 5, 2016
Date of Issuance: July 22, 2016

Date Reissued:
Date Amended: Apr 28, 2017; Oct 18, 2017; Mar 15, 2019, Jul 19, 2019, Sep 28, 2021

*By Direction of the Administrator*

*Signature* Paul Mast

*Title* Paul Mast
ODA STC Unit Administrator
ODA-240087-CE

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred or made available to third persons by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights to the design data nor to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref. 14 CFR 21.120)

GARMIN.

# 4 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

## 4.1 Airworthiness Limitations

The Airworthiness Limitations section is FAA-approved and specifies maintenance required under §§ 43.16 and 91.403 of Title 14 of the Code of Federal Regulations, unless an alternative program has been FAA-approved.

There are no new (or additional) airworthiness limitations associated with this equipment and/or installation.

FAA APPROVED

Robert Murray
STC Unit Administrator
ODA-240087-CE

12/27/2021
Date

## 4.2 Servicing Information

This section addresses servicing information for the G5 Electronic Flight Display, Battery, GMU 11 magnetometer, and the GAD 29/29B/29D data bus converter.

### 4.2.1 G5 Electronic Flight Instrument

The G5 unit maintenance is 'on condition' only. See section 6 for equipment removal and installation. No component-level overhaul is required. Reference Table 4-1 for necessary tests or checks and the specific intervals for the G5.

### 4.2.2 GMU 11 Magnetometer

The GMU 11 unit maintenance is 'on condition' only. See section 6 for equipment removal and installation. No component-level overhaul is required. Reference Table 4-1 for necessary tests or checks and the specific intervals for the GMU 11.

**NOTE**

*After replacing or servicing electrical components near the GMU 11 magnetometer, the Magnetometer Interference Test (reference Section 7.8) and Magnetometer Calibration Procedure (reference Section 7.5.3) must be performed.*

### 4.2.3 GAD 29/29B/29D Data Bus Converter

The GAD 29/29B/29D unit maintenance is 'on condition' only. See section 6 for equipment removal and installation. No component-level overhaul is required. Reference Table 4-1 for necessary tests or checks and the specific intervals for the GAD 29/29B/29D.

### 4.2.4 GAD 13 Data Bus Converter

The GAD 13 unit maintenance is 'on condition' only. See section 6 for equipment removal and installation. No component-level overhaul is required. Reference Table 4-1 for necessary tests or checks and the specific intervals for the GAD 13.

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### 4.4 Special Inspection Requirements

After a suspected lightning strike, the following actions must be performed for the specific LRU.

**GTP 59 Temperature Probe**

Inspect the GTP 59 temperature probe for signs of lightning damage. Check the self-sealing washer (P/N 212-00026-00) used on the probe tip outside of the aircraft for any evidence of melting or lack of seal. Replace the washer if damaged. If there is evidence of lightning strike to the GTP 59 temperature probe or any lightning damage, replace the probe.

Tube-and-fabric aircraft must replace the GTP 59 bond strap (if installed) in accordance with Section 4 of the Garmin G5 Electronic Flight Instrument Part 23 AML STC Installation Manual (190-01112-10).

**Lightning Protection Module (LPM)**

The LPM shall be replaced. Reference *Garmin G5 Electronic Flight Instrument Part 23 AML STC Installation Manual*, 190-01112-10 section 4 and 5 for connector assembly and wiring requirements of LPM.

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GARMIN Ltd. or its subsidiaries
c/o GARMIN International, Inc.
1200 E. 151st Street
Olathe, Kansas 66062 U.S.A.

**FAA Approved**
**AIRPLANE FLIGHT MANUAL SUPPLEMENT**
**or**
**SUPPLEMENTAL AIRPLANE FLIGHT MANUAL**
**for the**
**GARMIN G5 ELECTRONIC FLIGHT INSTRUMENT**
**as installed in**

Cessna 177A
Make and Model Airplane

Registration Number: N30553 Serial Number: 17701322

This document serves as an Airplane Flight Manual Supplement or as a Supplemental Airplane Flight Manual when the aircraft is equipped in accordance with Supplemental Type Certificate SA01818WI for the installation and operation of the Garmin G5 Electronic Flight Instrument. This document must be carried in the airplane at all times.

The information contained herein supplements or supersedes the information made available to the operator by the aircraft manufacturer in the form of clearly stated placards or markings, or in the form of an FAA approved Airplane Flight Manual, only in those areas listed herein. For limitations, procedures and performance information not contained in this document, consult the basic placards or markings, or the basic FAA approved Airplane Flight Manual.

FAA approved sections of this supplement are labeled as "FAA APPROVED." Sections not labeled "FAA APPROVED" are provided for guidance information only.

FAA APPROVED BY: Paul Mast

Paul Mast
ODA STC Unit Administrator
GARMIN International, Inc
ODA-240087-CE

DATE: 5-2-2023

The following table shows the meaning of each message. System messages are displayed in white text.

| Message | Meaning |
|---|---|
| **External Power Lost** | Aircraft power has been removed from the G5. |
| **Critical battery fault! Powering off** | Battery has critical fault condition and the unit is about to power off to avoid damage to the battery. |
| **Battery fault** | Battery has a fault condition – unit needs service. |
| **Battery charger fault** | Battery charger has a fault condition – unit needs service. |
| **Low battery** | Battery charge level is low. |
| **Hardware fault** | Unit has a hardware fault – unit needs service. |
| **Power supply fault** | Unit power supply fault detected – unit needs service. |
| **Unit temperature limit exceeded** | Unit is too hot or too cold. |
| **Network address conflict** | Another G5 with the same address is detected on the network (most commonly a wiring error on one of the units). |
| **Communication error** | General communication error (most commonly appears in conjunction with Network Address Conflict message). |
| **Factory calibration data invalid** | Unit calibration data not valid – unit needs service. |
| **Magnetic field model database out of date** | Internal magnetic field database is out of date - software update required. |
| **Magnetometer Hardware fault** | The magnetometer has detected a fault – unit needs service. Heading data may not be available. |
| **Using external GPS data** | GPS data from another network LRU is being used. The unit's internal GPS receiver is enabled, but unable to establish a GPS fix. |
| **Not receiving RS-232 data** | The G5 is not receiving RS-232 data from the GPS navigator – system needs service. |
| **Not receiving ARINC 429 data** | The G5 is not receiving ARINC 429 data from the navigation source – system needs service. |
| **GPS receiver fault** | The G5 on-board GPS receiver has a fault. |
| **ARINC 429 interface configuration error** | The G5 ARINC 429 port is receiving information from an incorrect source – system needs service. |
| **Software version mismatch** | The G5 attitude indicator and the G5 HSI units have different software. Cross fill of baro, heading and altitude bugs is disabled. |

These messages remain while the condition persists.



GARMIN.
1200 East 151st Street
Olathe, KS 66062
P: 913-397-8200 F: 913-397-8282

November 30, 2011

Subject: STC Permission to use STC SA01933LA-D for
Garmin Model 400W / 500W Series GPS-WAAS Navigation System
(See AML)

Consistent with Order 8110.4B and AC 21-40, Garmin International grants permission to Garmin dealers, installers, and owners of the Garmin Model 400W / 500W Series GPS-WAAS Navigation System units to use STC SA01933LA-D and the data associated with it, for the sole and express purpose of installation and approval of the installation of the Garmin Model 400W / 500W Series GPS-WAAS Navigation System, and associated interfaces to other previously approved equipment.

Emmett Griffith
Engineering Manager
GARMIN AT, INC.

United States of America

Department of Transportation - Federal Aviation Administration

# Supplemental Type Certificate

*Number* SA01933LA-D

*This certificate issued to* Garmin International, Inc.
1200 East 151st Street
Olathe, KS 66062

*certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part* 23 *of the Federal Aviation Regulations.*

*Original Product - Type Certificate Number:* * See attached Approved Model List (AML) SA01933LA-D
*Make:* dated Jan.14, 2011 or later FAA-approved revision for list of
*Model:* aircraft models and applicable airworthiness regulations.

*Description of Type Design Change:* Installation of Garmin 400W/500W Series Navigation System:
Installation of 400W Series navigators are accomplished in accordance with data provided in Garmin 400W Series Master Drawing List, Drawing No.: 005-C0221-00, Rev. "B", dated October 1, 2007, or later FAA approved revision; with 400W Series Airplane Flight Manual Supplement, document No. 190-00356-03, Rev. "Original", dated November 20, 2007 or later FAA approved revision.
Installation of 500W Series navigators are accomplished in accordance with data provided in Garmin 500W Series Master Drawing List, Drawing No.: 005-C0221-01, Rev. "B", dated October 1, 2007, or later FAA approved revision; with 500W Series Airplane Flight Manual Supplement, document No. 190-00357-03, Rev. "Original", dated November 20, 2007 or later FAA approved revision.

*Limitations and Conditions:*
1) Compatibility of this design change with other previously approved modifications must be determined by the installer; installation of this change should not introduce any adverse effect on the rotorcraft.
2) If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.
3) A copy of this certificate and associated AML, plus the applicable ICA and AFMS, as called out by the applicable Master Drawing List (reference above), must be maintained as part of the permanent records for the modified aircraft.

(See Continuation Sheet on Page 3)

*This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

*Date of application:* January 31, 2006
*Date of issuance:* November 6, 2006
*Date reissued:* July 31, 2009
*Date amended:* November 20, 2007
April 1, 2013, November 20, 2014

*By direction of the Administrator*

(Signature)
Michael Warren, ODA STC Unit Administrator
ODA-240087-CE, Garmin International, Inc.
(Title)

*Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.*
*This certificate may be transferred in accordance with FAR 21.47.*

## FAA Approved Model List (AML) STC SA01933LA-D

| Aircraft Make (TCDS Holder) [common name or previous make] | Aircraft Model | Type Certificate Number | TC Certification Basis | Master Drawing List | | AML Revision Date |
|---|---|---|---|---|---|---|
| | | | | Document Number | Revision (or later FAA approved revision) | |
| **True Flight Holdings LLC** (True Flight Holdings LLC) [Tiger Aircraft LLC, American General, Grumman American] | AA-5, AA-5A, AA-5B, AG-5B | A16EA | FAR 23 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Twin Commander** (Twin Commander Aircraft Corporation) | 560F, 680, 680-E, 680F, 680F(P), 680FL, 680FL(P), 680T, 680V, 680W, 681, 685, 690, 690A, 690B, 690C, 690D, 695, 695A, 695B, 720 | 2A4 | CAR 3 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Twin Commander** (Twin Commander Aircraft Corporation) | 500, 500-A, 500-B, 500-U, 500-S, 520, 560, 560-A, 560-E | 6A1 | CAR 3 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Twin Commander** (Twin Commander Aircraft Corporation) | 700 | A12SW | FAR 23 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Univair** (Univair Aircraft Corporation) [Stinson] | 108, 108-1, 108-2, 108-3, 108-5 | A-767 | CAR 3 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Viking Air Limited** (Viking Air Limited) [de Havilland, Inc., Bombardier Inc.] | DHC-3 | A-815 | CAR 3 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Viking Air Limited** (Viking Air Limited) [de Havilland, Inc., Bombardier Inc.] | (Twin Otter) DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300 | A9EA | CAR 3 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Vulcanair S.p.A.** (Vulcanair S.p.A.) [Partenavia] | P68, P68B, P68C, P68C-TC, P68 "Observer", P68 "Observer 2", P68 TC "Observer", AP68TP 300 "Spartacus", AP68TP 600 "Viator" | A31EU | FAR 23 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **WACO Aircraft Company, The** (The WACO Aircraft Company) | YMF | ATC 542 | Aero 7A | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **WSK "PZL-MIELEC" OBR** (WSK PZL MIELEC and OBR SK MIELEC) [PZL] | PZL M20 03 | A68EU | FAR 23 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **Zenair** (Zenair Ltd.) | CH2000 | TA5CH | FAR 23 | 005-C0221-00<br>005-C0221-01 | A | 11/6/2006<br>Original |
| **END** | | | | | | |



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# 500W Series
# Instructions for Continued Airworthiness

**Document Number 190-00357-65 Rev. D**

**Garmin International, Inc.**
**1200 E. 151st Street**
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### Record of Revision

| Rev. | Date | Description of Change |
|---|---|---|
| 1 | 10-19-06 | Initial Release |
| A | 11-03-06 | Revision for STC Issuance |
| B | 07-30-09 | Add the "-D" to STC number when reissued under ODA |
| C | 02-28-13 | Revise to support software version 5.02. Clarify inspections. Add electrical bonding check. |
| D | 11-20-14 | Revise to support software version 5.20 with Flight Stream 210 |

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AIRPLANE FLIGHT MANUAL SUPPLEMENT
or
SUPPLEMENTAL AIRPLANE FLIGHT MANUAL
for the
Garmin GNS 500W, 500WT, 530W, 530AW, 530WT, or 530AWT
GPS/SBAS Navigation System
as installed in

Cessna 177A
Make and Model Airplane

Registration Number: N30553 Serial Number: 17701322

This document serves as an Airplane Flight Manual Supplement or as a Supplemental Airplane Flight Manual when the aircraft is equipped with the Garmin GNS 500W, 500WT, 530W, 530AW, 530WT, or 530AWT GPS/SBAS Navigation System. This document must be carried in the airplane at all times when the Garmin GNS unit is installed in accordance with STC SA01933LA-D. This document must be incorporated into the FAA Approved Airplane Flight Manual or provided as an FAA Approved Supplemental Airplane Flight Manual.

The information contained herein supplements the information in the FAA Approved Airplane Flight Manual. For limitations, procedures, loading and performance information not contained in this document, refer to the FAA Approved Airplane Flight Manual, markings, or placards.

FAA Approved By: Erik Frisk

Erik Frisk
ODA STC Unit Administrator
Garmin International, Inc.
ODA-240087-CE

Date: 6-MAR-2020