THE adlog™ AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

N 611RJ

AVIONICS MAINTENANCE RECORDS

THE adlog T.M. AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

AVIONICS MAINTENANCE RECORDS

(including transponder biennial checks)

Log No. A

Aircraft Registration No. N611RJ

Aircraft Manufacturer The Lancair Co.

Model LC41-550 FG

Serial No. 41044

EQUIPMENT LISTING

List all installed avionics, autopilot and flight director equipment.

	Mfg.	Model	Serial No.
1.			
2.			
3.			
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20.			

AEROTECH PUBLICATIONS INC.
www.adlog.com
PO BOX 1359 / SOUTHOLD, NY 11971-0965
(631) 765-9375
1-800-235-6444
FAX: (631) 765-9359

Page No. 1 Avionics

DATE	AIRFRAME TIME IN SERVICE	AVIONICS TIME IN SERVICE	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
11-23-04	0	0	

THE LANCAIR COMPANY

The Garmin GTX 327 Mode C transponder, S/N 83718151 was tested as required by FAR 91.413, Lancair Document SB240001 Rev B, and was found to comply with FAR Part 43 Appendix F.

2 DECEMBER 2004

Authorized Signature for The Lancair Company

Page - 1 -

Date:	Acft Tail Number:	Acft Model:	Acft S/N:	Work Order #:	Hobbs/Tach Time:
3/21/05	N611RJ	LC41-550-FG	41044	A9881	53.3

- Complied with Avidyne SB 601-00004-032 upgrading the EX 5000 MFD P/N 700-00004-104 S/N 20061424 software to 530-00162-002 REV 2.
- Complied with Avidyne SB 601-00004-036 activating the factory installed XM weather system. Tested with satisfactory results.

Signature

Work Order # A9881 Date: 3/21/05
Keyson Airways Corporation
117 Perimeter Road
Nashua, NH 0306[illegible]
FAA Certified Repair Station KNMR864S
Phone 603-598-4526 Fax 603-595-2908

Page - 1 -

Date:	Acft Tail Number:	Acft Model:	Acft S/N:	Work Order #:	Hobbs/Tach Time:
6/24/05	N611RJ	LC41-550FG	41044	A10081	111.3

- Installed and tested a RYAN TCAD system, Model No. 9900BX, IAW Lancair Service Letter SL-05-001A. All avionics systems disturbed during installation tested with no faults noted. Performed altitude reporting system tests required by FAR Part 91.413 par B IAW FAR part 43 Appendix E par C and Appendix F with no faults noted.
- Upgraded RYAN TCAD 9900BX processor software to Part No. 70-2420-5 Version 1.15 IAW RYAN service bulletin 051606.

Signature

Work Order # A10081 Date: 6/24/05
Keyson Airways Corporation
117 Perimeter Road
Nashua, NH 03063
FAA Certified Repair Station KNMR864S
Phone 603-598-4526 Fax 603-595-2908

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

Page - 1 -

Date:	Acft Tail Number:	Acft Model:	Acft S/N:	Work Order #:	Hobbs/Tach Time:
3-28-06	N611RJ	LC-41-55oFG	41044	A10736	208.5

- Removed GSN-430 PN: 011-00280-10 SN: 97123081 and sent to Garmin factory for terrain upgrade. Received unit from Garmin same PN and SN with mod 7 status complying with terrain upgrade as per service bulletin # 0532. Performed post installation ops checks in accordance with factory installation manual PN: 190-00140-02 Rev. J section 5 (5.1-5.3) with all ops checks ok.
- Complied with Rev 6 Avidyne MFD PN: 530-00180-200 SN: 20061424 upgrade in accordance with SB # 601-00004-032 Kit # 850-00013-338. All post Installation ops checks performed satisfactory.

Signature

Work Order # A10736 Date: 3-28-06
Keyson Airways Corporation
117 Perimeter Road
Nashua, NH 03063
FAA Certified Repair Station KNMR864S
Phone 603-598-4526 Fax 603-595-2908

JET AVIATION

JET AVIATION OF AMERICA, INC. 380 HANSCOM DRIVE, BEDFORD, MA 01730 USA

[redacted]

SUPPLEMENTAL LOG ENTRY

REG:N611JW **MODEL: COLUMBIA AIRCRAFT LC-41** **SN: 41044**

COMPLIED WITH THE FOLLOWING MAINTENANCE TASKS:

DESCRIPTION
REMOVED PILOT AVIDYNE PRIMARY FLIGHT DISPLAY FOR SERVICING. "THIS AIRCRAFT HAS BEEN INSPECTED AND HAS BEEN FOUND SAFE FOR THE INTENDED FLIGHT I/A/W SPECIAL FLIGHT PERMIT DATED 12/01/2006

REMOVED AND REINSTALLED / REPLACED THE FOLLOWING COMPONENTS AT THIS TIME:

P/N OFF	S/N OFF	P/N ON	S/N ON	DESCRIPTION
700-00006-100	22963354			PILOT PFD

THE AIRCRAFT/ AIRFRAME/ ENGINE/ PROPELLER IDENTIFIED ABOVE WAS REPAIRED AND INSPECTED IN ACCORDANCE WITH CURRENT REGULATIONS OF THE FEDERAL AVIATION ADMINISTRATION AND WITH RESPECT TO THE WORK SPECIFIED IN WORK ORDER NO., 17915 EXCEPT AS OTHERWISE NOTED, IS APPROVED FOR RETURN TO SERVICE ONLY FOR THE WORK PERFORMED.

SIGNED: Gerald Maney AP20922901A **DATE: 12/05/2006** **HOURS:** 310

p

Page No. 3 Avionics

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

JET AVIATION

JET AVIATION OF AMERICA, INC. 380 HANSCOM DRIVE, BEDFORD, MA 01730 USA
F.A.A. CERTIFIED REPAIR STATION No. JAVR120F

SUPPLEMENTAL LOG ENTRY

REG:N611JW **MODEL: COLUMBIA** **SN: 41044**
AIRCRAFT LC-41

COMPLIED WITH THE FOLLOWING MAINTENANCE TASKS:

DESCRIPTION
REINSTALLED PILOT AVIDYNE PRIMARY FLIGHT DISPLAY REBUILT BY MFG PT1042NE / WO RA23193 DATED 12/14/2006 INSTALLED AND GROUND OPERATIONAL TESTED NORMAL I/A/W AVIDYNE CORP ENTENDRA EXP5000PFD INSTALL MANUAL 600-00141-000, REV 3
THE STATIC PRESSURE SYSTEM HAS BEEN TESTED & INSPECTED AND FOUND TO COMPLY WITH PARAGRAPH (a),APPENDIX E AND F, OF FAR PART 43.

REMOVED AND REINSTALLED / REPLACED THE FOLLOWING COMPONENTS AT THIS TIME:

P/N OFF	S/N OFF	P/N ON	S/N ON	DESCRIPTION
700-00006-100		700-00006-100	22963354	PILOT PFD

THE AIRCRAFT/ AIRFRAME/ ENGINE/ PROPELLER IDENTIFIED ABOVE WAS REPAIRED AND INSPECTED IN ACCORDANCE WITH CURRENT REGULATIONS OF THE FEDERAL AVIATION ADMINISTRATION AND WITH RESPECT TO THE WORK SPECIFIED IN WORK ORDER NO., 17915 EXCEPT AS OTHERWISE NOTED, IS APPROVED FOR RETURN TO SERVICE ONLY FOR THE WORK PERFORMED.

SIGNED: Gerald Maney **Gerald Maney AP2092290IA** **DATE: 12/05/2006**
HOURS: 313

Installed 12/20/06

Date:	Acft Tail Number:	Acft Model:	Acft S/N:	Work Order #:	Hobbs/Tach Time:
24 Apr 07	N611RJ	LC41-550FG	41044	A11593	334.3

- Removed Ryan T-CAD processor and sent out for repair and updates pn#70-2420-5 sn#050404 (See Avidyne/Ryan wo#6392_13). Performed inspection and reinstalled Same Pn# and Sn#. Performed operational check with satisfactory results.
- Relocated XM weather antenna under glarshield slightly for better reception and signal strength. Weight and balance change is minimal.

Signature

Work Order # A11593 Date: 24 Apr 07
Keyson Airways Corporation
117 Perimeter Road
Nashua, NH 03063
FAA Certified Repair Station KNMR864S
Phone 603-598-4526 Fax 603-595-2908

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

Maine Aviation
Aircraft Maintenance, LLC.

406 Yellowbird Rd • Portland International Airport • Portland, ME 04102
(207) 780-1811 • Fax (207) 772-6900

CRS FSER011E

Date	WO#	Registration	Type/Model	SN	Hobbs	
6/11/2008	31618	N611RJ	Lancair LC41-550FG	41044	437.0	

Performed 24 month certifications of pitot/static system and the following equipment to 25,000 ft: Avidyne PFD, p/n 700-00006-100, s/n 22963354; Standby Altimeter, p/n 5934PAD-3, s/n 436306; GTX327 Transponder, p/n 011-00490-00, s/n 83718151. The altimeter system & altitude reporting equipment tests & inspections required by FAR part 91.411 paragraph (a.1) have been performed & found to comply with FAR part 43 Appendix E & F and is approved for return to service. The ATC transponder tests and inspections required by FAR part 91.413 paragraph (a) have been performed and found to comply with FAR part 43 Appendix F and is approved for return to service.

Adjusted roll servo cable tension in accordance with the AMM.

Upgraded the existing Dual Garmin GNS 430 GPS/Nav/Com Systems in accordance with STC SA01933LA, and FAA Form 337, dated June 11, 2008.

Removed the following equipment: Dual Garmin GNS 430 GPS/Nav/Com Recievers, p/n 011-00280-10, s/n 97123081 & 97122415; Garmin GA56 GPS antennas, p/n 011-00134-00, s/n's 59097032 & 59090733.

Installed the following equipment: Dual GNS 430W GPS/WAAS Receivers, p/n 011-01060-40, s/n 97123081 & 97122415 ; Dual GA35 WAAS Antennas, p/n 013-00235-00, s/n 34010 & 38260.

This alteration and the Garmin 400W Series Instructions for Continued Airworthiness, Doc. 190-00356-65, Rev. A, dated 11/03/06, referenced in the 337 are now part of this aircraft's inspection/maintenance requirements.

Removed Avidyne EX5000 PFD, p/n 700-00006-100, s/n 22963354 and reinstalled after upgrade to software p/n 530-00194-000 in accordance with SB 601-00006-081, "Release 7 PFD Re-Installation for Service".

Complied with Avidyne SB 601-00004-077, "Release 6 or later EX5000 MFD Software Upgrade ot Release 7 Software 530-00195-()" for MFD s/n 20061424.

Aircraft equipment list and weight & balance have been updated. The change to aircraft electrical load is negligible.

Performed post installation checkout and configuration in accordance with applicable Installation Manuals with no defects noted.

I certify that this aircraft was repaired and inspected in accordance with current Regulations of the FAA and is approved for return to service with respect to the work performed.

Signature — CRS FSER011E (Type and Certificate Number)

4/15/09			See combined entry in ~~Engine~~ airframe logbook referring to Autopilot repair at Penn Avionics

Maine Aviation
Aircraft Maintenance, LLC.

406 Yellowbird Rd • Portland International Airport • Portland, ME 04102
(207) 780-1811 • Fax (207) 772-6900

CRS FSER011E

Date	WO#	Registration	Type/Model	SN	Hobbs	
4/27/2009	32650	N611RJ	Lancair LC41-550FG	41044	538.7	

Complied with Avidyne SB 601-00004-080, "MFD CMax Activation Utility" for MFD s/n 20061424.

I certify that this aircraft was repaired and inspected in accordance with current Regulations of the FAA and is approved for return to service with respect to the work performed.

Signature — CRS FSER011E (Type and Certificate Number)

Page No. 5 Avimex

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

Maine Aviation
Aircraft Maintenance, LLC.

400 Fellowship Rd • Portland International Airport • Portland, ME 04102
(207) 780-1811 • Fax (207) 772-6900

CRS FSER011E

Date	WO#	Registration	Type/Model	SN	Hobbs	
6/30/2010	33850	N611RJ	Lancair LC41-550FG	41044	623.4	

Performed 24 month certifications of pitot/static system and the following equipment to 25,000 ft: Avidyne PFD, p/n 700-00006-100, s/n 22963354; Standby Altimeter, p/n 5934PAD-3, s/n 436306; GTX327 Transponder, p/n 011-00490-00, s/n 83718151. The altimeter system & altitude reporting equipment tests & inspections required by FAR part 91.411 paragraph (a.1) have been performed & found to comply with FAR part 43 Appendix E & F and is approved for return to service. The ATC transponder tests and inspections required by FAR part 91.413 paragraph (a) have been performed and found to comply with FAR part 43 Appendix F and is approved for return to service.

I certify that this aircraft was repaired and inspected in accordance with current Regulations of the FAA and is approved for return to service with respect to the work performed.

Signature

CRS FSER011E
Type and Certificate Number

PFD

Altimeter Correction Card

Altimeter: 700-00006-100 S/N: 22963354

ALT	Error	ALT	Error
-1000	0	14000	-50
0	0	16000	-60
500	0	18000	-80
1000	0	20000	-100
1500	0	22000	-120
2000	0	25000	-150
3000	0	30000	
4000	0	35000	
6000	-10	40000	
8000	-10	45000	
10000	-10	50000	
12000	-30	55000	

Barometric Pressure: 29.92 Test Date: 6/30/10

Tested by KL CRS FSER011E Form MA173

Altimeter Correction Card

Altimeter: 5934PAD-3 S/N: 436306

ALT	Error	ALT	Error
-1000	0	14000	-40
0	+10	16000	-40
500	+10	18000	-60
1000	+15	20000	-50
1500	+5	22000	-40
2000	+10	25000	-70
3000	+10	30000	
4000	0	35000	
6000	-10	40000	
8000	-10	45000	
10000	-10	50000	
12000	-30	55000	

Barometric Pressure: Test Date: 6/30/10

Tested by KL CRS FSER011E Form MA173

Maine Aviation
Aircraft Maintenance, LLC.

400 Fellowship Rd • Portland International Airport • Portland, ME 04102
(207) 780-1811 • Fax (207) 772-6900

CRS FSER011E

Date	WO#	Registration	Type/Model	SN	Hobbs	
7/26/2012	35936	N611RJ	Lancair LC41-550FG	41044	780.8	

Performed 24 month certifications of pitot/static system and the following equipment to 25,000 ft: Avidyne PFD, p/n 700-00006-100, s/n 22963354; Standby Altimeter, p/n 5934PAD-3, s/n 436306; GTX327 Transponder, p/n 011-00490-00, s/n 83718151. The altimeter system & altitude reporting equipment tests & inspections required by FAR part 91.411 paragraph (a.1) have been performed & found to comply with FAR part 43 Appendix E & F and is approved for return to service. The ATC transponder tests and inspections required by FAR part 91.413 paragraph (a) have been performed and found to comply with FAR part 43 Appendix F and is approved for return to service.

I certify that this aircraft was repaired and inspected in accordance with current Regulations of the FAA and is approved for return to service with respect to the work performed.

Signature

CRS FSER011E
Type and Certificate Number

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

Altimeter Correction Card

Altimeter: 5934PAP-3 S/N: 436306

ALT	Error	ALT	Error
-1000	+10	14000	-20
0	+15	16000	-20
500	+15	18000	-15
1000	+15	20000	0
1500	+15	22000	+5
2000	+15	25000	+10
3000	+10	30000	
4000	+5	35000	
6000	0	40000	
8000	0	45000	
10000	-10	50000	
12000	-10	55000	

Barometric Pressure: 29.92 Test Date: 7-26-12

Tested by Tom CRS FSER011E Form MA173

ADC

Altimeter Correction Card

~~Altimeter: 700-006-100~~ S/N: 22963554

ALT	Error	ALT	Error
-1000	+10	14000	-15
0	+10	16000	-25
500	+10	18000	-30
1000	+10	20000	-50
1500	+10	22000	-60
2000	+10	25000	-90
3000	+10	30000	
4000	+5	35000	
6000	+5	40000	
8000	0	45000	
10000	-10	50000	
12000	-15	55000	

Barometric Pressure: 29.92 Test Date: 7-26-12

Tested by [signature] CRS FSER011E Form MA173

C. Rudy Engholm

From: Rudy Engholm [cre23@earthlink.net]
Sent: Friday, July 06, 2007 4:40 PM
To: 'Jeff Wall'
Subject: Garmin 430 WAAS upgrade; Serial numbers.

Jeff,
The correct serial numbers for the two Garmin 430's in my Columbia 400 (N611RJ) are: **97123081** and **97122415**. This also confirms that you've schedule N611RJ for the upgrade sometime in November, 2007
Thanks.
Rudy

C. Rudy Engholm
27 Storer Street
Portland, ME 04102
Tel. 207-871-8993
Fax. 866-548-4047
Email. cre23@earthlink.net

From: Rick Santiesteban [mailto:rickjet@hotmail.com]
Sent: Monday, October 31, 2005 10:12 AM
To: cre23@earthlink.net
Subject: incorrect Serial #

Hi Mr. Engholm! Cheryle from Garmin called me and said that definately we need to get the correct SN. The one provided that was missing the digit is in fact incorrect. If you could maybe check your equip. list and get the correct one and/or if you know how to remove the 430 from the rack, you could get it that way. WE must respond before the 15th deadline to get you locked in. I also asked if they (Garmin) would have that info. They said that they would not have any way of tracking it to find out. So, let me know what you think..Thanks, Rick

---

From: *"CRE -- commercial" <cre23@earthlink.net>*
Reply-To: *"CRE -- commercial" <cre23@earthlink.net>*
To: *"Rick St. Estevan" <Avionics@KeysonAirways.com>*
CC: *<RickJet@Hotmail.com>*
Subject: *Fw: Garmin WAAS upgrade order*
Date: *Tue, 25 Oct 2005 18:10:12 -0400*

Rick,
I am afraid I lost about a week's worth of email messages from early October. Did you ever reply with a confirmation number from Garmin for my order? If you did send a message, would you mind re-sending it? Thanks.
Rudy

----- Original Message -----
From: CRE -- commercial
To: Rick St. Estevan
Cc: RickJet@Hotmail.com
Sent: Thursday, September 29, 2005 11:58 AM
Subject: Garmin WAAS upgrade order

Rick,

Thanks for taking my call this morning. I would like to order the WAAS upgrade before the Nov. 15 deadline for the two Garmin 430's in my Columbia 400 (N611RJ). The serial numbers are: 9712308 and 97122415. I understand it will be a fixed price $1500 upgrade for those who order on time, and payment will not be due until the upgrade is performed, hopefully by the third quarter of 2006. Pleas let me know the confirmation number from Garmin once you have it. Thanks.

C. Rudy Engholm
27 Storer Street
Portland, ME 04102
Tel. 207-871-8993
Cell: 207-450-4202
email: cre23@earthlink.net

1. Approving National Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/United States	**AUTHORIZED RELEASE CERTIFICATE** FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG	RMA # 9001849
4. Organization Name and Address: Avidyne Corporation, 202 West Drive, West Melbourne, FL 32904		5. Work Order/Contract/Invoice Number: RMA # 9001849

6. Item:	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1	PFD	700-00006-100	N/A	1	22963354	Rebuilt

13. Remarks:

Return to service and meets approved TSO design. This article has been tested and inspected and found to comply with appendix E of 14 CFR 43 in accordance with 14 CFR 91.411

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.:
			PT 3844 CE
17. Name (Typed or Printed):	**18. Date (m/d/y):**	**22. Name (Typed or Printed):**	**23. Date (m/d/y):**
		Kevin T. Brogan	6/4/08

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.

*Installer must cross-check eligibility with applicable technical data.

NSN: 0052-00-012-9005

1. Approving National Aviation Authority/Country:	2.	3. System Tracking Ref. No.
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	RMA 7772635
4. Organization: GARMIN International 1200 E 151st Olathe, KS 66062		5. Work Order Contract/Invoice Number: RMA 7772635

6. Item:	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1.	GNS430W,Blk,Upgd	011-01060-40	N/A	1	97123081	MODIFIED

13. REMARKS: This "Certifies that the work specified in block 12/13 was carried out in accordance with EASA Part-145 and in respect to that work the component is ready for release to service under EASA Part-145 Approval Number: EASA.145.5534" The work that was performed on this unit was done to meet the requirements of GNS400W/500W Series WAAS Upgrade Procedure, part number 005-00221-72. This unit complies with Garmin's Service Bulletins No. 0740 and 0808.
On the Garmin website "garmin.com", you will be able to download and receive more detailed information on the difference between the Classic GNS units and WAAS GNS units. A manual dedicated for the new WAAS GNS series units titled "What's New with the 400W/500W series" is available through http://www.garmin.com/support/userManual.jsp.
For more detailed instructions on the operation of the WAAS GNS 400W500W series, please review the Pilot's Guide for the appropriate units. For your convenience, you will be able to download the Pilot's Guide from the Garmin website. http://www.garmin.com/support/userManual.jsp
In addition to the manuals, you will be able to download the WAAS GNS simulator from the Garmin website as well. Please review the Trainer User Guide for detailed operation instructions on the training simulator.
To receive additional operational information, download the free WAAS Training Video from Garmin website. www.garmin.com
If you have any questions, comments, or need any technical assistance on the GNS series units, please contact Garmin product support specialist at 1-800-800-1020 or e-mail us through Garmin website, www.garmin.com.

14. Certifies the items identified above were manufactured in conformity to:	19.
☐ Approved design data and are in condition for safe operation ☐ Non-approved design data specified in block 13	☒ 14 CFR 43.9 Return to Service ☒ Other regulations 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.:
N / A	N / A		G6XR582Y
17. Name (Typed or Printed	18. Date (m/d/y)	22. Name (Typed or Printed)	23. Date (m/d/y)
N / A	N / A	Wathana Syhavong	5/20/2008

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 block 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.

GARMIN.

FAA UNIT SERVICE REPORT

RMA NUMBER	UNIT NAME	SERIAL NUMBER	UNIT NUMBER
7772635	GNS430W,Blk,Upgd	97123081	011-01060-40

SERVICE START DATE	SERVICE COMPLETION DATE	RETURNED TO SERVICE BY
5/20/2008	5/20/2008	1304

UNIT DISCREPANCY

WAAS Upgrade

REPAIR SUMMARY

This "Certifies that the work specified in block 12/13 was carried out in accordance with EASA Part-145 and in respect to that work the component is ready for release to service under EASA Part-145 Approval Number: EASA.145.5534" The work that was performed on this unit was done to meet the requirements of GNS400W/500W Series WAAS Upgrade Procedure, part number 005-00221-72. This unit complies with Garmin's Service Bulletins No. 0740 and 0808.

On the Garmin website "garmin.com", you will be able to download and receive more detailed information on the difference between the Classic GNS units and WAAS GNS units. A manual dedicated for the new WAAS GNS series units titled "What's New with the 400W/500W series" is available through http://www.garmin.com/support/userManual.jsp.

For more detailed instructions on the operation of the WAAS GNS 400W500W series, please review the Pilot's Guide for the appropriate units. For your convenience, you will be able to download the Pilot's Guide from the Garmin website. http://www.garmin.com/support/userManual.jsp

In addition to the manuals, you will be able to download the WAAS GNS simulator from the Garmin website as well. Please review the Trainer User Guide for detailed operation instructions on the training simulator.

To receive additional operational information, download the free WAAS Training Video from Garmin website. www.garmin.com

If you have any questions, comments, or need any technical assistance on the GNS series units, please contact Garmin product support specialist at 1-800-800-1020 or e-mail us through Garmin website, www.garmin.com.

FAA Approved Product

This appliance has been repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service. The details of the repairs to this appliance are on file at this repair station under the above listed RMA Number

Wathana Syhavong
FAA Certified Repairman

5/20/2008
Date

3158270
Certificate Number

FAA Repair Station Number
G6XR582Y

Warranty Information

Garmin will provide a one (1) year warranty on parts and labor supplied with your upgrade, regardless of the age of the unit at the time of upgrade. This will cover only the upgraded portion of the unit.

FRM-098 REV. H

Customer Copy

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AeroAntenna Technology, Inc.

AS9100 Certified Company
20732 Lassen Street, Chatsworth, CA 91311
Phone: (818) 993-3842 Fax: (818) 993-4525

CERTIFICATION OF CONFORMANCE

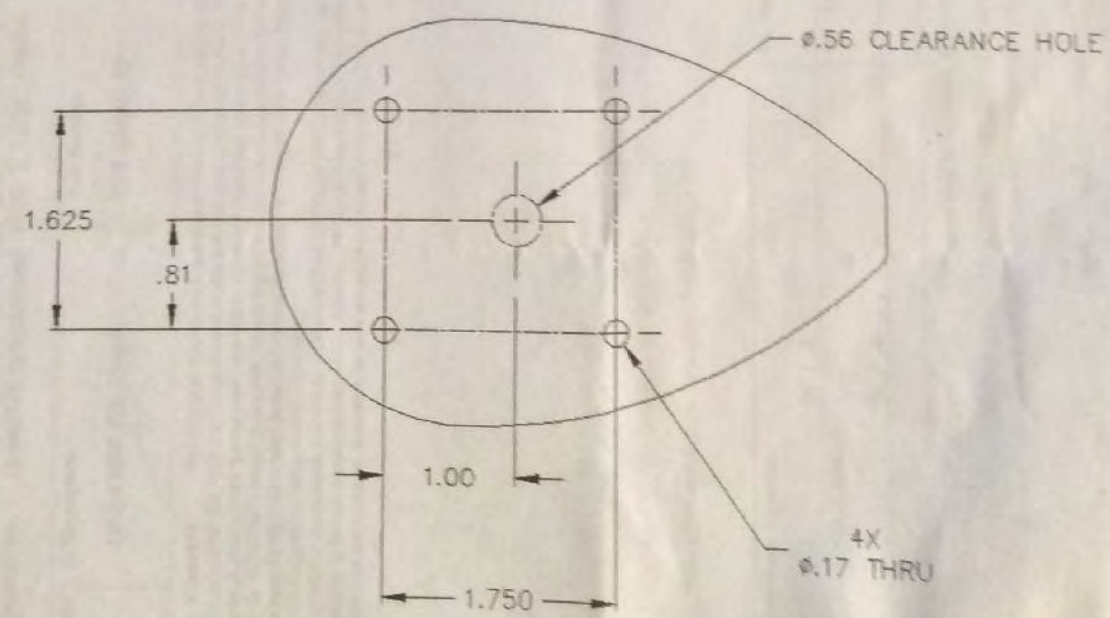
AAT Part Number:	AT575-93GW-TNCF-000-RG-27-NM
Customer PO Number:	140093
Customer Part Number:	013-00235-00
Serial Number:	34010

AeroAntenna Technology, Inc. certifies that the above mentioned antenna was manufactured in accordance with specifications and standard quality assurance practices and procedures, and meets all requirements as stated in the above purchase order as well as shipment and delivery instructions.

Quality Assurance: Benjamin Rubeni Date: 04-17-2008

NOT TO SCALE. Use an accurate measuring instrument for installation.
Suggested torque value for mounting screws 13-15 In/Lbs. Do not exceed 16 In/Lbs.

ANTENNA MOUNTING GUIDE



1. Approving National Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/United States	**AUTHORIZED RELEASE CERTIFICATE** FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG	RMA # 9001849
4. Organization Name and Address: Avidyne Corporation, 202 West Drive, West Melbourne, FL 32904		5. Work Order/Contract/Invoice Number: RMA # 9001849

6. Item:	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1	PFD	700-00006-100	N/A	1	22963354	Rebuilt

13. Remarks:

Return to service and meets approved TSO design. This article has been tested and inspected and found to comply with appendix E of 14 CFR 43 in accordance with 14 CFR 91.411

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.:
			PT 3844 CE
17. Name (Typed or Printed):	18. Date (m/d/y):	22. Name (Typed or Printed): Kevin T. Brogan	23. Date (m/d/y): 6/4/08

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.

*Installer must cross-check eligibility with applicable technical data.

NSN: 0052-00-012-9005

1. Approving National Aviation Authority/Country:	2.	3. System Tracking Ref. No.
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	RMA 7772635
4. Organization: GARMIN International 1200 E 151st Olathe, KS 66062		5. Work Order Contract/Invoice Number: RMA 7772635

6. Item:	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1.	GNS430W,Blk,Upgd	011-01060-40	N/A	1	97123081	MODIFIED

13. REMARKS: This "Certifies that the work specified in block 12/13 was carried out in accordance with EASA Part-145 and in respect to that work the component is ready for release to service under EASA Part-145 Approval Number: EASA.145.5534" The work that was performed on this unit was done to meet the requirements of GNS400W/500W Series WAAS Upgrade Procedure, part number 005-00221-72. This unit complies with Garmin's Service Bulletins No. 0740 and 0808.
On the Garmin website "garmin.com", you will be able to download and receive more detailed information on the difference between the Classic GNS units and WAAS GNS units. A manual dedicated for the new WAAS GNS series units titled "What's New with the 400W/500W series" is available through http://www.garmin.com/support/userManual.jsp.
For more detailed instructions on the operation of the WAAS GNS 400W500W series, please review the Pilot's Guide for the appropriate units. For your convenience, you will be able to download the Pilot's Guide from the Garmin website. http://www.garmin.com/support/userManual.jsp
In addition to the manuals, you will be able to download the WAAS GNS simulator from the Garmin website as well. Please review the Trainer User Guide for detailed operation instructions on the training simulator.
To receive additional operational information, download the free WAAS Training Video from Garmin website. www.garmin.com
If you have any questions, comments, or need any technical assistance on the GNS series units, please contact Garmin product support specialist at 1-800-800-1020 or e-mail us through Garmin website, www.garmin.com.

14. Certifies the items identified above were manufactured in conformity to:	19.
☐ Approved design data and are in condition for safe operation ☐ Non-approved design data specified in block 13	☒ 14 CFR 43.9 Return to Service ☒ Other regulations 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.:
N / A	N / A		G6XR582Y
17. Name (Typed or Printed	18. Date (m/d/y)	22. Name (Typed or Printed)	23. Date (m/d/y)
N / A	N / A	Wathana Syhavong	5/20/2008

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 block 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.

GARMIN.

FAA UNIT SERVICE REPORT

RMA NUMBER	UNIT NAME	SERIAL NUMBER	UNIT NUMBER
7772635	GNS430W,Blk,Upgd	97123081	011-01060-40

SERVICE START DATE	SERVICE COMPLETION DATE	RETURNED TO SERVICE BY
5/20/2008	5/20/2008	1304

UNIT DISCREPANCY

WAAS Upgrade

REPAIR SUMMARY

This "Certifies that the work specified in block 12/13 was carried out in accordance with EASA Part-145 and in respect to that work the component is ready for release to service under EASA Part-145 Approval Number: EASA.145.5534" The work that was performed on this unit was done to meet the requirements of GNS400W/500W Series WAAS Upgrade Procedure, part number 005-00221-72. This unit complies with Garmin's Service Bulletins No. 0740 and 0808.

On the Garmin website "garmin.com", you will be able to download and receive more detailed information on the difference between the Classic GNS units and WAAS GNS units. A manual dedicated for the new WAAS GNS series units titled "What's New with the 400W/500W series" is available through http://www.garmin.com/support/userManual.jsp.

For more detailed instructions on the operation of the WAAS GNS 400W500W series, please review the Pilot's Guide for the appropriate units. For your convenience, you will be able to download the Pilot's Guide from the Garmin website. http://www.garmin.com/support/userManual.jsp

In addition to the manuals, you will be able to download the WAAS GNS simulator from the Garmin website as well. Please review the Trainer User Guide for detailed operation instructions on the training simulator.

To receive additional operational information, download the free WAAS Training Video from Garmin website. www.garmin.com

If you have any questions, comments, or need any technical assistance on the GNS series units, please contact Garmin product support specialist at 1-800-800-1020 or e-mail us through Garmin website, www.garmin.com.

FAA Approved Product

This appliance has been repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service. The details of the repairs to this appliance are on file at this repair station under the above listed RMA Number.

Wathana Syhavong
FAA Certified Repairman

5/20/2008
Date

3158270
Certificate Number

FAA Repair Station Number
G6XR582Y

Warranty Information

Garmin will provide a one (1) year warranty on parts and labor supplied with your upgrade, regardless of the age of the unit at the time of upgrade. This will cover only the upgraded portion of the unit.

Customer Copy

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AeroAntenna Technology, Inc.

AS9100 Certified Company
20732 Lassen Street, Chatsworth, CA 91311
Phone: (818) 993-3842 Fax: (818) 993-4525

CERTIFICATION OF CONFORMANCE

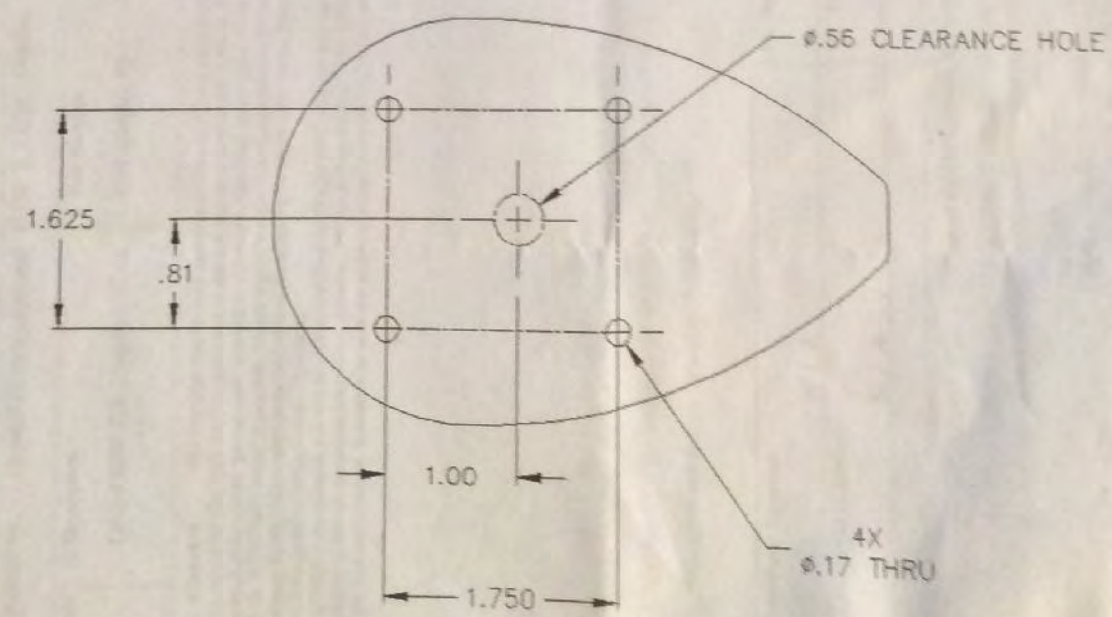
AAT Part Number:	AT575-93GW-TNCF-000-RG-27-NM
Customer PO Number:	140093
Customer Part Number:	013-00235-00
Serial Number:	34010

AeroAntenna Technology, Inc. certifies that the above mentioned antenna was manufactured in accordance with specifications and standard quality assurance practices and procedures, and meets all requirements as stated in the above purchase order as well as shipment and delivery instructions.

Quality Assurance: Benjamin Rubeni Date: 04-17-2008

NOT TO SCALE. Use an accurate measuring instrument for installation.
Suggested torque value for mounting screws 13-15 In/Lbs. Do not exceed 16 In/Lbs.

ANTENNA MOUNTING GUIDE



1. Approving National Aviation Authority/Country:	2.	3. System Tracking Ref. No.
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	RMA 7772635

4. Organization:	5. Work Order Contract/Invoice Number:
GARMIN International 1200 E 151st Olathe, KS 66062	RMA 7772635

6. Item:	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1.	GNS430W,Blk,Upgd	011-01060-40	N/A	1	97122415	MODIFIED

13. REMARKS: This "Certifies that the work specified in block 12/13 was carried out in accordance with EASA Part-145 and in respect to that work the component is ready for release to service under EASA Part-145 Approval Number: EASA.145.5534" The work that was performed on this unit was done to meet the requirements of GNS400W/500W Series WAAS Upgrade Procedure, part number 005-00221-72. This unit complies with Garmin's Service Bulletins No. 0740 and 0808.
On the Garmin website "garmin.com", you will be able to download and receive more detailed information on the difference between the Classic GNS units and WAAS GNS units. A manual dedicated for the new WAAS GNS series units titled "What's New with the 400W/500W series" is available through http://www.garmin.com/support/userManual.jsp.
For more detailed instructions on the operation of the WAAS GNS 400W500W series, please review the Pilot's Guide for the appropriate units. For your convenience, you will be able to download the Pilot's Guide from the Garmin website. http://www.garmin.com/support/userManual.jsp
In addition to the manuals, you will be able to download the WAAS GNS simulator from the Garmin website as well. Please review the Trainer User Guide for detailed operation instructions on the training simulator.
To receive additional operational information, download the free WAAS Training Video from Garmin website. www.garmin.com
If you have any questions, comments, or need any technical assistance on the GNS series units, please contact Garmin product support specialist at 1-800-800-1020 or e-mail us through Garmin website, www.garmin.com.

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 regulations 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.:
N / A	N / A	Richard Owens	G6XR582Y
17. Name (Typed or Printed)	18. Date (m/d/y)	22. Name (Typed or Printed)	23. Date (m/d/y)
N / A	N / A	Richard Owens	5/21/2008

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 block 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.

GARMIN.

FAA UNIT SERVICE REPORT

RMA NUMBER	UNIT NAME	SERIAL NUMBER	UNIT NUMBER
7772635	GNS430W Blk Upgd	97122415	011-01060-40

SERVICE START DATE	SERVICE COMPLETION DATE	RETURNED TO SERVICE BY
5/20/2008	5/21/2008	1458

UNIT DISCREPANCY

WAAS Upgrade

REPAIR SUMMARY

This "Certifies that the work specified in block 12/13 was carried out in accordance with EASA Part-145 and in respect to that work the component is ready for release to service under EASA Part-145 Approval Number: EASA.145.5534" The work that was performed on this unit was done to meet the requirements of GNS400W/500W Series WAAS Upgrade Procedure, part number 005-00221-72. This unit complies with Garmin's Service Bulletins No. 0740 and 0808.

On the Garmin website "garmin.com", you will be able to download and receive more detailed information on the difference between the Classic GNS units and WAAS GNS units. A manual dedicated for the new WAAS GNS series units titled "What's New with the 400W/500W series" is available through http://www.garmin.com/support/userManual.jsp.

For more detailed instructions on the operation of the WAAS GNS 400W500W series, please review the Pilot's Guide for the appropriate units. For your convenience, you will be able to download the Pilot's Guide from the Garmin website. http://www.garmin.com/support/userManual.jsp

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To receive additional operational information, download the free WAAS Training Video from Garmin website. www.garmin.com

If you have any questions, comments, or need any technical assistance on the GNS series units, please contact Garmin product support specialist at 1-800-800-1020 or e-mail us through Garmin website, www.garmin.com.

FAA Approved Product

This appliance has been repaired and inspected in accordance with current regulations of the Federal Aviation Administration and is approved for return to service. The details of the repairs to this appliance are on file at this repair station under the above listed RMA Number

Richard Owens	5/21/2008	3058077
FAA Certified Repairman	Date	Certificate Number

FAA Repair Station Number
G6XR582Y

Warranty Information

Garmin will provide a one (1) year warranty on parts and labor supplied with your upgrade, regardless of the age of the unit at the time of upgrade. This will cover only the upgraded portion of the unit.

Customer Copy

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AeroAntenna Technology, Inc.

AS9100 Certified Company
20732 Lassen Street, Chatsworth, CA 91311
Phone: (818) 993-3842 Fax: (818) 993-4525

CERTIFICATION OF CONFORMANCE

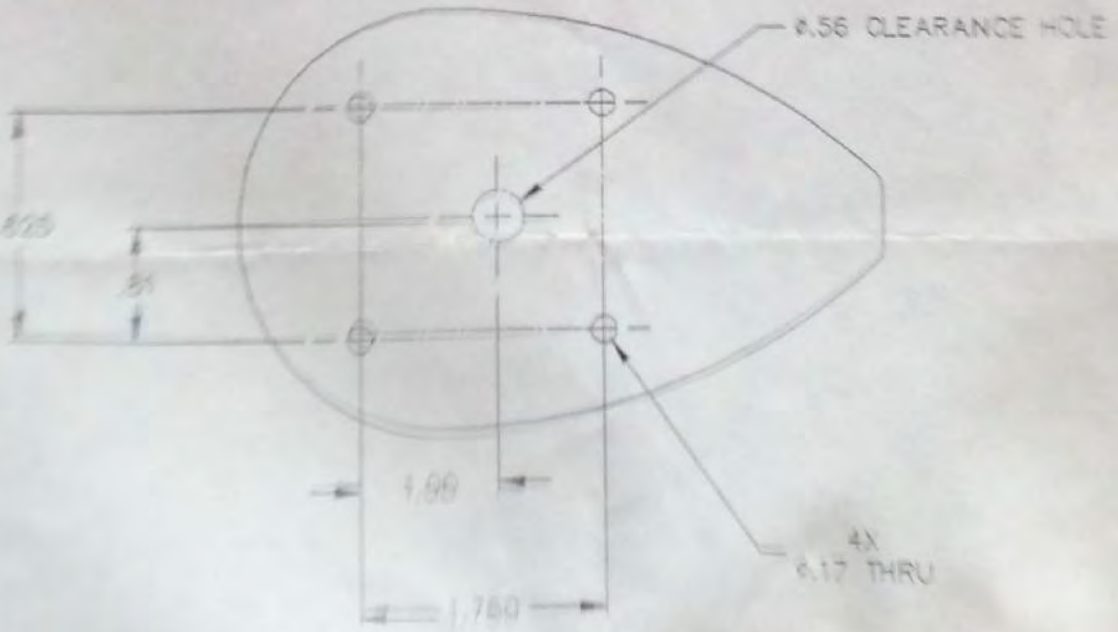
AAT Part Number:	AT575-93GW-TNCF-000-RG-27-NM
Customer PO Number:	137169
Customer Part Number:	013-00235-00
Serial Number:	38260

AeroAntenna Technology, Inc. certifies that the above mentioned antenna was manufactured in accordance with specifications and standard quality assurance practices and procedures, and meets all requirements as stated in the above purchase order as well as shipment and delivery instructions.

Quality Assurance: Benjamin Rubeni Date: April 16, 2008

NOT TO SCALE. Use an accurate measuring instrument for installation.
Suggested torque value for mounting screws 13-15 In/Lbs. Do not exceed 16 In/Lbs.

ANTENNA MOUNTING GUIDE



INVOICE

ISO 9002

EDMO Distributors, Inc.
12630 E Mirabeau Pkwy
Spokane Valley, WA 99216-1464
(509)535-8280 FAX(509)535-8266
(800)235-3300 FAX(800)828-0623
Shop on line at www.edmo.com

CUSTOMER ID: MAINAVME
ATTN:
PURCHASE ORDER: 7997
TERMS: 1% 10 DAYS
SHIPPER: Nathan COSTER
SHIP VIA: UPS/GROUND
SHIP VIA: CERTIFICATE OF COMPLIANCE

INVOICE #: 843426 WA
INVOICE DATE: 05/03/05
DUE DATE: 06/02/05
EDMO ORDER #: 688527
SALESMAN: THAI/FR

SOLD TO:
MAINE AVIATION AIRCRAFT*******
8 AL MCKAY AVE
PORTLAND ME 04102
USA

SHIP TO:
MAINE AVIATION AIRCRAFT MAINT
8 AL MCKAY AVE
PORTLAND ME 04102
PH: 2077801811

QTY. ORDERED	BACK-ORDERED	QTY. SHIPPED	PART NUMBER	PART DESCRIPTION	UNIT PRICE	TOTAL AMOUNT

********** C E R T I F I C A T E O F C O M P L I A N C E **********

It is hereby certified that all materials used in the manufacture of parts in the quantity called for on the above purchase order and invoice conform to the material and manufacture specifications as called for on said purchase order, and are in new condition.
Physical and electronic test reports are on file with us or with our suppliers for examination and indicated compliace with applicable specification requirements. (NOTE QUANTITIES BELOW REFLECT UNIT QTYS)

P/N	SERIAL NO.	UNIT QTY	P/N	SERIAL NO.	UNIT QTY
225555-6	N/A	10			

PRINTED BY: NATHAN ON: 05/03/05
SIGNED OFF BY: Nathan COSTER
TITLE: SHIPPER

INVOICE COMMENTS & P/N's:

INVOICE TOTAL
PLEASE PAY THIS AMOUNT
INVOICE DUE:

SPECIALS THIS MONTH

IF PAID BY:
A % DISCOUNT WILL BE ALLOWED IN THE AMOUNT OF:

ANY RETURNS WITHOUT PRIOR AUTHORIZATION ARE SUBJECT TO A 20% RESTOCKING FEE.
ANY DISCREPANCIES MUST BE REPORTED IMMEDIATELY AFTER RECEIPT.
ALL PAST DUE INVOICES ARE SUBJECT TO A SERVICE CHARGE OF 1 ½% PER MONTH (ANNUAL RATE OF 18%).

PURCHASER AGREES THAT SELLER RETAINS A SECURITY INTEREST IN THE GOODS SPECIFIED IN THIS DOCUMENT AS SECURITY FOR PURCHASER'S FULL PERFORMANCE OF ALL OBLIGATIONS ARISING UNDER THIS CONTRACT.
BUYER AGREES TO PAY AMOUNTS DUE PURSUANT TO THIS INVOICE IN ACCORDANCE WITH THE TERMS SET FORTH HEREON AND AGREES TO PAY REASONABLE ATTORNEY'S FEES, COURT COSTS, AND COSTS OF COLLECTION IN THE EVENT THAT THE AMOUNT DUE IS NOT SO PAID.

DISCOUNT NOT ALLOWED ON " * " ITEMS

1. Approving National Aviation Authority/Country: FAA/UNITED STATES

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

3. Form tracking number: 1288554

4. ORGANIZATION: Cessna Aircraft Company
Cessna Parts Distribution Dept. 702
5800 E Pawnee, Wichita, KS 67218

5. Work Order/Contract/Invoice Number: 624126

6. Item	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
6	CLIP	MS21256-1	172	100	N/A	New

13. Remarks:
AIRWORTHINESS APPROVAL - PARTS. THIS FORM IS NOT AN EXPORT APPROVAL.

PO# 10035

14. Certifies the items identified above were manufactured in conformity to:
[X] 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.:
	100129CE		
17. Name (Typed or Printed):	**18. Date (m/d/y):**	**22. Name (Typed or Printed):**	**23. Date (m/d/y):**
KENNETH E. WYSOCKI SR.,ODARF	JUN/15/2006		

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: 0052-00-012-8005

1288554

QTY: 100

AVIDYNE

Certificate of Conformance

FlightMax EX5000
Multifunction Display Software Upgrade Kit,
Release 7 Field Upgrade Kit for Columbia with Release 6 or Later

Quantity	1	**Serial Number(s)**	NA
Avidyne Part No.		850-00013-367	Rev 03
Avidyne Software Part No.		053-00195-200	Rev 02
Customer P.O. No.		13475	

We hereby certify that the products described above conform to all purchase order requirements and all applicable Avidyne specifications, drawings and procedures.

"The conditions and tests required for TSO approval of this article are minimum performance standards. It is the responsibility of those installing this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in aircraft. The article may be installed only if performed under 14 CFR part 43 or the applicable airworthiness requirements."

Quality Assurance Signature

6/4/2008
Date

Kevin T. Brogan
Quality Assurance Print Name

Avidyne Corporation • 55 Old Bedford Rd • Lincoln, MA 01773
781-402-7400 • www.avidyne.com

CRS[illegible]-2R818K

COBHAM

S-TEC

SRO#: R000061562

Line #: 1

Incident No: I000018706

Start Date: 03/09/2009

CUSTOMER: [c000039-0]

Penn Avionics

1209 Ward Ave.

West Chester, PA 19380

CONTACT:

Ken

Tel: 610.842.7122

Fax: 610-436-1299

email:

One S-TEC Way

Municipal Airport

Mineral Wells, TX

76067-9236 USA

T: (940) 328-1375

F: (940) 325-8808

www.s-tec.com

AIRCRAFT DATA:

Registration: N611RJ

Year:

Make: LANCAIR

Model: LC41-550FG

S/N: 41044

Voltage: 14V

AUTOPILOT: System 55/55X

Install Date:

Heading System: KCS-55

STOL System:

Hobbs/Tach - Install: 0.00 Current: 0.00

Cust. P.O. #: 16020

Return-Ship: 01 - UPS Std

SRO Type: STEC-NWR

Return Reason: Perform - Suspect component 03/04/09: 01192-33-0T-45 - will not engage pitch or roll after ready light.

Component Data:

P/N: 01192-33-07-45

S/N: 0448-7545 AJ/AE

CMM:

P/N: 87145

Rev Status: B

I hereby authorize the above repair work to be done along with necessary materials, and hereby grant you and/or your employees permission to operate above aircraft for purposes of testing, inspection or delivery at my risk. An express mechanic's lien is acknowledged on above aircraft to secure the amount of repairs thereto. You will not be held responsible for loss or damage to aircraft, or articles left in aircraft in case of fire, theft, accident, or any other cause beyond its control. Payable in Mineral Wells, Texas.

Authorized by: ______________________ Date: __________

Qty	Part#	Description
1.00	[illegible]52-02	DISPLAY ASSY, SYS 55X, LCD,
1.00	7200283-02	ASSY,TOP PCB,PROCESSOR, SYS 550/55X,
1.00	7200326	PCB ASSY,SWITCH/LIGHTING
1.00	Misc	Major Level Flat Rate Repair

REPAIR STATION ACTIONS

	Repair Time
Preliminary Inspection — Inspector: P000000497- Adam Brock No defects noted. Seals are broken.	
Hidden Damage Inspection — Inspector: P000000497- Adam Brock N/A	
Work Performed: Updated serial number from 0448-7545 AJ/AE to 0448-7545. Problem confirmed. Replaced top board and updated bezel. Upgraded Hardware and Software codes to AR/AF per board changes and Eco's 17909, 18448 and 18659. Checked unit per manf spec. Approved for return to service.	0.00 0.00
Total Repair Time	0.00
Labor Charge	

Technician:

P000000497- Adam Brock

P000000497- Adam Brock

Final Inspection:

P000000164- Kenny Payne 03/24/2009

The Aircraft or appliance identified herein was overhauled, repaired or functional tested and inspected in accordance with FAA Regulations and is approved for return to service. Pertinent details are on file at this repair station under the above repair order number.

Remarks:

TERMS: STRICTLY CASH without prior arrangements

FAA United States

AUTHORIZED RELEASE CERTIFICATE

FAA Form 8130-3 AIRWORTHINESS APPROVAL TAG

17784

4. Organization Name and Address

S-TEC Corporation, One S-TEC Way, Mineral Wells, TX 76067-9236

5. Work Order / Contract / Invoice Number

R000061562

6. Item	7. Description	8. Part Number	9. Eligibility	10. Quantity	11. Serial Number	12. Status/Work
1	PRGMR/CMPTR 14/28 55/55X	01192-33-0T-45	N/A	1	0446-7545	REPAIRED

13. Remarks

See attached SRO# R000061562 For work performed and parts used.

The work specified has been accomplished in accordance with S-TEC Component Maintenance Manual number 87145, Revision B, Dated 03/28/2006.

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. [X] 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/Certificate No.:

20. Authorized Signature:

21. Approval/Certificate No.

FF2R818K

17. Name (typed or printed):

18. Date (m/d/y):

22. Name (typed or printed):

Kenny Poynor

23. Date (m/d/y)

Mar/24/2009

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 speicified 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) (Computer Generated)

* Installer must cross check eligibility with applicable technical data.

Applicable Airworthiness Directives

ID No: 23662
Page No: 1
Date: 10/18/14

Model: LC41-550FG, S/N: 41044, Tail No: N611RJ

AD NUMBER	TYPE*	SUBJECT	Supersedes AD Number	N/A**
		ENGINE(s): TSIO-550-C		
		PROPELLER(s): HC-H3YF-1RF		
		MAGNETO(s): Slick		
93-05-06	R	IGNITION SWITCH		
2004-08-10	NM	ECI CYLINDERS		
2005-01-19	NM	GARMIN TRANSPONDER	2004-10-15	
2005-12-20	NR	ELEVATOR TORQUE TUBE		
2005-14-11	NM	SOUTHERN CALIFORNIA PROPELLER SERVICE		
2006-25-08	NM	THERMAWING (E-VADE) DEICE SYSTEM		
2007-07-06R1	R	LINEAR BEARING CONTAMINATION		
2007-16-10	N	TELEDYNE/CONTINENTAL ENGINE		
2007-26-09	NM	HARTZELL PROPELLER	2002-09-08	
2010-07-08	NM	KELLY AEROSPACE TURBOCHARGERS		
2010-11-04	NM	TELEDYNE CONTINENTAL ENGINE	2009-24-52	
2011-03-04	NR	CRACKED HINGE BRACKETS	2009-09-09	
2011-13-03	NM	HARTZELL ENG. TECHNOLOGIES TURBOCHARGERS		
2013-11-10	NM	WHEEL WALK		

*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.

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

U.S. Department
of Transportation
**Federal Aviation
Administration**

**Transport Airplane Directorate
Aircraft Certification Service**

1601 Lind Avenue S.W.
Renton, Washington 98055-4056

FEB 15 2007

In Reply
Refer To: 100S-GA-07-6

Mr. Don Gibson
Acting Certification Manager
Columbia Aircraft Manufacturing Corporation
22550 Nelson Road
Bend, OR 97701

Dear Mr. Gibson:

This letter is intended to clear up some confusion in the field regarding our earlier letters approving two Service Bulletins (SB), SB-06-002B and SB-06-002C, as alternate means of compliance to Airworthiness Directive (AD) 2005-12-20. As specified in Federal Aviation Administration letters 100S-GA-06-51 and 130S-GA-06-78, these service bulletins eliminate the need for the inspections specified in the AD.

Installation of the later part number elevator torque tube, assembly as specified in these service bulletins, also eliminates the life limit on the part. This is consistent with the limitations in the current revision of Chapter 4 of Maintenance Manual RC050001.

If you have questions regarding any of the above issues, please contact me at (425) 917-6405, or by electronic mail at jeff.morfitt@faa.gov.

Sincerely,

Jeffrey A. Morfitt
Small Airplane Program Manager
Seattle Aircraft Certification Office

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **airframe**

Company	MAINE AVIATION AIRCRAFT MAINTENANCE
Manufacturer	LANCAIR
Model	LC41-550FG
Tail #	N611RJ
Serial #	41044
Current Time	437.0
Total Time	437.0
A/C Cert. Date	December 9, 2004

***05-12-20** **06/21/05** **ELEVATOR TORQUE TUBE ASSEMBLY/**
Method of Compliance Complied with iaw SB-06-002C - AMOC 130S-GA-06-78 terminates life limit.
SB # **Date** 12/20/06 ACTT: 312.2 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

06-25-08 **12/21/06** **PLACARD, THERMAWING DEICE SYSTEM HEATER CONNECTOR/**
Method of Compliance N/A by Thermawing Deice System is not installed.
SB # SL-06-001 **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***07-07-06** **04/09/07** **AFM, AILERON AND ELEVATOR CONTROL SYSTEM LINEAR BEARINGS/**
Method of Compliance Complied with 12 month reinspect.
SB # SB-07-002 **Date** 06/05/08 ACTT: 437.0 **Next Due** Annual.
Signature **Cert. #** CRS FSER011E

Prepared by James M Waite Date 6/5/08

* Indicates possible recurring inspections

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **engine**

Company	MAINE AVIATION AIRCRAFT MAINTENANCE
Manufacturer	TELEDYNE CONTINENTAL MOTORS
Model	TSIO-550-C7
Location	Front
Serial #	914300
TSMOH	437.0
Total Time	437.0

93-10-02 **08/12/93** **CYLINDER VALVE RETAINER KEY/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB93-12 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

93-16-15 **12/14/93** **FUEL PUMP DRIVE SHAFT COUPLING/**
Method of Compliance N/A by engine model number per the bulletin.
SB # MSB95-6 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***96-12-22** **07/31/96** **OIL FILTER ADAPTER ASSEMBLY NUT/**
Method of Compliance N/A by oil filter adapter not installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

99-19-01 **09/30/99** **CRANKSHAFT CHEEK CRACKS/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB99-3C **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

00-23-21 **12/12/00** **CRANKSHAFT CONNECTING ROD JOURNAL/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB00-5D **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

04-08-10 **05/05/04** **ENGINE COMPONENTS, INC. STC'D CYLINDERS/**
Method of Compliance N/A by TCM cylinders are installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

07-16-10 **08/23/07** **TURBOCHARGER COMPRESSOR ROTOR/**
Method of Compliance N/A by turbochargers installed before March 20, 2007.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

08-08-17 **05/06/08** **TURBINE HOUSING EXHAUST FLANGE/**
Method of Compliance N/A by turbocharger part numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 6/5/08

* Indicates possible recurring inspections

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **propeller**

Company	MAINE AVIATION AIRCRAFT MAINTENANCE
Manufacturer	HARTZELL
Model	HC-H3YF-1RF/F7693DF
Location	Front
Tail #	N611RJ
Serial #	LX58B
Blade	K09891, K09885, K09884
TSMOH	437.0
Total Time	437.0

01-07-03 **06/04/01** **PROPELLERS RETURNED TO SERVICE BY BASCO/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

05-14-11 **08/17/05** **MAINTENANCE AND REPAIR BY SOUTHERN CALIFORNIA PROPELLER SERVICE/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

07-26-09 **01/30/08** **PLACARD, PROPELLER BLADE SHANK REWORK/**
Method of Compliance N/A by propeller blade serial numbers per the AD.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 6/5/09

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **appliances**

Company MAINE AVIATION AIRCRAFT MAINTENANCE
Tail # N611RJ

***74-18-05** **08/28/74** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

75-12-07 **06/06/75** **MCCAULEY**
PROPELLER GOVERNORS DCF290D, DCFS290D, DCFU290D, DCFUS290D

PROPELLER GOVERNORS/
Method of Compliance N/A by governor model number.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

80-06-05 **03/28/80** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETOS/
Method of Compliance N/A by magneto model numbers.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

80-25-07 R1 **09/24/81** **STEWART-WARNER**
OIL COOLERS

OIL COOLERS/
Method of Compliance N/A by oil cooler model number.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

81-15-03 **07/20/81** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
AIR FILTERS

STC SA693CE, SA71GL/
Method of Compliance N/A by aircraft model number.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

81-16-05 **08/06/81** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO COIL/
Method of Compliance N/A by magneto model numbers.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

***96-09-06** **06/07/96** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
FILTER ASSEMBLIES W/NEOPRENE GASKET

NEOPRENE GASKET/
Method of Compliance N/A by air filter part number.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

Prepared by _____ Date 6/5/08

Airworthiness Directive Compliance Record

***99-04-04** **02/25/99** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

02-13-04 **07/12/02** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING STOP PIN/
Method of Compliance N/A by magneto model numbers.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

02-26-03 **02/18/03** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
BA-2410

SINGLE SCREEN AIR FILTERS/
Method of Compliance N/A by aircraft model number.
SB #
Signature
Date 06/05/08 ACTT: 437.0 **Next Due** N/A
Cert. # CRS FSER011E

Prepared by _____ Date 6/5/08

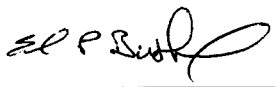
Airworthiness Directive Compliance Record

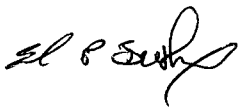
AIRCRAFT RECORDS - DO NOT DESTROY **airframe**

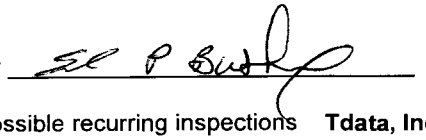
Company
Manufacturer LANCAIR
Model LC41-550FG
Tail # N611RJ
Serial # 41044
Current Time 626.8
Total Time 626.8
A/C Cert. Date December 9, 2004

***05-12-20** **06/21/05** **ELEVATOR TORQUE TUBE ASSEMBLY/**
Method of Compliance Complied with iaw SB 06-002C. AMOC 130S-GA-06-78 terminates life limit
SB # **Date** 12-20-06 @ 312.2 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

06-25-08 **12/21/06** **PLACARD, THERMAWING DEICE SYSTEM HEATER CONNECTOR/**
Method of Compliance N/A--Thermawing Deice System not installed
SB # **Date** 06-05-08 @ 437.0 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

***07-07-06 R1** **12/05/08** **AFM - AILERON AND ELEVATOR CONTROL SYSTEM LINEAR BEARINGS/**
Method of Compliance Inspected linear bearings per the AD
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** Annual
Notes
Signature  **Cert. #** CRS FSER011E

***09-09-09** **05/11/09** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Installed MK400-27-01 Hinge Kit as terminating action
SB # SB09-27-01 R1 **Date** 04-22-10 @ 613.1 ACTT **Next Due** N/A
Notes
Signature  **Cert. #** CRS FSER011E

Prepared by  Date 05-02-10

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **engine**

Company
Manufacturer TELEDYNE CONTINENTAL MOTORS
Model TSIO-550-C7
Location Front
Serial # 914300
TSMOH
Total Time 626.8

93-10-02 **08/12/93** **CYLINDER VALVE RETAINER KEY/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB93-12 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

93-16-15 **12/14/93** **FUEL PUMP DRIVE SHAFT COUPLING/**
Method of Compliance N/A by engine model number per the bulletin.
SB # MSB95-6 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

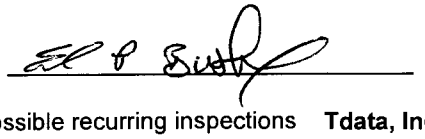
***96-12-22** **07/31/96** **OIL FILTER ADAPTER ASSEMBLY NUT/**
Method of Compliance N/A by oil filter adapter not installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

99-19-01 **09/30/99** **CRANKSHAFT CHEEK CRACKS/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB99-3C **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

00-23-21 **12/12/00** **CRANKSHAFT CONNECTING ROD JOURNAL/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB00-5D **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

04-08-10 **05/05/04** **ENGINE COMPONENTS, INC. STC'D CYLINDERS/**
Method of Compliance N/A by TCM cylinders are installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

07-16-10 **08/23/07** **TURBOCHARGER COMPRESSOR ROTOR/**
Method of Compliance N/A by turbochargers installed before March 20, 2007.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

Prepared by  Date 08-02-10

Airworthiness Directive Compliance Record

08-08-17 **05/06/08** **TURBINE HOUSING EXHAUST FLANGE/**

Method of Compliance N/A by turbocharger part numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

10-11-04 **06/16/10** **HYDRAULIC VALVE LIFTERS/**

Method of Compliance N/A by manufacture date and no lifters replaced
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Notes
Signature Ed P Bush **Cert. #** CRS FSER011E

Prepared by Ed P Bush Date 08-02-10

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **propeller**

Company
Manufacturer HARTZELL
Model HC-H3YF-1RF/F7693DF
Location Front
Tail # N611RJ
Serial # LX58B
Blade K09891, K09885, K09884
TSMOH
Total Time 626.8

01-07-03 **06/04/01** **PROPELLERS RETURNED TO SERVICE BY BASCO/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

05-14-11 **08/17/05** **MAINTENANCE AND REPAIR BY SOUTHERN CALIFORNIA PROPELLER SERVICE/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

07-26-09 **01/30/08** **PLACARD, PROPELLER BLADE SHANK REWORK/**
Method of Compliance N/A by propeller blade serial numbers per the AD.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

***08-13-28** **07/17/08** **PROPELLER HUB LUBRICATION HOLES/**
Method of Compliance N/A to engine installation
SB # **Date** 06-30-09 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 08-02-10

Airworthiness Directive Compliance Record

Company
Tail # N611RJ

***74-18-05** **08/28/74** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

75-12-07 **06/06/75** **MCCAULEY**
PROPELLER GOVERNORS DCF290D, DCFS290D, DCFU290D, DCFUS290D

PROPELLER GOVERNORS/
Method of Compliance N/A by governor model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

80-06-05 **03/28/80** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETOS/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

80-25-07 R1 **09/24/81** **STEWART-WARNER**
OIL COOLERS

OIL COOLERS/
Method of Compliance N/A by oil cooler model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

81-15-03 **07/20/81** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
AIR FILTERS

STC SA693CE, SA71GL/
Method of Compliance N/A by aircraft model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

81-16-05 **08/06/81** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO COIL/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

Prepared by Ed P Bull Date 08-02-10

Airworthiness Directive Compliance Record

***96-09-06** **06/07/96** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
FILTER ASSEMBLIES W/NEOPRENE GASKET

NEOPRENE GASKET/
Method of Compliance N/A by air filter part number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

***99-04-04** **02/25/99** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

02-13-04 **07/12/02** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING STOP PIN/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

02-26-03 **02/18/03** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
BA-2410

SINGLE SCREEN AIR FILTERS/
Method of Compliance N/A to aircraft model
SB # **Date** 06-05-08 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

09-21-10 R1 **02/04/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER STRENGTH CHARACTERISTICS/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Notes
Signature Ed P Bush **Cert. #** CRS FSER011E

10-01-03 **01/20/10** **FIRE FIGHTING ENTERPRISES LIMITED**
PORTABLE HALON 1211 FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 (BCF) GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Notes
Signature Ed P Bush **Cert. #** CRS FSER011E

10-04-16 **03/08/10** **SICLI**
H1-10 AIR HALON 1211 PORTABLE FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 BCF GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Notes
Signature Ed P Bush **Cert. #** CRS FSER011E

Prepared by Ed P Bush Date 08-02-10

* Indicates possible recurring inspections

Airworthiness Directive Compliance Record

10-07-08 **04/19/10** **KELLY AEROSPACE POWER SYSTEMS**
REBUILT 400 AND 600 SERIES TURBOCHARGERS

EARLY TURBINE WHEEL FAILURE/
Method of Compliance N/A to turbocharger serial numbers installed
SB # **Date** 08-02-10 **Next Due** N/A
Notes
Signature EL P Bush **Cert. #** CRS FSER011E

10-11-05 **07/06/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER HEAT TREATMENT/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Notes
Signature EL P Bush **Cert. #** CRS FSER011E

Prepared by EL P Bush Date 08-02-10

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **airframe**

Company
Manufacturer LANCAIR
Model LC41-550FG
Tail # N611RJ
Serial # 41044
Current Time 572.4
Total Time 572.4
A/C Cert. Date December 9, 2004

***05-12-20** **06/21/05** **ELEVATOR TORQUE TUBE ASSEMBLY/**
Method of Compliance Complied with iaw SB-06-002C - AMOC 130S-GA-06-78 terminates life limit.
SB # **Date** 12/20/06 ACTT: 312.2 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

06-25-08 **12/21/06** **PLACARD, THERMAWING DEICE SYSTEM HEATER CONNECTOR/**
Method of Compliance N/A by Thermawing Deice System is not installed.
SB # SL-06-001 **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

***07-07-06** **04/09/07** **AFM, AILERON AND ELEVATOR CONTROL SYSTEM LINEAR BEARINGS/**
Method of Compliance Complied with 12 month reinspect.
SB # SB-07-002 **Date** 06/05/08 ACTT: 437.0 **Next Due** Annual.
Signature CM **Cert. #** CRS FSER011E

***07-07-06 R1** **12/05/08** **AFM - AILERON AND ELEVATOR CONTROL SYSTEM LINEAR BEARINGS/**
Method of Compliance Complied with 12 Month inspection
SB # SB-07-018 **Date** 572.4 7/8/09 **Next Due** 12 months, date 7/10
Signature CM **Cert. #** CRS FSER011E

***09-09-09** **05/11/09** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Removed rudder and visual inspection with 10X glass no cracks at this time
SB # **Date** 572.4 7/8/09 **Next Due** 597.4, 10/8/09
Signature CM **Cert. #** CRS FSER011E

Prepared by _____ Date 1.9.9

* Indicates possible recurring inspections **Tdata, Inc (Tdata.com)** N611RJ **Page 1 of 1**

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **engine**

Company	
Manufacturer	TELEDYNE CONTINENTAL MOTORS
Model	TSIO-550-C7
Location	Front
Serial #	914300
TSMOH	572.4
Total Time	572.4

93-10-02 **08/12/93** **CYLINDER VALVE RETAINER KEY/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB93-12 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

93-16-15 **12/14/93** **FUEL PUMP DRIVE SHAFT COUPLING/**
Method of Compliance N/A by engine model number per the bulletin.
SB # MSB95-6 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***96-12-22** **07/31/96** **OIL FILTER ADAPTER ASSEMBLY NUT/**
Method of Compliance N/A by oil filter adapter not installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

99-19-01 **09/30/99** **CRANKSHAFT CHEEK CRACKS/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB99-3C **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

00-23-21 **12/12/00** **CRANKSHAFT CONNECTING ROD JOURNAL/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB00-5D **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

04-08-10 **05/05/04** **ENGINE COMPONENTS, INC. STC'D CYLINDERS/**
Method of Compliance N/A by TCM cylinders are installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

07-16-10 **08/23/07** **TURBOCHARGER COMPRESSOR ROTOR/**
Method of Compliance N/A by turbochargers installed before March 20, 2007.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 7-9-09

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **appliances**

Company
Tail # N611RJ

***74-18-05** **08/28/74** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

75-12-07 **06/06/75** **MCCAULEY**
PROPELLER GOVERNORS DCF290D, DCFS290D, DCFU290D, DCFUS290D

PROPELLER GOVERNORS/
Method of Compliance N/A by governor model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

80-06-05 **03/28/80** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETOS/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

80-25-07 R1 **09/24/81** **STEWART-WARNER**
OIL COOLERS

OIL COOLERS/
Method of Compliance N/A by oil cooler model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

81-15-03 **07/20/81** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
AIR FILTERS

STC SA693CE, SA71GL/
Method of Compliance N/A by date code per Cessna.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

81-16-05 **08/06/81** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO COIL/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature CM **Cert. #** CRS FSER011E

Prepared by _____ Date 7.9.09

Airworthiness Directive Compliance Record

***96-09-06** **06/07/96** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
FILTER ASSEMBLIES W/NEOPRENE GASKET

NEOPRENE GASKET/
Method of Compliance N/A by air filter part number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature AM **Cert. #** CRS FSER011E

***99-04-04** **02/25/99** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature AM **Cert. #** CRS FSER011E

02-13-04 **07/12/02** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING STOP PIN/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature AM **Cert. #** CRS FSER011E

02-26-03 **02/18/03** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
BA-2410

SINGLE SCREEN AIR FILTERS/
Method of Compliance N/A by aircraft model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature AM **Cert. #** CRS FSER011E

Prepared by _____ Date 7.9.09

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **airframe**

Company
Manufacturer LANCAIR
Model LC41-550FG
Tail # N611RJ
Serial # 41044
Current Time 713.3
Total Time 713.3
A/C Cert. Date December 9, 2004

***05-12-20** **06/21/05** **ELEVATOR TORQUE TUBE ASSEMBLY/**
Method of Compliance Complied with iaw SB 06-002C. AMOC 130S-GA-06-78 terminates life limit
SB # **Date** 12-20-06 @ 312.2 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

06-25-08 **12/21/06** **PLACARD, THERMAWING DEICE SYSTEM HEATER CONNECTOR/**
Method of Compliance N/A--Thermawing Deice System not installed
SB # **Date** 06-05-08 @ 437.0 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***07-07-06 R1** **12/05/08** **AFM - AILERON AND ELEVATOR CONTROL SYSTEM LINEAR BEARINGS/**
Method of Compliance Inspected linear bearings per the AD
SB # **Date** 9/2/11 @ 713.3 **Next Due** Annual
Signature **Cert. #** CRS FSER011E

***09-09-09** **05/11/09** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Installed MK400-27-01 Hinge Kit as terminating action
SB # SB09-27-01 R1 **Date** 04-22-10 @ 613.1 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-26-53 **12/10/10** **SUPERSEDED BY AD 2010-26-54/**
Method of Compliance
SB # **Date** **Next Due** N/A
Signature **Cert. #**

10-26-54 **01/10/11** **WING SKIN TO WING SPAR INTEGRITY/**
Method of Compliance N/A by aircraft S/N
SB # **Date** 9/2/11 @ 713.3 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***11-03-04** **03/14/11** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Complied with AD SB 09-27-01R2 C/W on 4/22/10
SB # **Date** 9/2/11 @ 713.3 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/2/11

* Indicates possible recurring inspections **Tdata, Inc (Tdata.com)** N611RJ **Page 1 of 1**

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **engine**

Company
Manufacturer TELEDYNE CONTINENTAL MOTORS
Model TSIO-550-C7
Location Front
Serial # 914300
TSMOH
Total Time 713.3

93-10-02 **08/12/93** **CYLINDER VALVE RETAINER KEY/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB93-12 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

93-16-15 **12/14/93** **FUEL PUMP DRIVE SHAFT COUPLING/**
Method of Compliance N/A by engine model number per the bulletin.
SB # MSB95-6 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***96-12-22** **07/31/96** **OIL FILTER ADAPTER ASSEMBLY NUT/**
Method of Compliance N/A by oil filter adapter not installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

99-19-01 **09/30/99** **CRANKSHAFT CHEEK CRACKS/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB99-3C **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

00-23-21 **12/12/00** **CRANKSHAFT CONNECTING ROD JOURNAL/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB00-5D **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

04-08-10 **05/05/04** **ENGINE COMPONENTS, INC. STC'D CYLINDERS/**
Method of Compliance N/A by TCM cylinders are installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

07-16-10 **08/23/07** **TURBOCHARGER COMPRESSOR ROTOR/**
Method of Compliance N/A by turbochargers installed before March 20, 2007.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

08-08-17 **05/06/08** **TURBINE HOUSING EXHAUST FLANGE/**
Method of Compliance N/A by turbocharger part numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/2/11

Airworthiness Directive Compliance Record

10-11-04 **06/16/10** **HYDRAULIC VALVE LIFTERS/**
Method of Compliance N/A by manufacture date and no lifters replaced
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/2/11

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **propeller**

Company	
Manufacturer	HARTZELL
Model	HC-H3YF-1RF/F7693DF
Location	Front
Tail #	N611RJ
Serial #	LX58B
Blade	K09891, K09885, K09884
TSMOH	
Total Time	713.3

01-07-03 **06/04/01** **PROPELLERS RETURNED TO SERVICE BY BASCO/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

05-14-11 **08/17/05** **MAINTENANCE AND REPAIR BY SOUTHERN CALIFORNIA PROPELLER SERVICE/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

07-26-09 **01/30/08** **PLACARD, PROPELLER BLADE SHANK REWORK/**
Method of Compliance N/A by propeller blade serial numbers per the AD.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***08-13-28** **07/17/08** **PROPELLER HUB LUBRICATION HOLES/**
Method of Compliance N/A to engine installation
SB # **Date** 06-30-09 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/2/11

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **appliances**

Company
Tail # N611RJ

***74-18-05** **08/28/74** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

75-12-07 **06/06/75** **MCCAULEY**
PROPELLER GOVERNORS DCF290D, DCFS290D, DCFU290D, DCFUS290D

PROPELLER GOVERNORS/
Method of Compliance N/A by governor model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

80-06-05 **03/28/80** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETOS/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

80-25-07 R1 **09/24/81** **STEWART-WARNER**
OIL COOLERS

OIL COOLERS/
Method of Compliance N/A by oil cooler model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

81-15-03 **07/20/81** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
AIR FILTERS

STC SA693CE, SA71GL/
Method of Compliance N/A by aircraft model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

81-16-05 **08/06/81** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO COIL/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by FE Date 9/2/11

Airworthiness Directive Compliance Record

***96-09-06** **06/07/96** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
FILTER ASSEMBLIES W/NEOPRENE GASKET

NEOPRENE GASKET/
Method of Compliance N/A by air filter part number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***99-04-04** **02/25/99** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

02-13-04 **07/12/02** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING STOP PIN/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

02-26-03 **02/18/03** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
BA-2410

SINGLE SCREEN AIR FILTERS/
Method of Compliance N/A to aircraft model
SB # **Date** 06-05-08 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

09-21-10 R1 **02/04/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER STRENGTH CHARACTERISTICS/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-01-03 **01/20/10** **FIRE FIGHTING ENTERPRISES LIMITED**
PORTABLE HALON 1211 FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 (BCF) GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-04-16 **03/08/10** **SICLI**
H1-10 AIR HALON 1211 PORTABLE FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 BCF GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/2/11

Airworthiness Directive Compliance Record

10-07-08 **04/19/10** **KELLY AEROSPACE POWER SYSTEMS**
REBUILT 400 AND 600 SERIES TURBOCHARGERS

EARLY TURBINE WHEEL FAILURE/
Method of Compliance N/A to turbocharger serial numbers installed
SB # **Date** 08-02-10 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-11-05 **07/06/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER HEAT TREATMENT/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/2/11

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **airframe**

Company
Manufacturer LANCAIR
Model LC41-550FG
Tail # N611RJ
Serial # 41044
Current Time 782.6
Total Time 782.6
A/C Cert. Date December 9, 2004

***05-12-20** **06/21/05** **ELEVATOR TORQUE TUBE ASSEMBLY/**
Method of Compliance Complied with iaw SB 06-002C. AMOC 130S-GA-06-78 terminates life limit
SB # **Date** 12-20-06 @ 312.2 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

06-25-08 **12/21/06** **PLACARD, THERMAWING DEICE SYSTEM HEATER CONNECTOR/**
Method of Compliance N/A--Thermawing Deice System not installed
SB # **Date** 06-05-08 @ 437.0 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***07-07-06 R1** **12/05/08** **AFM - AILERON AND ELEVATOR CONTROL SYSTEM LINEAR BEARINGS/**
Method of Compliance Inspected linear bearings per the AD
SB # **Date** 9/6/12 @ 782.6 **Next Due** Annual
Signature **Cert. #** CRS FSER011E

***09-09-09** **05/11/09** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Installed MK400-27-01 Hinge Kit as terminating action
SB # SB09-27-01 R1 **Date** 04-22-10 @ 613.1 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-26-53 **12/10/10** **SUPERSEDED BY AD 2010-26-54/**
Method of Compliance
SB # **Date** **Next Due** N/A
Signature **Cert. #**

10-26-54 **01/10/11** **WING SKIN TO WING SPAR INTEGRITY/**
Method of Compliance N/A by aircraft S/N
SB # **Date** 9/2/11 @ 713.3 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***11-03-04** **03/14/11** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Complied with AD SB 09-27-01R2 C/W on 4/22/10
SB # **Date** 9/2/11 @ 713.3 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/6/12

* Indicates possible recurring inspections **Tdata, Inc (Tdata.com)** N611RJ **Page 1 of 1**

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **engine**

Company
Manufacturer TELEDYNE CONTINENTAL MOTORS
Model TSIO-550-C7
Location Front
Serial # 914300
TSMOH
Total Time 782.6

93-10-02 **08/12/93** **CYLINDER VALVE RETAINER KEY/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB93-12 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

93-16-15 **12/14/93** **FUEL PUMP DRIVE SHAFT COUPLING/**
Method of Compliance N/A by engine model number per the bulletin.
SB # MSB95-6 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***96-12-22** **07/31/96** **OIL FILTER ADAPTER ASSEMBLY NUT/**
Method of Compliance N/A by oil filter adapter not installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

99-19-01 **09/30/99** **CRANKSHAFT CHEEK CRACKS/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB99-3C **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

00-23-21 **12/12/00** **CRANKSHAFT CONNECTING ROD JOURNAL/**
Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB00-5D **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

04-08-10 **05/05/04** **ENGINE COMPONENTS, INC. STC'D CYLINDERS/**
Method of Compliance N/A by TCM cylinders are installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

07-16-10 **08/23/07** **TURBOCHARGER COMPRESSOR ROTOR/**
Method of Compliance N/A by turbochargers installed before March 20, 2007.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

08-08-17 **05/06/08** **TURBINE HOUSING EXHAUST FLANGE/**
Method of Compliance N/A by turbocharger part numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/6/12

Airworthiness Directive Compliance Record

10-11-04 **06/16/10** **HYDRAULIC VALVE LIFTERS/**
Method of Compliance N/A by manufacture date and no lifters replaced
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

12-03-06 **02/24/12** **AFS FUEL SERVO DIAPHRAGM/**
Method of Compliance Inspected found N/A by servo P/N
SB # **Date** 9/6/12 @ 782.6 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

12-10-13 **06/08/12** **STARTER ADAPTER SHAFT GEAR/**
Method of Compliance inspected found N/A by engine model.
SB # **Date** 9/6/12 @ 782.6 **Next Due** N/A
Signature **Cert. #** FSER011E

Prepared by _____ Date 9/6/12

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **propeller**

Company	
Manufacturer	HARTZELL
Model	HC-H3YF-1RF/F7693DF
Location	Front
Tail #	N611RJ
Serial #	LX58B
Blade	K09891, K09885, K09884
TSMOH	
Total Time	782.6

01-07-03 **06/04/01** **PROPELLERS RETURNED TO SERVICE BY BASCO/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

05-14-11 **08/17/05** **MAINTENANCE AND REPAIR BY SOUTHERN CALIFORNIA PROPELLER SERVICE/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

07-26-09 **01/30/08** **PLACARD, PROPELLER BLADE SHANK REWORK/**
Method of Compliance N/A by propeller blade serial numbers per the AD.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***08-13-28** **07/17/08** **PROPELLER HUB LUBRICATION HOLES/**
Method of Compliance N/A to engine installation
SB # **Date** 06-30-09 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/6/12

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **appliances**

Company
Tail # N611RJ

***74-18-05** **08/28/74** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

75-12-07 **06/06/75** **MCCAULEY**
PROPELLER GOVERNORS DCF290D, DCFS290D, DCFU290D, DCFUS290D

PROPELLER GOVERNORS/
Method of Compliance N/A by governor model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

80-06-05 **03/28/80** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETOS/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

80-25-07 R1 **09/24/81** **STEWART-WARNER**
OIL COOLERS

OIL COOLERS/
Method of Compliance N/A by oil cooler model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

81-15-03 **07/20/81** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
AIR FILTERS

STC SA693CE, SA71GL/
Method of Compliance N/A by aircraft model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

81-16-05 **08/06/81** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO COIL/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/6/12

Airworthiness Directive Compliance Record

***96-09-06** **06/07/96** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
FILTER ASSEMBLIES W/NEOPRENE GASKET

NEOPRENE GASKET/
Method of Compliance N/A by air filter part number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

***99-04-04** **02/25/99** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

02-13-04 **07/12/02** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING STOP PIN/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

02-26-03 **02/18/03** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
BA-2410

SINGLE SCREEN AIR FILTERS/
Method of Compliance N/A to aircraft model
SB # **Date** 06-05-08 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

09-21-10 R1 **02/04/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER STRENGTH CHARACTERISTICS/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-01-03 **01/20/10** **FIRE FIGHTING ENTERPRISES LIMITED**
PORTABLE HALON 1211 FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 (BCF) GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-04-16 **03/08/10** **SICLI**
H1-10 AIR HALON 1211 PORTABLE FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 BCF GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 9/6/12

Airworthiness Directive Compliance Record

10-07-08 **04/19/10** **KELLY AEROSPACE POWER SYSTEMS**
REBUILT 400 AND 600 SERIES TURBOCHARGERS

EARLY TURBINE WHEEL FAILURE/
Method of Compliance N/A to turbocharger serial numbers installed
SB # **Date** 08-02-10 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

10-11-05 **07/06/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER HEAT TREATMENT/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Signature **Cert. #** CRS FSER011E

Prepared by FC Date 9/6/12

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **airframe**

Company
Manufacturer LANCAIR
Model LC41-550FG
Tail # N611RJ
Serial # 41044
Current Time 849.3
Total Time 849.3
A/C Cert. Date December 9, 2004

***05-12-20** **06/21/05** **ELEVATOR TORQUE TUBE ASSEMBLY/**
Method of Compliance Complied with iaw SB 06-002C. AMOC 130S-GA-06-78 terminates life limit
SB # **Date** 12-20-06 @ 312.2 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

06-25-08 **12/21/06** **PLACARD, THERMAWING DEICE SYSTEM HEATER CONNECTOR/**
Method of Compliance N/A--Thermawing Deice System not installed
SB # **Date** 06-05-08 @ 437.0 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

***07-07-06 R1** **12/05/08** **AFM - AILERON AND ELEVATOR CONTROL SYSTEM LINEAR BEARINGS/**
Method of Compliance Inspected linear bearings per the AD
SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** Annual
Notes
Signature E L P Burk **Cert. #** CRS FSER011E

***09-09-09** **05/11/09** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Installed MK400-27-01 Hinge Kit as terminating action
SB # SB09-27-01 R1 **Date** 04-22-10 @ 613.1 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

10-26-53 **12/10/10** **SUPERSEDED BY AD 2010-26-54/**
Method of Compliance
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #**

10-26-54 **01/10/11** **WING SKIN TO WING SPAR INTEGRITY/**
Method of Compliance N/A by aircraft S/N
SB # **Date** 9/2/11 @ 713.3 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

***11-03-04** **03/14/11** **RUDDER HINGES AND HINGE BRACKETS/**
Method of Compliance Complied with AD SB 09-27-01R2 C/W on 4/22/10
SB # **Date** 9/2/11 @ 713.3 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E
Prepared by E L P Burk Date 12-09-13

Airworthiness Directive Compliance Record

13-11-10 **07/26/13** **POH/AFM - MAXIMUM BRAKING LIMITATIONS AND PROCEDURES/**

Method of Compliance Inserted a copy of the AD in the aircraft AFM

SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** N/A

Notes

Signature E L P Burk **Cert. #** CRS FSER011E

Prepared by E L P Burk Date 12-09-13

Airworthiness Directive Compliance Record

Company
Manufacturer TELEDYNE CONTINENTAL MOTORS
Model TSIO-550-C7
Location Front
Serial # 914300
TSMOH
Total Time 849.3

93-10-02 08/12/93 CYLINDER VALVE RETAINER KEY/

Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB93-12 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

93-16-15 12/14/93 FUEL PUMP DRIVE SHAFT COUPLING/

Method of Compliance N/A by engine model number per the bulletin.
SB # MSB95-6 **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

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*96-12-22 07/31/96 OIL FILTER ADAPTER ASSEMBLY NUT/

Method of Compliance N/A by oil filter adapter not installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

99-19-01 09/30/99 CRANKSHAFT CHEEK CRACKS/

Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB99-3C **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

00-23-21 12/12/00 CRANKSHAFT CONNECTING ROD JOURNAL/

Method of Compliance N/A by engine serial number per the bulletin.
SB # MSB00-5D **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

04-08-10 05/05/04 ENGINE COMPONENTS, INC. STC'D CYLINDERS/

Method of Compliance N/A by TCM cylinders are installed.
SB # **Date** 11/17/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

07-16-10 08/23/07 TURBOCHARGER COMPRESSOR ROTOR/

Method of Compliance N/A by turbochargers installed before March 20, 2007.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

Prepared by Ed C Buth Date 12-09-13

Airworthiness Directive Compliance Record

08-08-17 05/06/08 TURBINE HOUSING EXHAUST FLANGE/

Method of Compliance N/A by turbocharger part numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

10-11-04 06/16/10 HYDRAULIC VALVE LIFTERS/

Method of Compliance N/A by manufacture date and no lifters replaced
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

12-03-06 02/24/12 AFS FUEL SERVO DIAPHRAGM/

Method of Compliance N/A to fuel control part number
SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** N/A
Notes
Signature Ed P Burk **Cert. #** CRS FSER011E

12-10-13 06/08/12 STARTER ADAPTER SHAFT GEAR/

Method of Compliance No action required for adapters over 100 hours TIS
SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** N/A
Notes
Signature Ed P Burk **Cert. #** CRS FSER011E

Prepared by Ed P Burk Date 12-09-13

* Indicates possible recurring inspections

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **propeller**

Company
Manufacturer HARTZELL
Model HC-H3YF-1RF/F7693DF
Location Front
Tail # N611RJ
Serial # LX58B
Blade K09891, K09885, K09884
TSMOH
Total Time 849.3

01-07-03 **06/04/01 PROPELLERS RETURNED TO SERVICE BY BASCO/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

05-14-11 **08/17/05 MAINTENANCE AND REPAIR BY SOUTHERN CALIFORNIA PROPELLER SERVICE/**
Method of Compliance N/A by propeller manufacture date.
SB # **Date** 09/28/04 TSN: 0.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

07-26-09 **01/30/08 PLACARD, PROPELLER BLADE SHANK REWORK/**
Method of Compliance N/A by propeller blade serial numbers per the AD.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

***08-13-28** **07/17/08 PROPELLER HUB LUBRICATION HOLES/**
Method of Compliance N/A to engine installation
SB # **Date** 06-30-09 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 12-09-13

Airworthiness Directive Compliance Record

Company
Tail # N611RJ

***74-18-05** **08/28/74** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

75-12-07 **06/06/75** **MCCAULEY**
PROPELLER GOVERNORS DCF290D, DCFS290D, DCFU290D, DCFUS290D

PROPELLER GOVERNORS/
Method of Compliance N/A by governor model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

80-06-05 **03/28/80** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETOS/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

80-25-07 R1 **09/24/81** **STEWART-WARNER**
OIL COOLERS

OIL COOLERS/
Method of Compliance N/A by oil cooler model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

81-15-03 **07/20/81** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
AIR FILTERS

STC SA693CE, SA71GL/
Method of Compliance N/A by aircraft model number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

81-16-05 **08/06/81** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO COIL/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

Prepared by _____ Date 12-09-13

Airworthiness Directive Compliance Record

***96-09-06** **06/07/96** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
FILTER ASSEMBLIES W/NEOPRENE GASKET

NEOPRENE GASKET/
Method of Compliance N/A by air filter part number.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

***99-04-04** **02/25/99** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

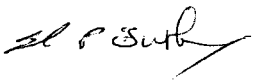
02-13-04 **07/12/02** **SLICK ELECTRO, INC.**
MAGNETOS

MAGNETO IMPULSE COUPLING STOP PIN/
Method of Compliance N/A by magneto model numbers.
SB # **Date** 06/05/08 ACTT: 437.0 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

02-26-03 **02/18/03** **BRACKETT AIRCRAFT SPECIALTIES, INC.**
BA-2410

SINGLE SCREEN AIR FILTERS/
Method of Compliance N/A to aircraft model
SB # **Date** 06-05-08 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

08-08-17 **05/06/08** **KELLY AEROSPACE POWER SYSTEMS**
441977-0023 AND -0025 HOUSINGS

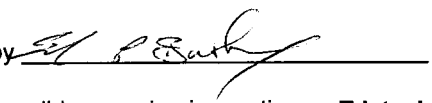
TURBINE HOUSING EXHAUST FLANGE/
Method of Compliance N/A to turbocharger part numbers
SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** N/A
Notes
Signature  **Cert. #** CRS FSER011E

09-21-10 R1 **02/04/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER STRENGTH CHARACTERISTICS/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Notes
Signature  **Cert. #** CRS FSER011E

10-01-03 **01/20/10** **FIRE FIGHTING ENTERPRISES LIMITED**
PORTABLE HALON 1211 FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 (BCF) GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

Prepared by  Date 12-09-13

Airworthiness Directive Compliance Record

10-04-16 **03/08/10** **SICLI**
H1-10 AIR HALON 1211 PORTABLE FIRE EXTINGUISHERS

CONTAMINATED HALON 1211 BCF GAS/
Method of Compliance N/A to fire bottle manufacturer installed
SB # **Date** 08-02-10 @ 626.8 ACTT **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

10-07-08 **04/19/10** **KELLY AEROSPACE POWER SYSTEMS**
REBUILT 400 AND 600 SERIES TURBOCHARGERS

EARLY TURBINE WHEEL FAILURE/
Method of Compliance N/A to turbocharger serial numbers installed
SB # **Date** 08-02-10 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

10-11-05 **07/06/10** **AVOX SYSTEMS**
TYPE 3HT CYLINDERS

OXYGEN CYLINDER HEAT TREATMENT/
Method of Compliance N/A to cylinder part number
SB # **Date** 08-02-10 **Next Due** N/A
Notes
Signature **Cert. #** CRS FSER011E

11-13-03 **07/13/11** **HARTZELL ENGINE TECHNOLOGIES**
HET T, TA, TE AND TH SERIES

MACHINING DEBRIS IN TURBOCHARGER CAVITIES/
Method of Compliance N/A to turbocharger part numbers
SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** N/A
Notes
Signature E P Sushy **Cert. #** CRS FSER011E

12-10-52 **06/26/12** **HARTZELL ENGINE TECHNOLOGIES**
HET P/N 406610 SERIES

CENTER HOUSING OIL PASSAGE/
Method of Compliance N/A to turbocharger part numbers
SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** N/A
Notes
Signature E P Sushy **Cert. #** CRS FSER011E

13-21-02 **11/13/13** **HARTZELL ENGINE TECHNOLOGIES**
HET TA0411 SERIES

TURBINE WHEEL HEAD AND SHAFT WELDED JOINT/
Method of Compliance N/A to turbocharger part numbers
SB # **Date** 12-09-13 @ 849.3 Hobbs **Next Due** N/A
Notes
Signature E P Sushy **Cert. #** CRS FSER011E

Prepared by E P Sushy Date 12-09-13

adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

Aircraft Inspection Status

Aircraft Registration No. N611RJ

Make & Model LC41-550FG

Serial No. 41044

TYPE OF INSPECTION	DUE AT			COMPLIED WITH		
	HOURS	CYCLES	DATE	HOURS	CYCLES	DATE
Annual			12-09-05			
ELT			5-01-06			
Pitot static			11-23-06			
Transponder			11-23-06			
SB-05-004 (Elevator Torque Tube)						5-6-05
SB-05-005A						6-23-05
SB04-003A (fuel Selector)				131.9	—	7-13-05
SB06-001 (magneto)				208.5		3-24-06
SB06-004 (Mixture lever)				208.5		3-24-06

611RS
AIRCRAFT REGISTRATION NO.

LC41-550FG
AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote™

2010-11-4 N/M
AD NUMBER

Teledyne Continental 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
8/2/10	626.8	626.8	N/A by date	IA FSEROTIE

Amendment 39-16309. Docket No. FAA-2009- 1156; Directorate Identifier 2009-NE-38-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective June 16, 2010.

Affected ADs

(b) This AD supersedes AD **2009-24-52**.

Applicability

(c) This AD applies to all Teledyne Continental Motors (TCM) **240**, **346**, **360**, **470**, **520**, and **550** series and Rolls-Royce Motors, Ltd. **(R-RM) IO-240-A** reciprocating engines with hydraulic lifters, part numbers (P/Ns) 657913, 657915, or 657916, installed. These engines are installed on, but not limited to, general aviation airplanes.

Unsafe Condition

(d) This AD results from TCM reporting another occurrence of rapid wear on the face of hydraulic lifters, P/Ns 657913, 657915, and 657916, and from the need to expand the applicability of this AD to include the **TCM 346** series engines and the **R-RM IO-240-A** reciprocating engines. We are issuing this AD to prevent excessive hydraulic lifter wear, which can result in loss of engine power and loss of control of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed before further flight after the effective date of this AD, unless the actions have already been done.

Excluded Engines

(f) If your engine was manufactured or rebuilt before June 19, 2009, and you have not had any hydraulic lifters replaced after June 19, 2009, no action is required. NO ACTION READ

Determining P/N of Lifters

(g) If your engine was manufactured or rebuilt on or after June 19, 2009, or if any of your hydraulic lifters were replaced on or after June 19, 2009, and you can't determine the P/N of your hydraulic lifters from the engine records:

(1) Use the list of engine serial numbers in Section A of TCM Mandatory Service Bulletin (MSB) No. MSB09-8A, dated December 4, 2009.

(2) Inspect the hydraulic lifters in each cylinder for P/Ns 657913, 657915, and 657916. Use TCM MSB No. MSB09-8A, dated December 4, 2009, Section I. Action Required, paragraphs 1. through 3. to determine the P/N of the lifters.

Replacing the Lifters

(h) If your engine has any affected hydraulic lifters, replace the hydraulic lifters using TCM MSB No. MSB09-8A, dated December 4, 2009, Step 2, paragraphs 2.a.1) through 2.b.4).

Installation Prohibition

(i) After the effective date of this AD, do not install any hydraulic lifters, P/Ns 657913, 657915, or 657916, into any TCM 240, 346, 360, 470, 520, or 550 series or R-RM IO-240-A reciprocating engine.

Alternative Methods of Compliance

(j) The Manager, Atlanta 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.

Special Flight Permits

(k) We will not approve any special flight permits.

Related Information

(l) Contact Anthony Holton, Aerospace Engineer, Atlanta Certification Office, FAA, Small Airplane Directorate, 1701 Columbia Avenue, College Park, GA 30337; e-mail: anthony.holton@faa.gov; telephone (404) 474-5567; fax (404) 474-5606, for more information about this AD.

Material Incorporated by Reference

(m) You must use Teledyne Continental Motors Mandatory Service Bulletin No. MSB09-8A, dated December 4, 2009, to perform the actions 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 Teledyne Continental Motors, Inc., P.O. Box 90, Mobile, AL 36601; telephone (251) 438-3411, or go to: http://tcmlink.com/ servicebulletins.cfm. You may review copies at the FAA, New England Region, 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/cfr/ibr- locations.html.

Issued in Burlington, Massachusetts, on May 12, 2010.

Peter A. White, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

61112J
AIRCRAFT REGISTRATION NO.

LG41550FG
AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2010-7-8 N/M
AD NUMBER

Kelly Aerospace Turbochargers

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

COMPLIANCE DATE	TOTAL TIME AT COMPLIANCE	TACH OR RECORDING METER TIME AT COMPLIANCE	METHOD OF COMPLIANCE	AUTHORIZED SIGNATURE & NUMBER
8/2/10	626.8	626.8	N/A by s/n	FSEROIE

Amendment 39-16253. Docket No. FAA-2009- 1259; Directorate Identifier 2009-NE-41-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective April 19, 2010.

Affected ADs

(b) None.

Applicability

(c) This AD applies to certain serial numbers (S/Ns) of Kelly Aerospace Energy Systems, LLC (KAES) rebuilt turbochargers listed by part number (P/N) in the following Table 1 of this AD. The affected S/Ns are listed in Table III of Kelly Aerospace Energy Systems, LLC Service Bulletin (SB) No. 039 A, dated February 10, 2010.

Table 1--Part Numbers of Rebuilt Turbochargers Affected

406610-9005	406610-9015	406610-9018	406610-9019	406610-9020	406610-9021
406610-9025	406610-9026	406610-9028	406610-9029	406610-9030	406610-9032
407810-9001	406990-9004	408610-9001	409170-9001	409680-9011	465680-9001
465680-9004	465680-9005	465930-9002	465930-9003	465292-9002	465292-9004
465398-9002	407540-9003	466881-9001	466642-9001	466642-9002	466642-9005
466304-9003	600572-9000*	600573-9000*	600574-9001*	600575-9001*	600575-9002*
600576-9000*	600700-9001*	600803-9001*	600803-9002*	N/A	N/A

* P/Ns with an asterisk may have a CF prefix.

These rebuilt turbochargers are installed on, but not limited to, the engines and aircraft listed in Table IV of Kelly Aerospace Energy Systems, LLC SB No. 039 A, dated February 10, 2010.

Unsafe Condition

(d) This AD results from three reports of infant mortality turbine wheel failure in rebuilt turbochargers, since June of 2007. We are issuing this AD to prevent separation or seizure of the turbocharger turbine, which could result in full or partial engine power loss, loss of engine oil, and smoke in the airplane cabin.

Compliance

(e) You are responsible for having the actions required by this AD performed within 10 hours time-in-service after the effective date of this AD, unless the actions have already been done.

Turbocharger Removal From Service

(f) Remove from service the rebuilt turbochargers listed by P/N in paragraph (c) of this AD that have a S/N listed in Table III of Kelly Aerospace Energy Systems, LLC SB No. 039 A, dated February 10, 2010.

Installation Eligibility of Removed Turbochargers

(g) Removed turbochargers listed in Table III of Kelly Aerospace Energy Systems, LLC SB No. 039 A, dated February 10, 2010, are eligible for installation once they are overhauled by an FAA- approved repair station. That overhaul must include replacing the turbine wheels listed by P/N in Table II of Kelly Aerospace Energy Systems, LLC SB No. 039 A, dated February 10, 2010, replacing the turbine wheel mating bushings, and marking the attached Return To Service Tag with this AD number, which is AD 2010-07-08.

Installation Prohibition

(h) After the effective date of this AD, do not install any of the turbochargers listed in Table III of Kelly Aerospace Energy Systems, LLC SB No. 039 A, dated February 10, 2010, unless the turbocharger is overhauled as specified in paragraph (g) of this AD.

Alternative Methods of Compliance

(i) The Manager, Atlanta 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.

Special Flight Permits

(j) Under 14 CFR 39.23, we are limiting the special flight permits for this AD by the following conditions:

(1) Use of minimum crew.

(2) Flight made during daytime, using visual flight rule conditions.

(3) Maximum flight altitude of 12,000 feet mean-sea-level, based upon terrain.

Related Information

(k) Contact Gary Wechsler, Aerospace Engineer, Propulsion, Atlanta Aircraft Certification Office, 1701 Columbia Avenue, College Park, GA 30337; telephone (404) 474-5575; fax (404) 474-5606, for more information about this AD.

Material Incorporated by Reference

(l) You must use Kelly Aerospace Energy Systems, LLC Service Bulletin No. 039 A, dated February 10, 2010, to determine which turbocharger(s) are affected 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 Kelly Aerospace Energy Systems, LLC, 2900 Selma Highway, Montgomery, Alabama 36108, telephone (334) 386-5400, fax (334) 386- 5450, or go to: http://www.kellyaerospace.com, for a copy of this service information. You may review copies at the FAA, New England Region, 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/cfr/ibr- locations.html.

Issued in Burlington, Massachusetts, on March 23, 2010.

Robert J. Ganley, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

N611RJ
AIRCRAFT REGISTRATION NO.

41044
AIRCRAFT SERIAL NO.

LC41 550FG
TYPE AIRCRAFT

adNote

2007-16-10 N
AD NUMBER

Teledyne/Continental 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 Date	

Amendment 39-15149. Docket No. FAA-2007-28863; Directorate Identifier 2007-NE-33-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective August 23, 2007.

Affected ADs

(b) None.

Applicability

(c) This AD applies to:

(1) Teledyne Continental Motors (TCM) models TSIO-520-BE, TSIO- 550-A, TSIO-550-B, TSIO-550-C, TSIO-550-E, and TSIO-550-G reciprocating engines with a Kelly Aerospace Power Systems turbocharger, TCM part number (P/N) 646677, with certain serial numbers (SNs), installed on or after March 20, 2007. These engines are installed on, but not limited to, Adam Aircraft A500, Columbia Aircraft Manufacturing LC41-550FG, Mooney Airplane Company M20TN (Acclaim), and Piper Aircraft Incorporated PA-46-310P (Malibu) airplanes.

(2) TCM IO-550-N reciprocating engines modified to Engine Technologies Incorporated supplemental type certificate (STC) SE10589SC to install turbocharger, P/N 466304-0003, with certain SNs, installed on or after March 20, 2007. These engines are installed on, but not limited to, Cirrus Design Corporation Aircraft Model SR22 modified to Engine Technologies Incorporated STC SA10588SC.

Unsafe Condition

(d) This AD results from four incidents of the turbine rotor separating from the shaft of the turbocharger. We are issuing this AD to prevent the turbine rotor from separating from the shaft of the turbocharger due to a machining defect in the turbocharger compressor. This condition could result in full engine power loss, loss of engine lubricant, or smoke in the airplane cabin.

Compliance

(e) You are responsible for having the actions required by this AD performed before further flight unless the actions have already been done.

(f) If your engine has a turbocharger that was installed before March 20, 2007, no further action is required.

Engines Modified to Engine Technologies Incorporated STC SE10589SC

(g) Before further flight, for engines modified to Engine Technologies Incorporated STC SE10589SC on or after March 20, 2007, with a turbocharger that has a SN listed in Kelly Aerospace Service Bulletin (SB) No. 026, Revision B, dated July 27, 2007, replace the turbocharger.

TCM Engines with Turbocharger TCM P/N 646677

(h) Before further flight, for engines with a Kelly Aerospace Power Systems turbocharger, TCM P/N 646677 installed on or after March 20, 2007, with a turbocharger SN listed in Kelly Aerospace SB No. 027, dated July 25, 2007, replace the turbocharger.

Alternative Methods of Compliance

(i) The Manager, Atlanta 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.

Special Flight Permits

(j) We are limiting the special flight permits for this AD by allowing a special flight permit only after visually inspecting the turbocharger using the procedures specified in the Visual Inspection sections of Kelly Aerospace Power Systems SB No. 026, Revision B, dated July 27, 2007, and SB No. 027, dated July 25, 2007.

Related Information

(k) Teledyne Continental Aircraft Engine Mandatory Service Bulletin (MSB) MSB07-4, dated July 30, 2007, contains additional information on replacing turbochargers on TCM engines and Cirrus Service Advisory SA 07-14 R1, dated July 24, 2007, contains additional information on replacing turbochargers on Cirrus Design Corporation Aircraft Model SR22 modified to Engine Technologies Incorporated STC SA10588SC.

(l) Contact Kevin Brane, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450, Atlanta, GA 30349; e-mail: kevin.brane@faa.gov; telephone (770) 703-6063; fax (770) 703-6097, for more information about this AD.

Material Incorporated by Reference

(m) You must use Kelly Aerospace Power Systems Service Bulletins No. 026, Revision B, dated July 27, 2007, and No. 027, dated July 25, 2007, to determine if you have an affected turbocharger installed. 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 Kelly Aerospace Power Systems, 2900 Selma Highway, Montgomery, AL 36108; telephone (334) 386-5400; fax (334) 386-5450; http://www.kellyaerospace.com, for a copy of this service information. You may review copies at the FAA, New England Region, 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/cfr/ibr-locations.html .

Issued in Burlington, Massachusetts, on August 1, 2007.

Peter A. White, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote

2005-12-20 N/R

AD NUMBER

Elevator Torque Tube

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

The Lancair Company: Amendment 39-14136; Docket No. FAA- 2005-21357; Directorate Identifier 2005-CE-29-AD.

When Does This AD Become Effective?

(a) This AD becomes effective on June 21, 2005.

Are Any Other ADs Affected by This Action?

(b) None.

What Airplanes Are Affected by This AD?

(c) This AD affects Model LC41-550FG airplanes, serial numbers 41001 through 41082, that are certificated in any category.

What Is the Unsafe Condition Presented in This AD?

(d) This AD results from cracks found in the weld area of the elevator torque tube assembly. We are issuing this AD to detect and correct cracks in the elevator torque tube assembly, which could result in failure of the elevator torque tube assembly and subsequent loss of control of the airplane.

What Must I Do To Address This Problem?

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

Note 1: The Lancair Company Certified Aircraft Mandatory Service Bulletin SB-05-005A, Model 400, dated May 20, 2005, allows the pilot to perform the visual inspection of the elevator torque tube assembly. The Federal Aviation Regulations (14 CFR 43.3) only allow the pilot to perform preventive maintenance as described in 14 CFR part 43, App. A, paragraph (c). These visual inspections are not considered preventive maintenance under 14 CFR part 43, App. A, paragraph (c). Therefore, an appropriately-rated mechanic must perform all actions of this AD.

(Over)

Actions	Compliance	Procedures
(1) Visually inspect the area of weld joining the torque tube to the elevator end rib for cracks.	Before further flight after June 21, 2005 (the effective date of this AD), and before each flight until the action required in paragraph (e)(2) of this AD is done until a crack is found, whichever occurs first. It is acceptable to do the dye penetrant inspection and modification required in paragraph (e)(2) of this AD before further flight and eliminate the need for the visual inspection(s).	Follow Part 1 of The Lancair Company Certified Aircraft Mandatory Service Bulletin SB–05–005A, Model 400, dated May 20, 2005.
(2) Do a dye penetrant inspection of the area of weld joining the torque tube to the elevator end rib for cracks and modify the elevator torque tube assembly by installing a steel doubler.	Within 10 hours TIS after June 21, 2005 (the effective date of this AD). Doing the dye penetrant inspection and modification terminates the repetitive visual inspection required in paragraph (e)(1) of this AD. This modified elevator torque tube assembly has a safe limit of 300 hours TIS or 18 months after modification, whichever occurs first, and you must replace it at that interval.	Follow Part 2 of The Lancair Company Certified Aircraft Mandatory Service Bulletin SB–05–005A, Model 400, dated May 20, 2005, and Revision B to Chapter 4 of Maintenance Manual RC050001, dated May 25, 2005.
(3) Replace the elevator torque tube assembly with a new assembly that incorporates a steel doubler in the area of weld joining the torque tube to the elevator end rib.	Any time a crack is found during any inspection required in paragraphs (e)(1) and (e)(2) of this AD. You may do the replacement sooner if desired, in which case, you may discontinue the inspections in paragraphs (e)(1) and (e)(2) of this AD. The new replacement assembly has a safe life limit of 300 hours TIS or 18 months after replacement, whichever occurs first, and you must replace it at that interval.	Follow Part 2 of The Lancair Company Certified Aircraft Mandatory Service Bulletin SB–05–005A, Model 400, dated May 20, 2005, and Revision B to Chapter 4 of Maintenance Manual RC050001, dated May 25, 2005.

Note 2: The compliance times in this AD take precedence over the compliance times in the service information.

May I Request an Alternative Method of Compliance?

(f) 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, Seattle Aircraft Certification Office, FAA. For information on any already approved alternative methods of compliance, contact Mr. Jeffrey Morfitt, Program Manager, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue, SW., Renton, Washington 98055-4065; telephone: (425) 917-6405; facsimile: (425) 917-6590.

Does This AD Incorporate Any Material by Reference?

(g) You must do the actions required by this AD following the instructions in The Lancair Company Certified Aircraft Mandatory Service Bulletin SB-05-005A, Model 400, dated May 20, 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 The Lancair Company 22550 Nelson Road, Bend Oregon 97701; telephone: (541) 330-4191; e-mail: *product_support@lancair.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-05-21357; Directorate Identifier 2005-CE-29-AD.

Issued in Kansas City, Missouri, on June 10, 2005

Kim Smith, Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

CORRECTION: *There is a typo in AD 2005-12-20, paragraph (c) of today's, June 20, 2005, Federal Register (FR), page 35371, third column. The correct affected model should read "LC41-550FG". We will issue a correction to the FR. We have corrected this copy.*

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO

TYPE AIRCRAFT

adNote™

2004-8-10 N/M
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

Amendment 39-13579. Docket No. 2004-NE-07-AD.

Effective Date

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

Affected Ads

(b) None.

Applicability

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

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

Airplane manufacturer and model	Engine model
AERFER/AERMECCHI AM. 3	GTSIO-520-C
AERO COMMANDER:	
200D	IO-520-A
500A COLEMILL CONVERSION	IO-520-E
685	GTSIO-520-K
AISA: F20, PEGASO	IO-520-K
AMBROSIN MF-151	IO-520-F
AVIONES PIHAQ	IO-520-D
BEAGLE (U.K.): B206S	GTSIO-520-C
BEECHCRAFT BARON:	
C55	IO-520-CB, -C
D55	IO-520-CB, -C
E55	IO-520-CB, -C
58	IO-520-CB
58P	TSIO-520-LB
58P	TSIO-520-L
58P	TSIO-520-WB
58TC	TSIO-520-LB
58TC	TSIO-520-L
58TC	TSIO-520-WB
BEECHCRAFT BONANZA:	
A36	IO-550-B
E33A	IO-520-BA
E33A	IO-520-BB
E33B	IO-520-B
F33	IO-520-BB
F33A	IO-520-B
F33A	IO-520-BA
F33A	IO-520-BB
S35	IO-520-B
ST35	TSIO-520-D
V35	IO-520-BB
V35A	IO-520-B
V35A-TC	TSIO-520-D
V35B	IO-520-B
V35B	IO-520-BA
V35B	IO-520-BB
A36	IO-520-B
A36	IO-520-BA
A36	IO-520-BB
A36-TC	TSIO-520-UB
BEECHCRAFT DEBONAIR: C33A	IO-520-B
VIKING 300	IO-520-A IO-520-D IO-520-K
BONNAIRE 185	IO-520-D
BONNAIRE 188 CONVERSION	IO-520-D
BURNS BA42	IO-520-D
CESSNA:	
SUPER SKYLANE A, B, C, D, E	IO-520-A
TURBO SUPER SKYLANE	TSIO-520-C
SKYWAGON A185 E, F	IO-520-D
SKYWAGON A185FII	IO-520-D
AG SPRAYER 188-300	IO-520-D
A188-230	IO-520-D
AG TRUCK (A 188B) -300	IO-520-D
AG HUSKEY (A 188C) -310	TSIO-520-T
AG WAGON (A 188B)	IO-520-D
SUPER SKYWAGON U206, A	IO-520-A
U206B, C, D, E, F	IO-520-F
TURBO SKYWAGON TU206 A	IO-520-C
TU206B, C, D, E, F	TSIO-520-C
STATIONAIR U206	IO-520-F
TU206	TIOS-520-C
U206FII-300	IO-520-F
U206G-300	IO-520-F
U206GII-300	IO-520-L
TU206G-310	TSIO-520-M
SUPER SKYLANE P206A	IO-520-A
P206B, C, D, E	IO-520-A
TURBO P 206 A, B, C, D, E	TSIO-520-C
SKYWAGON 207	IO-520-F
TURBO 207	TSIO-520-G
STATIONAIR 207A, 207AII	IO-520-F
STATIONAIR 8, 811	IO-520-F
T-STATIONAIR 811	TSIO-520-M
210 CENTURION D, E, F, G, H.	IO-520-A
210 CENTURION J	IO-520-J
210 CENTURION K, L, M, N, R	IO-520-L
210 CENTURION TURBO	TSIO-520-C
210 CENTURION TURBO	TSIO-520-H
210 CENTURION TURBO K, L	TSIO-520-H
TURBO 210 J, K, L	TSIO-520-H
TURBO 210 MII, NII	TSIO-520-R
TURBO 210R	TSIO-520-R
PRESSURIZED CENTURION P210N	TSIO-520-P
PRESSURIZED CENTURION P210NII	TSIO-520-AF
PRESSURIZED CENTURION P210R	TSIO-520-CE
T303 CRUSADER	TSIO-520-AE
T303 CRUSADER	LTSIO-520-AE
310R	IO-520-MB
310R	IO-520-M
TURBO 310 P, Q	TSIO-520-B
TURBO 310 R	TSIO-520-BB
TURBO 310 R	TSIO-520-B
EXECUTIVE SKYNIGHT D, E, F	TSIO-520-B
335	TSIO-520-EB
340	TSIO-520-K
340A	TSIO-520-NB, -N
401 A, 401 B	TSIO-520-E
402 A, 402 B	TSIO-520-E
402C	TSIO-520-VB
404 TITAN	GTSIO-520-M
411, 411A	GTSIO-520-C
414	TSIO-520-J
414, 414 A	TSIO-520-NB, -N
421A	GTSIO-520-D
421B	GTSIO-520-H
421C	GTSIO-520-L
421C	GTSIO-520-N
JANOX JAVILON	IO-520-B
NAVION:	
RANGEMASTER MODEL H	IO-520-B
RANGEMASTER MODEL H	IO-520-BA
PIPER: MALIBU	TSIO-520-BE
PRINAIR:	IO-520-E
DE HAVILLAND HERON	IO-520-C
WINDECKER EAGLE	

(Over)☛

Unsafe Condition

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

Compliance

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

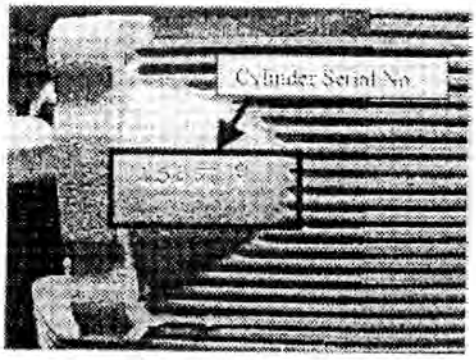


Figure 1. ⇑

Identifying Suspect Cylinders

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

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

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

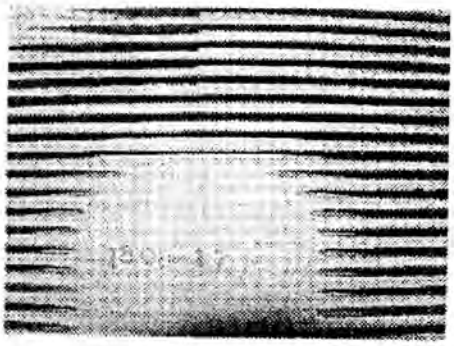


Figure 2. ⇑

(ii) If the SN is 1043 or lower, or if it is 7709 or higher, no further action is required.

(2) If the cylinder SN is 1044 through 7708, do the following:

(i) Remove the rocker box cover from the cylinder.

(ii) Look at the left-front cylinder casting.

(iii) If the casting has AEC65385, and an "O" under the ECi logo, the cylinder is P/N AEC631397. See Figure 3.

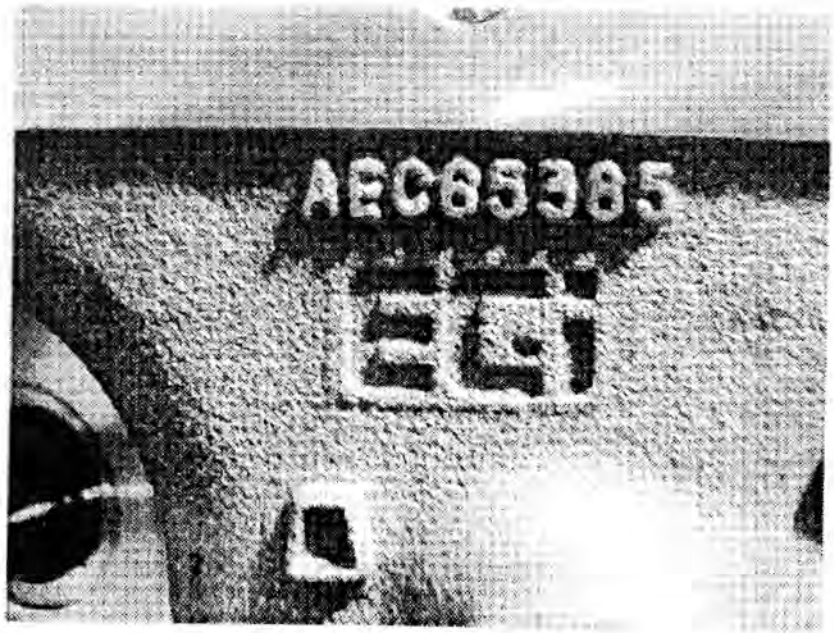


Figure 3. ⇑

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

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

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

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

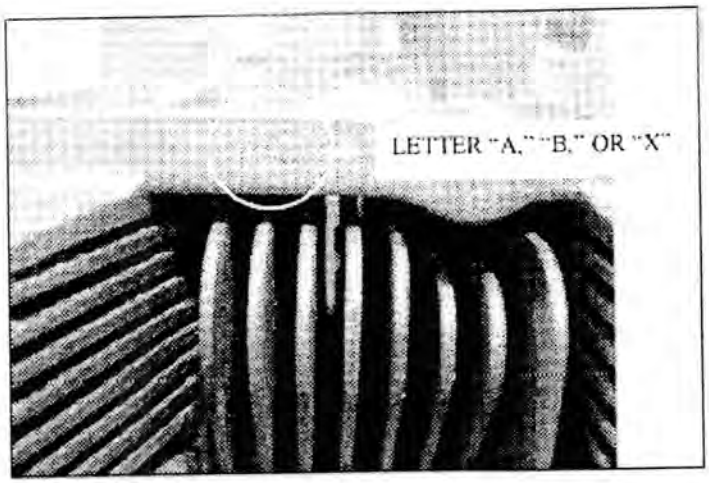


Figure 4. ⇑

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

Alternative Methods of Compliance

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

Material Incorporated by Reference

(h) None.

Related Information

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

Issued in Burlington, Massachusetts, on April 9, 2004. Francis A. Favara, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

Applicable Airworthiness Directives

ID No: 23662
Page No: 1
Date: 10/20/09

Model: LC41-550FG, S/N: 41044, Tail No: N611RJ

AD NUMBER	TYPE*	SUBJECT	Supersedes AD Number	N/A**
		ENGINE(s): TSIO-550-C		
		PROPELLER(s): HC-H3YF-1RF		
		MAGNETO(s): Slick		
93-05-06	R	IGNITION SWITCH		
2004-08-10	NM	ECI CYLINDERS		
2005-01-19	NM	GARMIN TRANSPONDER	2004-10-15	
2005-12-20	NR	ELEVATOR TORQUE TUBE		
2005-14-11	NM	SOUTHERN CALIFORNIA PROPELLER SERVICE		
2006-25-08	NM	THERMAWING (E-VADE) DEICE SYSTEM		
2007-07-06R1	R	LINEAR BEARING CONTAMINATION		
2007-16-10	N	TELEDYNE/CONTINENTAL ENGINE		
2007-26-09	NM	HARTZELL PROPELLER	2002-09-08	
2009-09-09	R	CRACKED HINGE BRACKETS		

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

*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.

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2010-26-54 N/M

AD NUMBER

Wing Structural Failure

COMPLIANCE DATE	TOTAL TIME AT COMPLIANCE	TACH OR RECORDING METER TIME AT COMPLIANCE	METHOD OF COMPLIANCE	AUTHORIZED SIGNATURE & NUMBER

Cessna Aircraft Company (Type Certificate A00003SE previously held by Columbia Aircraft Manufacturing (previously The Lancair Company)): Directorate Identifier 2010-CE-067-AD.

Effective Date

(a) This Emergency AD is effective upon receipt.

Affected ADs

(b) This AD supersedes emergency AD 2010-26-53, which was sent by individual letter issued December 10, 2010, to owners/operators of Cessna Aircraft Company (Cessna) (Type Certificate A00003SE previously held by Columbia Aircraft Manufacturing (previously The Lancair Company)) Models LC41-550FG and LC42-550FG airplanes.

Applicability

(c) This AD applies to the following Cessna Aircraft Company (Cessna) (Type Certificate A00003SE previously held by Columbia Aircraft Manufacturing (previously The Lancair Company)) airplanes certified in any category, as identified in table 1 of this AD:

Table 1 – *Applicability*

Model	Serial Numbers
LC41-550FG	41028, 41705, 411114, 411160, 411161, 411162, 411163, 411164, 411165, 411167, 411170, and 411171
LC42-550FG	42517

Subject

(d) Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 57, Wings.

Unsafe Condition

(e) This AD was prompted by a Cessna Model LC41-550FG airplane that suffered a significant structural failure in the wing during a production acceptance flight test. The wing skin disbonded from the upper forward wing spar. The length of the disbond was approximately 7 feet. This condition, if not corrected, could result in catastrophic failure of the wing due to disbonding of the wing skin from the wing spar.

We are issuing this AD to prevent catastrophic failure of the wing due to disbonding of the wing skin from the wing spar.

I am S/N #41044-
This AD does not apply.

Compliance

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

Operation Restriction

(g) Upon receipt of this emergency AD, do not operate the airplane without written approval from the Manager, Wichita Aircraft Certification Office (ACO). This written approval must clearly state that operation is approved per Emergency AD 2010-26-54.

Special Flight Permit

(h) A special flight permit requires written approval from the Manager, Wichita ACO. This written approval must clearly state that operation is approved per Emergency AD 2010-26-54.

Alternative Methods of Compliance (AMOCs)

(i)(1) The Manager, Wichita 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 Principal Maintenance Inspector or Principal Avionics Inspector, as appropriate, or lacking a principal inspector, your local Flight Standards District Office.

Related Information

(j) (1) For further information about this AD, contact: Gary Park, Aerospace Engineer, Wichita ACO, FAA, 1801 Airport Road, Wichita, KS 67209; phone: (316) 946-4123; fax: (316) 946-4107; e-mail: gary.park@faa.gov.

Issued in Kansas City, Missouri, on December 17, 2010.

Earl Lawrence, Manager, Small Airplane Directorate, Aircraft Certification Service.

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2011-3-4 N/R

AD NUMBER

Cracked Hinge Brackets

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

Amendment 39-16588; Docket No. FAA-2009-1186; Directorate Identifier 2009-CE-065-AD.

Effective Date

(a) This airworthiness directive (AD) is effective March 14, 2011.

Affected ADs

(b) This AD supersedes AD 2009-09-09, Amendment 39-15895.

Applicability

(c) This AD applies to the following Cessna Aircraft Company (type certificate previously held by Columbia Aircraft Manufacturing (previously The Lancair Company)) airplane models and serial numbers that are certificated in any category:

Group 1 Airplanes

Model	Serial Nos.
LC40–550FG (300)	40001, 40002, and 40004 through 40079.
LC41–550FG (400)	41001 through 41569, 41571 through 41800, 411001 through 411087, 411089 through 411110, 411112 through 411138, 411140, 411142, and 411147.
LC42–550FG (350)	42001 through 42009, 42011 through 42558, 42560 through 42569, 421001 through 421013, 421015 through 421017, and 421019.

Group 2 Airplanes

Model	Serial Nos.
LC41–550FG (400)	41570, 411088, 411111, 411139, 411141, 411143 through 411146, and 411148 through 411153.
LC42–550FG (350)	42010, 42559, 421014, 421018, and 421020.

Subject

(d) Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 55, Stabilizers.

Unsafe Condition

(e) This AD is the result of reports received of a cracked lower rudder hinge bracket on two of the affected airplanes. We are issuing this AD to detect and correct damage, i.e., cracking, deformation, and discoloration, in the rudder hinges and the rudder hinge brackets, which could result in failure of the rudder. This failure could lead to loss of control.

Compliance

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

(1) For Group 1 airplanes specified in paragraph (c) of this AD: Using the compliance times specified in table 1 of this AD, inspect the rudder hinges and rudder hinge brackets for damage, i.e., cracking, deformation, and discoloration. Do the inspections following Cessna Single Engine Service Bulletin SB09-27-01, dated April 13, 2009; Cessna Single Engine Service Bulletin SB09-27-01, Revision 2, dated November 23, 2009; or Cessna Single Engine. Service Bulletin SB09-27-01, Revision 3, dated July 20, 2010.

Table 1–Inspection Compliance Times

Condition	Initially inspect...	Repetitively inspect...
(i) For airplanes with 25 hours time-in-service (TIS) or more as of May 11, 2009 (the effective date of AD 2009-09-09):	With the rudder removed and using 10X visual magnification, inspect all three rudder hinges and rudder hinge brackets at whichever of the following occurs first: (A) Within the next 10 hours TIS after May 11, 2009 (the effective date of AD 2009-09-09); or (B) Within the next 30 days after May 11, 2009 (the effective date of AD 2009-09-09).	Thereafter inspect as follows until the modification required in paragraph (f)(5) of this AD is done: (A) Every 25 hours TIS or 3 months, whichever occurs first, without removing the rudder, visually inspect all three rudder hinges and rudder hinge brackets; and (B) Every 50 hours TIS or 6 months, whichever occurs first, with the rudder removed and using 10X visual magnification, inspect all three rudder hinges and rudder hinge brackets.
(ii) For airplanes with less than 25 hours TIS as of May 11, 2009 (the effective date of AD 2009-09-09):	Without removing the rudder, visually inspect all three rudder hinges and rudder hinge brackets, at whichever of the following occurs later: (A) Upon accumulating 25 hours TIS; or (B) Within the next 10 hours TIS after May 11, 2009 (the effective date of AD 2009-09-09).	Thereafter inspect as follows until the modification required in paragraph (f)(5) of this AD is done: (A) Every 25 hours TIS or 3 months, whichever occurs first, without removing the rudder, visually inspect all three rudder hinges and rudder hinge brackets; and (B) Every 50 hours TIS or 6 months, whichever occurs first, with the rudder removed and using 10X visual magnification, inspect all three rudder hinges and rudder hinge brackets.

(See page 2)➔

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote™

2009-24-52 N/M
AD NUMBER

Teledyne Continental 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

Directorate Identifier 2009-NE-38-AD.

Effective Date

(a) Emergency AD 2009-24-52, issued on November 18, 2009, is effective upon receipt.

Affected ADs

(b) This AD **supersedes** Emergency AD **2009-24-51**, issued November 16, 2009.

Applicability

(c) This AD supersedure applies to all Teledyne Continental Motors (TCM) 240, 360, 470, 520, and 550 series reciprocating engines with hydraulic valve lifters, part numbers (P/Ns) 657913, 657915, or 657916, installed. These engines are installed on, but not limited to, general aviation airplanes.

Unsafe Condition

(d) This AD supersedure results from TCM reporting three occurrences of rapid wear on the face of lifters, P/Ns 657913, 657915, and 657916, at 5, 6, and 38 hours time-in-service, and from the need to add the 550 series engines to the applicability. We are issuing this AD to prevent excessive hydraulic lifter wear, which can result in loss of engine power and loss of control of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed before further flight after the effective date of this AD, unless the actions have already been done.

Excluded Engines

(f) If your engine was manufactured or rebuilt before June 19, 2009, and you have not had any hydraulic lifters replaced after June 19, 2009, no action is required.

Determining P/N of Lifters

(g) If your engine was manufactured or rebuilt on or after June 19, 2009, or if any of your hydraulic lifters were replaced on or after June 19, 2009, and you can't determine the P/N of your hydraulic lifters from the engine records:

(1) Use the list of engine serial numbers in Section A of TCM Mandatory Service Bulletin (MSB) No. MSB09-8, dated November 3, 2009.

(2) Inspect the hydraulic lifters in each cylinder for P/Ns 657913, 657915, and 657916. Use TCM MSB No. MSB09-8, dated November 3, 2009, Section 1. Action Required, paragraphs 1. through 3. to determine the P/N of the lifters.

Replacing the Lifters

(h) If your engine has any affected hydraulic lifters, replace the hydraulic lifters using TCM MSB No. MSB09-8, dated November 3, 2009, Step 2, paragraphs 2. through 4.

Installation Prohibition

(i) After the effective date of this AD, do not install any hydraulic lifters, P/Ns 657913, 657915, or 657916, into any TCM 240, 360, 470, 520, or 550 series reciprocating engine.

Alternative Methods of Compliance

(j) The Manager, Atlanta 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.

Contact Information

(k) For further information, contact: Anthony Holton, Aerospace Engineer, Atlanta Certification Office, FAA, Small Airplane Directorate, 1701 Columbia Avenue, College Park, GA 30337; e-mail: anthony.holton@faa.gov; telephone (404) 474-5567; fax (404) 474-5606.

Issued in Burlington, Massachusetts, on November 18, 2009.

Peter A. White, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

Applicable Airworthiness Directives

ID No: 23662

Page No: 1

Date: 10/19/08

Model: LC41-550FG, S/N: 41044, Tail No: N611RJ

AD NUMBER	TYPE*	SUBJECT	Supersedes AD Number	N/A**
		ENGINE(s): TSIO-550-C		
		PROPELLER(s): HC-H3YF-1RF		
		MAGNETO(s): Slick		
93-05-06	R	IGNITION SWITCH		
2004-08-10	NM	ECI CYLINDERS		
2005-01-19	NM	GARMIN TRANSPONDER	2004-10-15	
2005-12-20	NR	ELEVATOR TORQUE TUBE		
2005-14-11	NM	SOUTHERN CALIFORNIA PROPELLER SERVICE		
2006-25-08	NM	THERMAWING (E-VADE) DEICE SYSTEM		
2007-07-06	R	LINEAR BEARING CONTAMINATION		
2007-16-10	N	TELEDYNE/CONTINENTAL ENGINE		
2007-26-09	NM	HARTZELL PROPELLER	2002-09-08	

*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.

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

N611RJ
AIRCRAFT REGISTRATION NO.

41044
AIRCRAFT SERIAL NO.

LC41-550FG
TYPE AIRCRAFT

adNote™

2007-7-6 Rev. 1 R
AD NUMBER

Linear Bearing Contamination

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
7.8.09	572.4		Visual Inspection	Annual		FSE011E FSE011E
9/2/10	626.8		Visual	Annual		FSE011E

Cessna Aircraft Company (type certificate previously held by Columbia Aircraft Manufacturing): Amendment 39-15713; Docket No. FAA-2007-27628; Directorate Identifier 2007-CE-025-AD.

Effective Date

(a) This AD becomes effective on December 5, 2008.

Affected ADs

(b) This AD revises AD 2007-07-06, Amendment 39-15011.

Applicability

(c) This AD applies to the following airplane models and serial numbers that are certificated in any category:

Model	Serial Nos.
LC40–550FG	40001 through 40079.
LC41–550FG	41001 through 41800 and 411001 through 411041.
LC42–550FG	42001 through 42569 and 421001 through 421006.

Unsafe Condition

(d) This AD is the result of reports of possible foreign object contamination of the linear bearings. We are issuing this AD to prevent jamming in the aileron and elevator control systems, which could result in failure. This failure could lead to loss of control.

Compliance

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

Aerotech Note: The table at this location in the FAA version of this airworthiness directive has been moved to page 2 to facilitate compilation of this **adNote™**

Note 1: Previous compliance with paragraphs (e)(1) through (e)(5) of this AD using Columbia Mandatory Service Bulletin SB-07- 002A, dated August 29, 2007; Cessna Mandatory Service Bulletin SB- 07-002B, dated December 10, 2007; or Cessna Mandatory Service Bulletin SB-07-002C, dated February 18, 2008, are acceptable methods of compliance.

Note 2: Compliance with Cessna Mandatory Service Bulletin SB-07- 018, dated May 29, 2008, is not considered terminating action for this AD. This AD takes precedence over Cessna Mandatory Service Bulletin SB-07-018, dated May 29, 2008.

Alternative Methods of Compliance (AMOCs)

(f) The Manager, Seattle Aircraft Certification Office (ACO), FAA, ATTN: Jeff Morfitt, Aerospace Engineer, 1601 Lind Avenue, SW., Renton, WA 98057; telephone: (425) 917-6405; fax: (425) 917-6590, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. 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.

(g) AMOCs approved for AD 2007-07-06 are approved for this AD.

Material Incorporated by Reference

(h) You must use Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007, or Cessna Mandatory Service Bulletin SB-07- 002D, dated May 29, 2008, and Cessna Mandatory Service Bulletin SB- 07-018, page 1 dated May 29, 2008, pages 2 through 20 dated May 30, 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 Cessna Mandatory Service Bulletin SB- 07-002D, dated May 29, 2008, and Cessna Mandatory Service Bulletin SB-07-018, page 1 dated May 29, 2008, pages 2 through 20 dated May 30, 2008, under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On April 9, 2007 (72 FR 15822, April 3, 2007), the Director of the Federal Register approved the incorporation by reference of Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007.

(3) For service information identified in this AD, contact Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, Kansas 67227.

(4) 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 October 21, 2008.

John Colomy, Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

(Page 2 of Airworthiness Directive 2007-07-06 R1)

Aerotech Note: Below is the table from Compliance paragraph (**e**)

Actions	Compliance	Procedures
(1) Insert Appendix A of Columbia Mandatory Service Bulletin SB–07–002, dated March 14, 2007, or Appendix A of Cessna Mandatory Service Bulletin SB–07–002D, dated May 29, 2008, into the limitations section of the airplane flight manual (AFM).	Before further flight after April 9, 2007 (the compliance date retained from AD 2007–07–06).	Under 14 CFR 43.7, the owner/operator holding at least a private pilot certificate is allowed to do the AFM insertion requirement of this AD. Make an entry into the aircraft logbook showing compliance with this portion of the AD per compliance with 14 CFR 43.9.
(2) Access and inspect the aileron bearings in both wings and the elevator bearings in the fuselage for foreign object debris.	Initially inspect within the next 35 hours time-in-service (TIS) after April 9, 2007 (the compliance date retained from AD 2007–07–06) Repetitively inspect thereafter at intervals not to exceed 12 calendar months.	Following Columbia Mandatory Service Bulletin SB–07–002, dated March 14, 2007, or Cessna Mandatory Service Bulletin SB–07–002D, dated May 29, 2008, and FAA-approved maintenance procedures. The appropriate maintenance manual contains these procedures.
(3) Remove any debris found during any inspection required in paragraph (e)(2) of this AD.	Before further flight after the inspection in which the debris is found.	Following Columbia Mandatory Service Bulletin SB–07–002, dated March 14, 2007, or Cessna Mandatory Service Bulletin SB–07–002D, dated May 29, 2008, and FAA-approved maintenance procedures. The appropriate maintenance manual contains these procedures.
(4) Inspect the aileron and elevator control rods for scarring or damage near the linear bearings.	Initially inspect within the next 35 hours TIS after April 9, 2007 (the compliance date retained from AD 2007–07–06). Repetitively inspect thereafter at intervals not to exceed 12 calendar months.	Following Columbia Mandatory Service Bulletin SB–07–002, dated March 14, 2007, or Cessna Mandatory Service Bulletin SB–07–002D, dated May 29, 2008, and FAA-approved maintenance procedures. The appropriate maintenance manual contains these procedures.
(5) Contact the manufacturer at the address specified in paragraph (h)(3) of this AD for a repair scheme if any scarring or damage is found during any inspection required in paragraph (e)(4) of this AD.	Make all repairs before further flight after the inspection in which scarring or damage is found.	Following Columbia Mandatory Service Bulletin SB–07–002, dated March 14, 2007, or Cessna Mandatory Service Bulletin SB–07–002D, dated May 29, 2008, and FAA-approved maintenance procedures. The appropriate maintenance manual contains these procedures.
(6) For the inspections required in paragraphs (e)(2) and (e)(4) of this AD, you may install a linear bearing access panel instead of drilling an inspection hole. If the hole has previously been drilled, the access panel may also be installed in addition to the inspection hole.	At any time after the effective date of this AD	Following Cessna Mandatory Service Bulletin SB–07–018, dated May 29, 2008.

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote™

2009-9-9 R

AD NUMBER

Cracked Hinge Brackets

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
7.8.09	572.4	572.4	Rudder Removed Visual	596.4	10.8.09	Mond FSER011E

Amendment 39-15895; Docket No. FAA-2009-0395; Directorate Identifier 2009-CE-023-AD.

Effective Date

(a) This AD becomes effective on May 11, 2009.

Affected ADs

(b) None.

Applicability

(c) This AD applies to the following airplane models and serial numbers that are certificated in any category:

Model	Serial Nos.
LC40-550FG	40001 through 40079
LC41-550FG	41001 through 41800, 411001 and subsequent
LC42-550FG	42001 through 42569, 421001 and subsequent

Unsafe Condition

(d) This AD is the result of reports that cracked lower rudder hinge brackets were found on two of the affected airplanes. We are issuing this AD to detect and correct damage, i.e., cracking, deformation, and discoloration, in the rudder hinges and the rudder hinge brackets, which could result in failure of the rudder. This failure could lead to loss of control.

Compliance

(e) To address this problem, you must do the following per Cessna Aircraft Company Single Engine Service Bulletin SB09-27-01, dated April 13, 2009, unless already done:

Condition	Initial Inspection	Repetitive Inspection
(1) For airplanes with 25 hours time-in-service (TIS) or more as of May 11, 2009 (the effective date of this AD):	With the rudder removed and using 10X visual magnification, inspect all three rudder hinges and rudder hinge brackets for damage, i.e., cracking, deformation, and discoloration, at whichever of the following occurs first: (i) Within the next 10 hours TIS after May 11, 2009 (the effective date of this AD); or (ii) Within the next 30 days after May 11, 2009 (the effective date of this AD).	Thereafter inspect as follows: (A) Every 25 hours TIS or 3 months, whichever occurs first, without removing the rudder, visually inspect all three rudder hinges and rudder hinge brackets for damage; and (B) Every 50 hours TIS or 6 months, whichever occurs first, with the rudder removed and using 10X visual magnification, inspect all three rudder hinges and rudder hinge brackets for damage.
(2) For airplanes with less than 25 hours TIS as of May 11, 2009 (the effective date of this AD):	Without removing the rudder, visually inspect all three rudder hinges and rudder hinge brackets for damage, at whichever of the following occurs later: (i) Upon accumulating 25 hours TIS; or (ii) Within the next 10 hours TIS after May 11, 2009 (the effective date of this AD).	Thereafter inspect as follows: (A) Every 25 hours TIS or 3 months, whichever occurs first, without removing the rudder, visually inspect all three rudder hinges and rudder hinge brackets for damage. (B) Every 50 hours TIS or 6 months, whichever occurs first, with the rudder removed and using 10X visual magnification, inspect all three rudder hinges and rudder hinge brackets for damage.

(3) If damage is found on any of the rudder hinges and/or rudder hinge brackets during any inspection required in paragraphs (e)(1) or (e)(2), before further flight, replace the damaged rudder hinges and/or rudder hinge brackets with new parts and inspect following the Repetitive Inspection procedures specified in paragraphs (e)(1) or (e)(2) of this AD.

(4) If the repetitive inspections required in paragraphs (e)(1) and (e)(2) of this AD become due at the same time, credit for both inspections will be given by doing the rudder removal and 10X visual inspection.

(5) Use the form (Figure 1 of this AD) to report the results of the following inspections required in this AD to the FAA at the address specified in paragraph (f) of this AD:

(i) Initial inspections required in paragraphs (e)(1) and (e)(2) of this AD, report within 10 days after the inspection or within 10 days of May 11, 2009 (after the effective date of this AD), whichever occurs later.

(ii) Repetitive inspections required in paragraphs (e)(1) and (e)(2) of this AD ONLY if cracks are found, report within 10 days after the inspection.

(iii) 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.

Aerotech Note: Table 1 that was this location in the original FAA version has been moved to to page 2 to facilitate compilation of this adNote™

Alternative Methods of Compliance (AMOCs)

(f) 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: 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. Before using any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(g) You must use Cessna Aircraft Company Single Engine Service Bulletin SB09-27-01, dated April 13, 2009, 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, Product Support, P.O. Box 7706; Wichita, Kansas 67277; telephone: (316) 517-5800; fax: (316) 942-9006; Internet: http://www.cessna.com.

(3) You may review copies of the service information incorporated by reference for this AD at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the Central Region, call (816) 329-3768.

(4) You may also review copies of the service information incorporated by reference for this AD 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 April 23, 2009.

Scott A. Horn, Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

(Figure 1 from Airworthiness Directive 2009-09-09)

AD 2009-09-09 INSPECTION REPORT		
Airplane Model		
Airplane Serial Number		
Airplane Tach Hours at Time of Inspection		
Is Upper Rudder Bracket Damaged?	NO	YES, describe extent of damage
Is Middle Rudder Bracket Damaged?	NO	Yes, describe extent of damage
Is the Lower Rudder Bracket Damaged? (Models LC40-550FG & LC42-550FG only)	NO	Yes, describe extent of damage
Is Lower Rudder Hinge Damaged? (Model LC40-550FG)	NO	Yes, describe extend of damage
Were any other discrepancies noticed during the inspection?		
Name:		
Telephone and/or e-mail address:		
Date:		

Send report to: Gary Park, Aerospace Engineer, ACE-118W, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Room 100, Wichita, Kansas 67209; fax: (316) 946-4107; e-mail: gary.park@faa.gov.

Figure 1

611RJ
AIRCRAFT REGISTRATION NO

41044
AIRCRAFT SERIAL NO

LC41-550-FG
TYPE AIRCRAFT

adNote

2007-7-6 R
AD NUMBER

Linear Bearing Contamination

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
4/27/09	334.3	334.3	visual	334.3	334.3	KNMR 8645
7/8/09	572.4	572.4	Visual	Annual		FSERO/IE

Amendment 39-15011; Docket No. FAA-2007-27628; Directorate Identifier 2007-CE-025-AD.

Effective Date

(a) This AD becomes effective on April 9, 2007.

Affected ADs

(b) None.

Applicability

(c) This AD applies to the following airplane models and serial numbers that are certificated in any category:

Model	Serial Numbers
LC40-550FG	40001 through 40079.
LC41-550FG	41001 and up.
LC42-550FG	42001 and up.

Unsafe Condition

(d) This AD is the result of reports of possible foreign object contamination of the linear bearings. We are issuing this AD to prevent jamming in the aileron and elevator control systems, which could result in failure. This failure could lead to loss of control.

Compliance

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

Actions	Compliance	Procedures
(1) Insert Appendix A of Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007, into the Limitations section of the Airplane Flight Manual (AFM).	Before further flight after April 9, 2007 (the effective date of this AD).	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 do the AFM insertion requirement of this AD. Make an entry in the aircraft records showing compliance with this portion of the AD following section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).
(2) Access and inspect the aileron and elevator linear bearings on both wings for foreign object debris.	Initially inspect within the next 35 hours time-in-service (TIS) after April 9, 2007 (the effective date of this AD). Repetitively inspect thereafter at intervals not to exceed 12 calendar months.	Following Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007, and the applicable maintenance manual.
(3) Remove any debris found during any inspection required in paragraph (e)(2) of this AD.	Remove any debris before further flight after the inspection in which the debris is found.	Following Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007, and the applicable maintenance manual.
(4) Inspect the aileron and elevator control rods for scarring or damage near the linear bearings.	Initially inspect within the next 35 hours TIS after April 9, 2007 (the effective date of this AD). Repetitively inspect thereafter at intervals not to exceed 12 calendar months.	Following Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007, and the applicable maintenance manual.
(5) Contact the manufacturer at the address specified in paragraph (g)(2) of this AD for a repair scheme if any scarring or damage is found during any inspection required in paragraph (e)(4) of this AD.	Make all repairs before further flight after the inspection in which scarring or damage is found.	Following Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007, and the applicable maintenance manual.

Alternative Methods of Compliance (AMOCs)

(f) The Manager, Seattle Aircraft Certification Office (ACO), FAA, ATTN: Jeff Morfitt, Aerospace Engineer, 1601 Lind Avenue SW., Renton, WA 98057; telephone: (425) 917-6405; fax: (425) 917-6590, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(g) You must use Columbia Mandatory Service Bulletin SB-07-002, dated March 14, 2007, to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Columbia Aircraft Manufacturing Corp., 22550 Nelson Road, Bend, Oregon 97701; telephone: (888) 599-8660; e-mail: Product.Support@FlyColumbia.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 March 27, 2007.

Kim Smith, Manager, Small Airplane Directorate, Aircraft Certification Service

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	AUTHORIZED SIGNATURE & NUMBER
				TOTAL TIME	DATE, TACH, OR RECORDING METER TIME	

Amendment 39-8511. Docket 92-NM-165-AD.

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

Cessna Model	Serial Numbers		
150	15074428	through	15079405
A150	A1500389	through	A1500734
F150	F15001024	through	F15001428
FRA150	FRA1500212	through	FRA1500336
152	15279406	through	15286033
A152	A1520735	through	A1521049
F152	F15201429	through	F15201980
FA152	FA1520337	through	FA1520425
172	17261486	through	17276673
R172	R1722000	through	R1723454
172RG	172RG0001	through	172RG1191
F172	F17201045	through	F17202254
FR172	FR17200441	through	FR17200675
177	17701890	through	17702752
177RG	177RG0342	through	177RG1366
F177RG	F177RG0093	through	F177RG0177
180	18052317	through	18053203
182	18261786	through	18268615
R182	R18200001	through	R18202041
A182	A182-0137	through	A182-0148
F182	F18200001	through	F18200169
FR182	FR18200001	through	FR18200070
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 suppresser is installed on the starter solenoid. If one is not installed, prior to further flight, install a starter solenoid diode in accordance with ACS Service Bulletin SB92-01, dated August 15, 1992; or Cessna Service Bulletin SEB91-5, Revision 1, dated June 14, 1991.

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

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

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

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

(e) The inspection, lubrication, replacement, and modification shall be done in accordance with ACS Service Bulletin SB92-01, dated August 15, 1992; or Cessna Service Bulletin SEB91-5, Revision 1, dated June 14, 1991, which includes Attachment to Service Bulletin SEB91-5R1, Revision 1, dated June 14, 1991. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from ACS Products Company, P.O. Box 152, 1585 Copper Drive, Lake Havasu City, Arizona 86403-0008; or Cessna Aircraft Company, Customer Services, P.O. Box 7704, Wichita, Kansas 67277. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Los Angeles Aircraft Certification Office, 3229 East Spring Street, Long Beach, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

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

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: Lancair	Model: LC41 550FG
	Serial No.: 41044	Nationality and Registration Mark: N611RJ
2. Owner	Name (As shown on registration certificate): Light Hawk	Address (As shown on registration certificate): 27 Storer Street, Portland, Maine 04102

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.
Lincoln Park Aviation 425 Beaverbrook Road Lincoln Park, NJ 07035	[ ] U.S. Certificated Mechanic [ ] Foreign Certificated Mechanic [X] Certificated Repair Station [ ] Manufacturer	LKPR101K

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
February 25, 2009	Frank R. Galella III

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		[ ] Inspection Authorization	
	[ ] FAA Designee	[X]	Repair Station		[ ] Person Appoved by Transport Canada Airworthiness Group	

Date of Approval or Rejection	Certificate or Designation No.	Signature of Authorized Individual
February 25, 2009	CRS# LKPR101K	Frank R Galella III

FAA Form 337 (12-88)

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.)

N611RJ S/N:41044 Dated: February 25, 2009

Installed TKS Ice Protection System I/A/W STC# SA01435WI. Work performed in conformance with the Manufactures Installation Manual 12253-01 Issue 4 - dated JULY 25, 2008 and the Manufactures drawings listed in the 12200-DL Rev. 2 dated 21 November 2006.

Installation completed using the Acceptable Methods, Practices and Techniques of FAA AC 43.13-1B & 2B, Cessna Maintenance manual, Hartzell Manual (115N) and TKS Procedures Manual 30-09-46 (Handling of Nylon Tubing.)

For continued airworthiness of the TKS Ice Protection System refer to the Pilots Operating Handbook. TKS Supplement, Section 8 (Handling, Service and Maintenance). pgs 6-8.

P.O.H. Supplement added: 12200-AFM - Issue dated June 15, 2007.

Re-calculated the Weight and Balance.

THIS AIRCRAFT ***IS NOT*** APPROVED FOR FLIGHT INTO KNOWN ICING CONDITIONS AT ANY TIME.

********** **NOTHING FOLLOWS** **********

☐ Additional Sheets Are Attatched

*U.S.GPO:1994-568-012/00019

US Department of Transportation
Federal Aviation Administration

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

Form Approved OMB No. 2120-0020 11/30/2007 | 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. (49U.S.C. §46301(a)).

1. Aircraft	Nationality and Registration Mark: N611RJ	Serial No.: 41044	
	Make: Lancair Company	Model: LC41-550FG	Series:
2. Owner	Name (*As shown on registration certificate*): RJ Aviation, Inc	Address (*As shown on registration certificate*): Address 27 Storer St; City Portland; State Maine; Zip 04102-3627; Country USA	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☒	AIRFRAME	----------	(*As described in Item 1 above*)	----------
☐	☐	POWERPLANT			
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address

Name Maine Aviation Aircraft Maintenance
Address 406 Yellowbird Rd
City Portland State Maine
Zip 04102 Country USA

B. Kind of Agency

- ☐ U.S. Certificated Mechanic
- ☐ Foreign Certificated Mechanic
- ☒ Certificated Repair Station
- ☐ Certified Maintenance Organization
- ☐ Manufacturer

C. Certificate No.: FSER011E

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

Shawn Falkner / June 11, 2008

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 prescribe by the Administrator of the Federal Aviation Administration and is ☒ APPROVED ☐ REJECTED

BY

☐	FAA Flt. Standards Inspector	☐	Manufacturer	☐	Maintenance Organization	☐	Person Approved by Transport Canada Airworthiness Group
☐	FAA Designee	X	Repair Station	☐	Inspection Authorization		Other (*Specify*)

Certificate or Designation No.: FSER011E

Signature/Date of Authorized Individual

Shawn Falkner / June 11, 2008

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.)*

N611RJ	June 11, 2008
Nationality and Registration Mark	Date

Removed the following equipment:

- 2 each Garmin GPS 430 GPS/Nav/Com Reciever, p/n 011-00280-10.
- 2 each Garmin GA56 GPS antenna, p/n 011-00134-00.

Upgraded the existing Dual Garmin GNS 430 GPS Systems in accordance with STC SA01933LA and the Approved Model List, Rev. Original, dated November 6, 2006; consisting of:

- 2 each GNS 430W GPS/WAAS Receiver (TSO-C37d, C38d, C34e, C36e, C40c, C146a, C113), p/n 011-01060-040
- 2 each GA35 WAAS Antenna (TSO-C144, 129a), p/n 013-00235-00

The WAAS antennas were installed in the locations vacated by the removed GA56 antennas.

Successfully completed ground and flight functional evaluations in accordance with AC 20-138A paragraphs 22 & 23 and Installation Manuals listed below.

A FAA/STC approved Airplane Flight Manual Supplement for the #1 Garmin GPS 400W GPS-WAAS Navigation System, p/n 190-00356-03, Rev. A, dated November 20, 2007 has been inserted into the Approved Airplane Flight Manual.

- The following options are selected in the AFMS: Section 2.7 – No limitations for autopilot coupling; Section 4.3 – This installation supports a seamless transition from digital (GPSS) to analog guidance for the autopilot. To capture the vertical guidance, the pilot may engage the autopilot in APR mode at any time when the GPS Glide Slope (VDI) becomes valid (displayed without a FLAG).

Owner/Operator provided with Garmin 400W Series Pilot's Guide, p/n 190-00356-00, Rev B; Garmin 400W/500W Series Display Interfaces, p/n 190-00356-31, Rev. B; Garmin 400W Quick Reference, p/n 190-00356-01, Rev B.; and 400W/500W Series, p/n 190-00356-30, Rev. B.

This systems are approved for VFR/IFR enroute, terminal and non-precision approach operations and approach procedures with vertical guidance when operated in accordance with the above FAA approved Airplane Flight Manual Supplement, and the Garmin 400W Series Pilot's Guide

Total current does not exceed recommended load as computed in reference to the aircraft maintenance manual.

Equipment was installed in a manner that will not interfere with or adversely affect the safe operation of the aircraft.

The above installation was accomplished IAW the following criteria;

- STC SA01933LA
- AC 20-138A.
- 14 CFR 23.

The equipment list and weight and balance information was revised.

Airframe log entry was made stating this alteration and Garmin 400W Series Instructions for Continued Airworthiness, Doc. 190-00356-65, Rev. A, dated 11/03/06, are now part of this aircraft's inspection/maintenance requirements. These ICA's supercede data for the previously installed GNS 430's.

A detailed description of the work performed is on file at Maine Aviation under Work Order 31618.

END

[X] Additional Sheets Are Attached

United States Of America

Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number **SA01933LA**

This Certificate issued to **Garmin AT, Inc.**
2345 Turner Road S.E.
Salem, Oregon 97302

*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 attached Approved Model List (AML)

Make: No. SA01933LA for list of approved aircraft

Model: models and applicable airworthiness regulations.

Description of Type Design Change: Installation of Garmin Model 400W / 500W Series GPS-WAAS Navigation System in accordance with FAA Approved Garmin 400W Series Master Data List, Drawing No.: 005-C0221-00, Revision "A", dated October 31, 2006, or later FAA approved revision; or FAA Approved Garmin 500W Series Master Data List, Drawing No.: 005-C0221-01, Revision "A", dated October 31, 2006, or later FAA approved revision. For Garmin 400W installations: FAA Approved Garmin 400W Series Airplane Flight Manual Supplement, Document No.: 190-00356-63, Revision "Original", dated November 6, 2006, or later FAA approved revision. For Garmin 500W installation: FAA Approved Garmin 500W Series Airplane Flight Manual Supplement, Document No.: 190-00357-63, Revision "Original", dated November 6, 2006, or later FAA approved revision.

Limitations and Conditions: This approval should not be incorporated in any aircraft unless it is determined that the interrelationship between this installation and any previous approved configuration will not introduce any adverse effect upon the airworthiness of the aircraft. 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

Date of application: January 31, 2006

Date of issuance: November 6, 2006

Date reissued:

Date amended:

By direction of the Administrator

(Signature)

Manager, Systems & Equipment Branch, Los Angeles Aircraft Certification Office

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)

Number STC: SA01933LA

Installation of Garmin Model 400W / 500W Series GPS-WASS Navigation System

Issued Date: November 6, 2006

Revision: "Original"

Aircraft Make and Model Designation	Type Certificate Number	Certification Basis	Required Approved Data & Added Model Specific Limitations	AML Revision Date
Adam Aircaft				
A500	A00009DE	FAR 23	005-C0221-00 005-C0221-01	
Aermacchi S.p.A (Sial Marchetti)				
S.205-18/F, S.205-18/R, S.205-20/F, S.205-20/R S.205-22/R, S.208, S.208A	A9EU	FAR 23	005-C0221-00 005-C0221-01	
F.260, F.260B, F.260C, F.260D, F.260E, F.260F	A10EU	CAR 3	005-C0221-00 005-C0221-01	
S.211A	A86EU	FAR 23	005-C0221-00 005-C0221-01	
Aero Commander (Dynac Aerospace Corp)				
10, 10A, 100, 100A, 100-180	1A21	CAR 3	005-C0221-00 005-C0221-01	
Aeronautica Macchi S.p.A (Macchi)				
AL 60, AL 60-B, AL 60-F5, AL 60-C5	7A12	CAR 3	005-C0221-00 005-C0221-01	
AM-3	A19EU	FAR 23	005-C0221-00 005-C0221-01	
Aerostar Aircraft Corp. (Piper Aerostar)				
PA-60-600, PA-60-601 (Aerostar 601), PA-60-601P Aerostar 601P), PA-60-602P (Aerostar 602P), PA-60-700P (Aerostar 700P)	A17WE	FAR 23	005-C0221-00 005-C0221-01	
360, 400	A11WE	FAR 23	005-C0221-00 005-C0221-01	
American Champion				
402	A3CE	CAR 3	005-C0221-00 005-C0221-01	
7GCA, 7GCB, 7KC, 7GCBA, 7GCAA, 7GCBC, 7KCAB	A-759	CAR 4a	005-C0221-00 005-C0221-01	
8KCAB, 8GCBC	A21CE	FAR 23	005-C0221-00 005-C0221-01	
Aviat (Sky International)				
A-1, A-1A, A-1B	A22NM	FAR 23	005-C0221-00 005-C0221-01	
S-1S, S-1T, S-2, S-2A, S-2S, S-2B, S-2C	A8SO	FAR 23	005-C0221-00 005-C0221-01	

Aircraft Make and Model Designation	Type Certificate Number	Certification Basis	Required Approved Data & Added Model Specific Limitations	AML Revision Date
Bellanca (Alexandria Aircraft LLC)				
14-13, 14-13-2, 14-13-3, 14-13-3W	A-773	CAR 4a	005-C0221-00 005-C0221-01	
14-19, 14-19-2, 14-19-3, 14-19-3A, 17-30, 17-31, 17-31TC	1A3	CAR 3	005-C0221-00 005-C0221-01	
17-30A, 17-31A, 17-31ATC	A18CE	FAR 23	005-C0221-00 005-C0221-01	
Britten-Norman (B-N Group Limited)				
BN-2, BN-2A, BN-2A-2, BN-2A-3, BN-2A-6, BN-2A-8, BN-2A-20, BN-2A-21, BN-2A-26, BN-2A-27, BN-2B-20, BN-2B-21, BN-2B-26, BN-2B-27, BN-2T, BN-2T-4R	A17EU	FAR 23	005-C0221-00 005-C0221-01	
BN2A MK. III, BN2A MK. III-2, BN2A MK. III-3	A29EU	FAR 23	005-C0221-00 005-C0221-01	
Bushmaster				
Bushmaster 2000	A19WE	CAR 3	005-C0221-00 005-C0221-01	
Cessna				
120, 140	A-768	CAR 3	005-C0221-00 005-C0221-01	
140A	5A2	CAR 3	005-C0221-00 005-C0221-01	
150, 150A, 150B, 150C 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150K, A150L, A150M, 152, A152	3A19	CAR 3 FAR 23	005-C0221-00 005-C0221-01	
170, 170A, 170B	A-799	CAR 3	005-C0221-00 005-C0221-01	
172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H, 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 172R, 172S	3A12	CAR 3, FAR 23	005-C0221-00 005-C0221-01	
172RG, P172D, R172E, R172F, R172G, R172H, R172J, R172K, 175, 175A, 175B, 175C	3A17	CAR 3	005-C0221-00 005-C0221-01	
177, 177A, 177B	A13CE	FAR 23	005-C0221-00 005-C0221-01	
177RG	A20CE	FAR 23	005-C0221-00 005-C0221-01	
180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K	5A6	CAR 3	005-C0221-00 005-C0221-01	
182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 182S, 182T, R182, T182, TR182, T182T	3A13	CAR 3, FAR 23	005-C0221-00 005-C0221-01	
185, 185A, 185B, 185C, 185D, 185E, A185E, A185F	3A24	CAR 3	005-C0221-00 005-C0221-01	
190, 195, 195A, 195B	A-790	CAR 3	005-C0221-00 005-C0221-01	
210, 210A, 210B, 210C, 210D, 210E, 210F, T210F, 210G, T210G, 210H, T210H, 210J, T210J, 210K, T210K, 210L, T210L, 210M, T210M, 210N, P210N, T210N, 210R, P210R, T210R, 210-5, 210-5A	3A21	CAR 3	005-C0221-00 005-C0221-01	

Aircraft Make and Model Designation	Type Certificate Number	Certification Basis	Required Approved Data & Added Model Specific Limitations	AML Revision Date
206, P206, P206A, P206B, P206C, P206D, P206E, TP206A, TP206B, TP206C, TP206D, TP206E, U206, U206A, U206B, U206C, U206D, U206E, U206F, U206G, TU206A, TU206B, TU206C, TU206D, TU206E, TU206F, TU206G, 206H, T206H	A4CE	CAR 3, FAR 23	005-C0221-00 005-C0221-01	
207, 207A, T207, T207A	A16CE	FAR 23	005-C0221-00 005-C0221-01	
208, 208A, 208B	A37CE	FAR 23	005-C0221-00 005-C0221-01	
T-303 (Crusader)	A34CE	FAR 23	005-C0221-00 005-C0221-01	
310, 310A (USAF U-3A), 310B, 310C, 310D, 310E (USAF U-3B), 310F, 310G, 310H, E310H, 310I, 310J, 310J-1, E310J, 310K, 310L, 310N, 310P, T310P, 310Q, T310Q, 310R, T310R	3A10	CAR 3	005-C0221-00 005-C0221-01	
320, 320A, 320B, 320C, 320D, 320E, 320F, 320-1, 335, 340, 340A	3A25	CAR 3	005-C0221-00 005-C0221-01	
336	A2CE	CAR 3	005-C0221-00 005-C0221-01	
337, 337A, 337B, T337B, 337C, 337E, T337E, T337C, 337D, T337D, M337B, 337F, T337F, 337G, T337G, 337H, P337H, T337H, T337H-SP	A6CE	CAR 3, FAR 23	005-C0221-00 005-C0221-01	
401, 401A, 401B, 402, 402A, 402B, 402C, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425	A7CE	CAR 3	005-C0221-00 005-C0221-01	
404, 406	A25CE	FAR 23	005-C0221-00 005-C0221-01	
441	A28CE	FAR 23	005-C0221-00 005-C0221-01	
501, 551	A27CE	FAR 23	005-C0221-00 005-C0221-01	
525, 525A	A1WI	FAR 23	005-C0221-00 005-C0221-01	
Cirrus Design Corp				
SR20, SR22	A00009CH	FAR 23	005-C0221-00 005-C0221-01	
Commander Aircraft Co.				
112, 112TC, 112B, 112TCA, 114, 114A, 114B, 114TC	A12SO	CAR 3	005-C0221-00 005-C0221-01	
Cub Crafters				
CC18-180, CC18-180A	A00009SE	FAR 23	005-C0221-00 005-C0221-01	
DeHavilland/Bombardier				
DHC-2 Mark I, DHC-2 Mark II, DHC-2 Mark III	A-806	CAR 3	005-C0221-00 005-C0221-01	
(Twin Otter) DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300	A9EA	CAR 3	005-C0221-00 005-C0221-01	
DHC-3	A-815	CAR 3	005-C0221-00 005-C0221-01	
DH.C1, 21, 22, 22A	A44EU	FAR 21	005-C0221-00 005-C0221-01	

Aircraft Make and Model Designation	Type Certificate Number	Certification Basis	Required Approved Data & Added Model Specific Limitations	AML Revision Date
Diamond Aircraft Company				
DA 20-A1, DA20-C1	TA4CH	FAR 23	005-C0221-00 005-C0221-01	
DA 40	A47CE	FAR 23	005-C0221-00 005-C0221-01	
Embraer				
EMB-110P1, EMB-110P2	A21SO	FAR 23	005-C0221-00 005-C0221-01	
Extra (Extra Flugzeugbau GmbH)				
EA300, EA300L, EA300S, EA300/200	A67EU	FAR 23	005-C0221-00 005-C0221-01	
EA-400	A43CE	FAR 23	005-C0221-00 005-C0221-01	
Fairchild				
SA26-T, SA26-AT, SA226-T, SA226-AT, SA226-T(B), SA227-AT, SA227-TT	A5SW	CAR 3	005-C0221-00 005-C0221-01	
SA226-TC, SA227-AC (C-26A), SA227-BC (C-26A), SA227-PC	A8SW	FAR 23	005-C0221-00 005-C0221-01	
SA227-CC, SA227-DC	A18SW	FAR 23	005-C0221-00 005-C0221-01	
Found Aircraft Development, Inc.				
FBA-2C, FBA-2C1 (Bush Hawk), FBA-2C2 (Bush Hawk XP)	A7EA	CAR 3 FAR 23	005-C0221-00 005-C0221-01	
Grob-Werke				
G115, G115A, G115B, G115C, G115C2, G115D, G115D2, G115EG	A57EU	FAR 23	005-C0221-00 005-C0221-01	
G120A	A49CE	FAR 23	005-C0221-00 005-C0221-01	
G520, G520T	A63EU	FAR 23	005-C0221-00 005-C0221-01	
Grumman American (Tiger Aircraft LLC)				
AA-1, AA-1A, AA-1B, AA-1C	A11EA	FAR 23	005-C0221-00 005-C0221-01	
AA-5, AA-5A, AA-5B, AG-5B	A16EA	FAR 23	005-C0221-00 005-C0221-01	
Gulfstream American Corp (Grumman)				
G-44, G-44A, SCAN Type 30	A-734	CAR 4a	005-C0221-00 005-C0221-01	
Helio (Alliance Aircraft Group, LLC)				
15A, 20	3A3	CAR 4a	005-C0221-00 005-C0221-01	
H-250, H-295, HT-295, H391, H391B, H-395, H-395A, H-700, H-800	1A8	CAR 3	005-C0221-00 005-C0221-01	
HST-550, HST-550A	A4EA	CAR 3	005-C0221-00 005-C0221-01	
500	A2EA	CAR 3	005-C0221-00 005-C0221-01	
King's Engineering Fellowship (The)				
Model 44	A2WI	FAR 23	005-C0221-00 005-C0221-01	

Aircraft Make and Model Designation	Type Certificate Number	Certification Basis	Required Approved Data & Added Model Specific Limitations	AML Revision Date
4500-300, 4500-300 Series II	A17CE	FAR 23	005-C0221-00 005-C0221-01	
Lake/Revo (Global Amphibians LLC)				
Colonial C-1, Colonial C-2, Lake LA-4, Lake LA-4A, Lake LA-4P, Lake LA-4-200, Lake Model 250	1A13	CAR 3	005-C0221-00 005-C0221-01	
Lancair Company (The) (Columbia Aircraft)				
LC40-550FG, LC41-550FG, LC42-550FG	A00003SE	FAR 23	005-C0221-00 005-C0221-01	
Learjet				
23	A5CE	CAR 3	005-C0221-00 005-C0221-01	
Liberty Aerospace Incorporated				
XL-2	A00008DE	FAR23	005-C0221-00 005-C0221-01	
Lockheed Aircraft Corporation				
402-2	2A11	CAR 3	005-C0221-00 005-C0221-01	
18	A-723	CAR 4a	005-C0221-00 005-C0221-01	
Luscombe Aircraft Corporation				
11A, 11E	A-804	CAR 3	005-C0221-00 005-C0221-01	
Maule				
Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4-180C, M-4-180S, M-4-180T, M-4-210, M-4-210C, M-4-210S, M-4-210T, M-4-220, M-4-220C, M-4-220S, M-4-220T, M-5-180C, M-5-200, M-5-210C, M-5-210TC, M-5-220C, M-5-235C, M-6-180, M-6-235, M-7-235, MX-7-235, MX-7-180, MX-7-420, MXT-7-180, MT-7-235, M-8-235, MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-7-235B, M-7-235A, M-7-235C, MX-7-180C, M-7-260, MT-7-260, M-7-260C, M-7-420AC, MX-7-160C, MX-7-180AC, M-7-420A, MT-7-420	3A23	CAR 3	005-C0221-00 005-C0221-01	
Micco, Meyers (LanShe Aerospace, LLC)				
MAC-125C, MAC-145, MAC-145A, MAC-145B	3A1	CAR 4a, FAR 23	005-C0221-00 005-C0221-01	
Mitsubishi				
MU-2B-25, MU-2B-35, MU-2B-26, MU-2B-36, MU-2B-26A, MU-2B-36A, MU-2B-40, MU-2B-60	A10SW	CAR 3	005-C0221-00 005-C0221-01	
MU-2B, MU-2B-10, MU-2B-20, MU-2B-15, MU-2B-30, MU-2B-35, MU-2B-25, MU-2B-36, MU-2B-26	A2PC	CAR 3	005-C0221-00 005-C0221-01	
Mooney Aircraft Corp				
M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20L, M20M, M20R, M20S	2A3	CAR 3	005-C0221-00 005-C0221-01	
M22	A6SW	CAR 3	005-C0221-00 005-C0221-01	
Moravan (Moravan a.s.)				
ZLIN 562L	A30EU	FAR 23	005-C0221-00 005-C0221-01	

400W Series

Instructions for Continued Airworthiness

Document Number 190-00356-65 Rev. A

Garmin Ltd. Or its subsidiaries
c/o Garmin International, Inc.
1200 E. 151st Street
Olathe, Kansas 66062 USA

Record of Revision

Rev.	Date	Description of Change
1	10-19-06	Initial Release
A	11-03-06	Revision for STC Issuance

1. INTRODUCTION

1.1 PURPOSE

This document is designed for use by the installing agency of the Garmin Model 400W Series GPS/WAAS Nav/Com as Instructions for Continued Airworthiness in response to Federal Aviation regulation (FAR) Part 23.1529, and Part 23 Appendix G. The ICA includes information required by the operator to adequately maintain the Garmin Models 400W series installed under Approved Model List (AML) STC SA01933LA.

1.2 Scope

This document identifies the Instruction for Continued Airworthiness for the modification of the aircraft for installation of the Garmin Models 400W series GPS/WAAS Nav/Com installed under Approved Model List (AML) STC SA01933LA.

1.3 Document Control

This document shall be released, archived, and controlled in accordance with the Garmin document control system. When this document is revised, refer to Section 2.15 for information on how to gain FAA acceptance or approval and how to notify customers of changes.

1.4 Airworthiness Limitations Section

There are no additional Airworthiness Limitations as defined in 14 CFR § 23, Appendix G. G23.4 that result from this modification. The Airworthiness Limitations section is FAA approved and specifies maintenance required under §§43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

1.5 Permission to Use Certain Documents

Permission is granted to any corporation or person applying for approval of a Garmin Model 400W Series to use and reference appropriate STC documents to accomplish the Instructions for Continued Airworthiness and show compliance with STC engineering data. This permission does not construe suitability of the documents. It is the responsibility of the applicant to determine the suitability of the documents for the ICA.

1.6 Definitions

The following terminology is used within this document:

1) **AC:** Advisory Circular
2) **ACO:** Aircraft Certification Office
3) **AEG:** Aircraft Evaluation Group
4) **CFR:** Code of Federal Regulations
5) **DER:** Designated Engineering Representative
6) **FAA:** Federal Aviation Administration

7) **IAW:** In Accordance With
8) **ICA:** Instructions for Continued Airworthiness
9) **MFD:** Multi-Function Display unit
10) **PMI:** Primary Manufacturing Inspector
11) **POI:** Primary Operations Inspector
12) **STC:** Supplemental Type Certificate
13) **TC:** Type Certification or Type Certificate
14) **TSO:** Technical Standard Order

2. INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

2.1 Introduction

Content, Scope, Purpose and Arrangement:	This document identifies the Instructions for Continued Airworthiness for the modification of the aircraft by installation of the Garmin Models 400W Series GPS/WAAS Nav/Com.
Applicability:	Applies to aircraft altered by installation of the Garmin Model 400W Series GPS/WAAS Nav/Com.
Definition of Abbreviations:	See Section 1.6
Precautions:	None
Units of measurement:	None
Referenced publications: *(or later FAA approved revisions)*	190-00356-02 Rev. A *400W Series Installation Manual* 005-C0221-00 Rev. A *400W Series STC Master Data List*
Retention:	This document, or the information contained within, will be included in the aircraft's permanent records.

2.2 Description of Alteration

The Garmin Model 400W Series GPS/WAAS Nav/Com unit is a 6 ¼ inch wide panel mounted unit with all the interface connections behind the instrument panel. Installation of the Garmin Model 400W Series GPS/WAAS Nav/Com system interfaces, specific for the aircraft installation, is documented in the GNS 400W Series Post-Installation Checkout Log that is retained as part of the aircraft's permanent records. The 400W Series units combine a large number of easily acceptable controls to use the color multi-function display, Nav and Com transceiver, GPS/WAAS navigator in a single unit.

2.3 Control, Operating Information

See the 400W Series Installation Manual, listed under the reference documentation in paragraph 2.1 of this document, for system operation and self-test information.

2.4 Servicing Information

None. In the event of system failure, return the unit to the manufacturer or an approved Garmin repair station.

2.5 Periodic Maintenance Instructions

The 400W Series units are designed to detect internal failure. A thorough self-test is executed automatically upon application of power to the units, and built-in test is continuously executed. Detected errors are indicated on the equipment via failure annunciations and maintenance is on-condition.

Operation of the 400W Series unit is not permitted unless an inspection as described in this section has been completed within the preceding 12 calendar months. Conduct a visual inspection on the 400W series unit and its wire harness to insure installation integrity:

1. Inspect the unit for security of attachment.
2. Inspect all knobs and buttons for legibility.
3. Inspect condition of wiring, routing and attachment/clamping.

2.5.1 Cleaning the Front Panel

The front bezel, keypad, and display can be cleaned with a soft cotton cloth dampened with clean water. DO NOT use any chemical-cleaning agents. Care should be taken to avoid scratching the surface of the display.

2.5.2 Display Backlight

The display backlight lamp is rated by the manufacturer as having a usable life of 20,000 hours. This life may be more or less than the rated time depending on the operating conditions of the 400W series unit. Over time, the backlight lamp may dim and the display may not perform as well in direct sunlight conditions. The user must determine by observation when the display brightness is not suitable for its intended use. Contact the Garmin factory repair station when the backlight lamp requires service.

2.5.3 Battery Replacement

The 400W series has an internal keep-alive battery that will last about 10 years. The battery is used for GPS system information. Regular planned replacement is not necessary. The 400W series will display a 'low battery' message when replacement is required. Once the low battery message is displayed, the battery should be replaced within 1 to 2 months.

If the battery is not replaced and becomes totally discharged, the 400W series unit will remain fully operational, but the GPS signal acquisition time may be increased. This acquisition time can be reduced by entering a new seed position each time the unit is powered on. There is no loss of function or accuracy of the 400W series unit with a dead battery.

The battery must be replaced by the Garmin factory repair station or factory authorized repair station.

2.6 Troubleshooting Information

If error indications are displayed on the 400W series unit, consult the Troubleshooting section contained in the 400W Series Installation Manual, listed under reference documentation in paragraph 2.1 of this

document. The '400W Series Post-Installation Checkout Log' in the aircraft permanent records includes the configuration information for the installation. (See Section 5 in the 400W Series Installation Manual for a sample Log).

2.7 Removal and Replacement Information

If the 400W series unit is removed and reinstalled, verify that the 400W series unit power-up self-test sequence is successfully completed and no failure messages are annunciated.

If the 400W series unit is removed for repair and reinstalled, or if the 400W unit is removed and replaced with a different 400W series unit, then follow 'Post Installation Configuration & Checkout Procedures' procedures contained in the 400W Series Installation Manual listed in paragraph 2.1 of this document, and verify the 400W unit power-up self-test sequence is successfully completed and no failure messages are annunciated.

If any work has been done on the aircraft that could affect the system wiring, antenna cable, or any interconnected equipment, verify the 400W series unit power-up self-test sequence is successfully completed and no failure messages are annunciated.

To remove the 400W series unit from the mounting rack, insert a 3/32-inch hex drive tool into the access hole at the bottom of the unit face. Rotate the hex tool counterclockwise until the unit is forced out about 3/8 inches and can be freely pulled from the rack.

The 400W unit is installed in the rack by sliding it straight in until it stops, about 1 inch short of the final position. Insert the hex drive tool into the access hole at the bottom of the unit face. Rotate the hex tool clockwise while pressing on the left side of the bezel until the unit is firmly seated in the rack.

Note: There are no special handling requirements for the 400W series units.

2.8 Diagrams

Refer to the 400W Series Installation Manual (listed under reference documentation in section 2.1 of this document) for drawings applicable to this installation. Point to point wiring diagrams are in Appendix H of the 400W Series Installation Manual. Refer to the GNS 400W Series Post-Installation Checkout Log retained in the aircraft permanent for a list of the interfaced equipment. The antenna cables are routed between the 400W series unit and the antenna with disconnects at each unit. The antenna cable typically is routed behind interior panels in the fuselage.

2.9 Special Inspection Requirements

None, N/A.

2.10 Application of Protective Treatments

None, N/A.

2.11 Data Relative to Structural Fasteners

None, N/A.

2.12 Special Tools

No special tools are required for system checkout. See 400W Series Installation Manual listed in reference documentation in section 2.1 of this document.

2.13 Additional Instructions

None

2.14 Overhaul Period

The system does not require overhaul at a specific time period. Power on self-test and continuous BIT will monitor the health of the 400W series unit. If the unit indicates an internal failure, the unit may be removed and replaced. See troubleshooting section contained in the 400W Series Installation Manual, listed under reference documentation in paragraph 2.1 of this document.

2.15 ICA Revision and Distribution

To revise this ICA, a letter must be submitted to the ACO along with the revised ICA. The ACO will obtain AEG acceptance, and approve any revision to the Airworthiness Limitations Section 1.4. After FAA acceptance/approval, Garmin will release the revised ICA for customer use, and provide any required notification of the revision.

The latest revision of this document will be available on the Garmin website (www.garmin.com). A Garmin Service Bulletin, describing ICA revision, will be sent to dealers if revision is determined to be significant.

2.16 Assistance

Flight Standards Inspectors or the certificate holder's PMI have the required resources to respond to questions regarding this ICA. In addition, the customer may refer questions regarding this equipment and its installation to the manufacturer, Garmin. Garmin customer assistance may be contacted during normal business hours via telephone 913-397-8200 or email from the Garmin web site at www.garmin.com.

2.17 Implementation and Record Keeping

Modification of an aircraft by this Supplemental Type Certificate obligates the aircraft operator to include the maintenance information provided by this document in the operator's aircraft maintenance manual and/or the operator's aircraft scheduled maintenance program.

700-00006-XXX-() PFD & 700-00011-XXX-() Magnetometer/OAT Sensor Assembly Instructions for Continued Airworthiness- Cirrus SR22

Avidyne
CORPORATION

55 Old Bedford Road
Lincoln, MA 01773

Document Number	AVPFD-007	***Control Category***	CC2
Revision	***Description***	***ECO***	***Date***
00	Initial Release	02-282	10/29/02
01	Added Access panel call out(Ref: FAA Memo 11/7/02). Changed source of assistance to Avidyne (Ref FAA memo 11/7/02) Added step 11 to section 7.5.4.1 Corrected procedure in section 7.5.3.2	02-340	12/31/03
02	Modified procedure in section 7.5.4.1.	03-026	1/21/03
03	Modified Magnetometer Calibration procedure	03-047	2/3/03

Table of Contents

1. Introduction

1.1 Aircraft Description

Make: Cirrus Design Corporation

Model: SR22

1.2 Scope

This document identifies the Instructions For Continued Airworthiness (ICA) for the modification of the above aircraft by installation of an Avidyne 700-00006-XXX-() Primary Flight Display (PFD) and 700-00011-XXX-() Magnetometer/OAT Sensor Assembly.

This ICA satisfies the requirements of 14 CFR 23.1529.

1.3 Applicability

Applies to aircraft altered by the installation of an Avidyne 700-00006-XXX-() Primary Flight Display and 700-00011-XXX-() Magnetometer/OAT Sensor Assembly.

1.4 Definitions and Abbreviations

ICA - Instructions for Continued Airworthiness

STC - Supplemental Type Certificate

PFD - Primary Flight Display

AEG - Aircraft Evaluation Group

LSK - Line Select Key

1.5 Precautions

This section not applicable.

1.6 Units of Measure

This section not applicable.

1.7 Referenced Publications

Avidyne 700-00006-XXX-() PFD Installation Manual, P/N 600-00080-000

FlightMax Entegra Series PFD Pilot's Guide, P/N 600-00081-000

FAA Approved Airplane Flight Manual Supplement, P/N 600-00086-000

1.8 Distribution

This Instructions For Continued Airworthiness is to be furnished to the owner of an aircraft modified in accordance with this STC, and is to become part of the permanent aircraft record.

Changes to this ICA shall be provided to Cirrus Design Corporation, who will distribute them to the owners of aircraft modified in accordance with this STC.

A current revision of this ICA shall be available on the Avidyne website at www.avidyne.com (Technical Publications in the Products section).

2. Description of Alteration

The modification of the Cirrus Design Corporation Model SR22 aircraft in accordance with this Supplemental Type Certificate, STO9722BO-A, involves the replacement of the following equipment and installation of an Avidyne 700-00006-XXX-() PFD and 700-00011-XXX-() Magnetometer/OAT Sensor .

- HSI
- Vertical Speed Indicator
- VOR/LOC Indicator
- Altitude Alerter
- OAT/Clock Indicator
- Flux Valve

The Avidyne PFD is a primary flight display with a 10.4-inch LCD as shown in Figure 1. The PFD is capable of receiving data from a pair of GPS Nav/Comm systems, and autopilot.

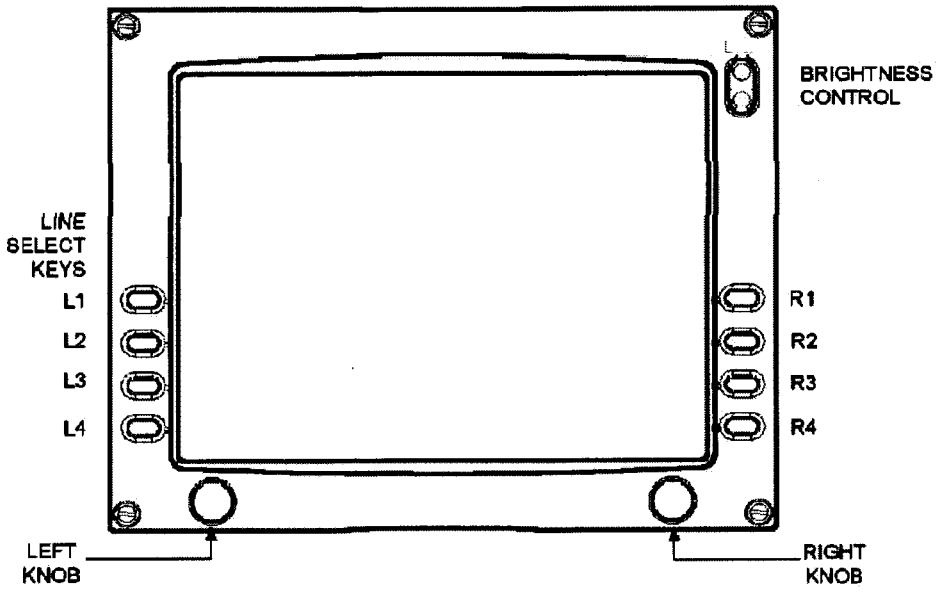
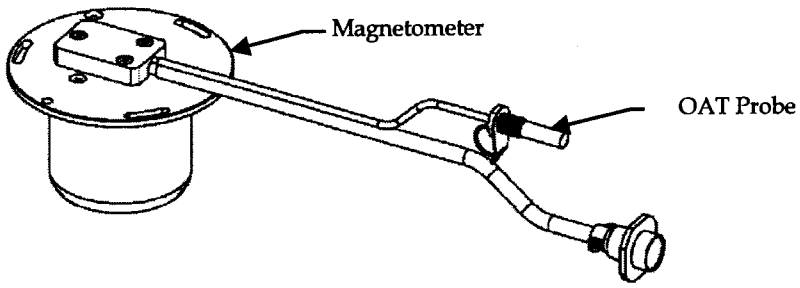


Figure 1 - Avidyne 700-00006-XXX-() PFD

The 700-00011-XXX-() Magnetometer/OAT Sensor Assembly provide magnetic heading and outside air temperature information to the PFD for display(optional) and computations. Figure 2 depicts the sensor assembly.

Figure 2 - Avidyne 700-00011-XXX-() Magnetometer/OAT Sensor Assembly



A block diagram of the PFD interfaced in a fully equipped Cirrus SR22 aircraft is presented in Figure 3.

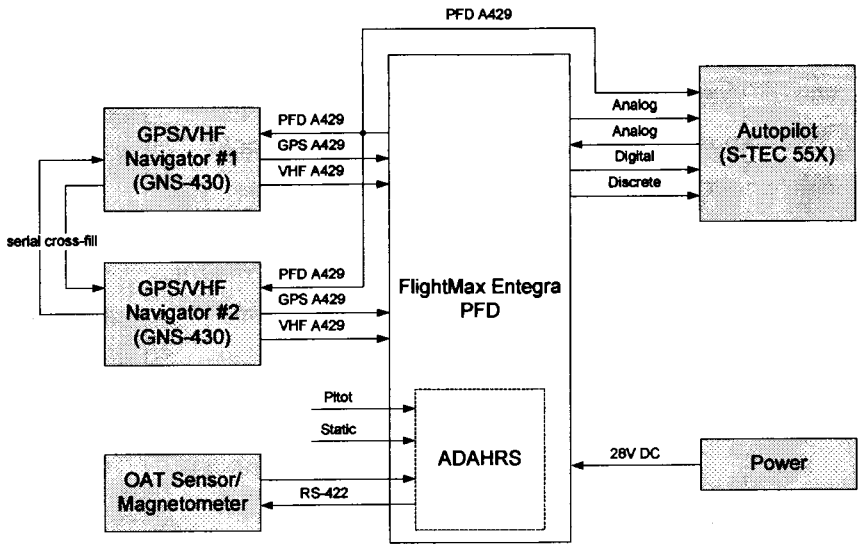


Figure 3 - Avidyne PFD System Block Diagram

3. Control and operation information

The PFD operation is controlled through 8 bezel keys, 2 rotary knobs, and a rocker switch. Both the right and left knob's function is defined by the particular page that is currently selected, and is appropriately labeled on the LCD above the knob.

The rocker switch located in the top right corner of the bezel controls the display brightness, which is adjusted manually by pushing the top portion of the switch to increase intensity and pushing the bottom portion of the switch to decrease intensity.

The functionality of the 8 bezel keys is defined by the page that is currently displayed, and are labeled accordingly on the LCD adjacent to the key.

Refer to the FlightMax Entegra PFD Pilot's Guide, P/N 600-00081-000 for more detail on PFD operation.

4. Servicing information

This section not applicable.

5. Maintenance Instructions

Other than the periodic servicing task discussed below, maintenance of the Avidyne 700-00006-XXX-() PFD and 700-00011-XXX-() Magnetometer/OAT Sensor Assembly is based on condition only; no other periodic maintenance is required.

5.1 Recommended periodic scheduled servicing tasks

An altimeter accuracy check is required every 24 months.

A compass swing is required to be performed every 24 months. This check will result in a re-calibration of the magnetometer system.

6. Troubleshooting Information

Trouble - Attitude Display	**Probable Cause**	**Remedy**
Pitch ladder and Horizon removed and replaced with red X	PFD AHRS failure	Replace PFD
Trouble - Altitude, Airspeed, Vertical Velocity Display	**Probable Cause**	**Remedy**
Instruments removed and replaced with red X	PFD Air Data Computer failure	Replace PFD
Trouble - Heading	**Probable Cause**	**Remedy**
Heading indication removed and replaced with red X	Break in wire between PFD and Magnetometer	Test and repair wiring.
	Magnetometer failed	Replace Magnetometer/OAT Assembly
	PFD RS-422 or Magnetometer output power failure	Replace PFD
Excessive heading error	Magnetometer not properly calibrated	Calibrate Magnetometer
Trouble - OAT (Option)	**Probable Cause**	**Remedy**
Display indicates red dashes	OAT probe failed	Replace Magnetometer/OAT Assembly
Excessive temperature error	OAT probe failed	Replace Magnetometer/OAT Assembly
Trouble - True Airspeed	**Probable Cause**	**Remedy**
Display indicates red dashes	OAT probe failed	Replace Magnetometer/OAT Assembly
Trouble - VHF/GPS NAV 1	**Probable Cause**	**Remedy**
PFD Primary Nav, Bearing, or Auxiliary indication displays	VHF/GPS NAV 1 not configured properly	Configure unit

dashes when GPS 1 or VLOC 1 selected	Break in wire between PFD and VHF/GPS NAV 1	Test and repair wiring
	VHF/GPS NAV 1 ARINC 429 Output failed	Replace VHF/GPS NAV 1
	PFD ARINC 429 input failed	Replace PFD
GPS1 does not slave to PFD course pointer in OBS mode	Break in ARINC 429 wire between PFD and GPS NAV 1	Test and repair wire
	ARINC 429 Receive Input failed	Replace VHF/GPS NAV 1
	ARINC 429 Transmit output failed	Replace PFD
Trouble - VHF/GPS NAV 2	**Probable Cause**	**Remedy**
PFD Primary Nav, Bearing, or Auxiliary indication displays dashes when GPS 2 or VLOC 2 selected	VHF/GPS NAV 2 not configured properly	Configure unit
	Break in wire between PFD and VHF/GPS NAV 2	Test and repair wiring
	VHF/GPS NAV 2 ARINC 429 Output failed	Replace VHF/GPS NAV 2
	PFD ARINC 429 input failed	Replace PFD
Trouble - Autopilot Integration	**Probable Cause**	**Remedy**
Airspeed, Heading, or Altitude bugs do not "fill" but autopilot modes still engage.	Break in Annunciator wires between PFD and AP Computer	Test and repair wiring
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit
Autopilot VS mode does not track PFD Vertical Speed setting, but autopilot mode engages.	Break in VS Command wires between PFD and Autopilot Computer	Test and repair wiring
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit
Autopilot HDG mode does not track PFD Heading setting, but autopilot mode engages.	Break in Heading Datum wire between PFD and Autopilot Computer	Test and repair wiring

Autopilot HDG mode does not track PFD Heading setting, but autopilot mode engages (con.)	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit
	PFD heading bug out of alignment	Perform PFD heading bug calibration
Autopilot NAV mode does not track PFD Nav Course Pointer setting or CDI.	Break in Course Datum and Cross track wires between PFD and Autopilot Computer	Test and repair wiring
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit
	Autopilot out of alignment	Perform autopilot alignment in NAV mode
Autopilot NAV annunciator flashes and FAIL indication appears	Break in CDI Flag wire between PFD and Autopilot Computer	Test and repair wiring
	Autopilot Computer interface failure	Replace unit
	VHF/GPS NAV 1 or 2 Nav data invalid	Refer to VHF/GPS NAV 1 & 2 Troubleshooting procedure
	PFD interface failure	Replace unit
Autopilot APR mode does not track PFD CDI or VDI.	Break in CDI and VDI wires between PFD and Autopilot Computer	Test and repair wiring
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit
Autopilot APR mode fails to engage	Break in Glideslope flag or LOC Switch wires between PFD and Autopilot Computer	Test and repair wiring
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit

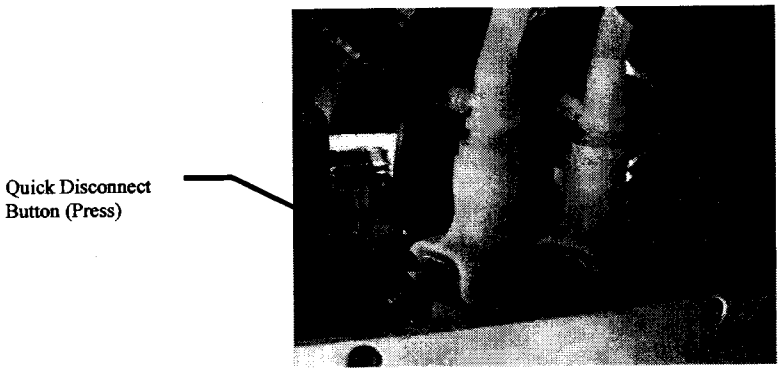
Autopilot Computer display indicates vertical speed value	Break in ALT Select wire between PFD and Autopilot	Test and repair wiring
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit
Autopilot GPSS mode fails to engage	Break in PFD ARINC 429 Transmit or Autopilot Relay Control wire	Test and repair wiring
	Autopilot Relay failure	Replace relay
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit
Autopilot GPSS only follows GPS 1 source	Break in Autopilot Relay Control wire	Test and repair wire
	Autopilot Relay failure	Replace relay
	Autopilot Computer interface failure	Replace unit
	PFD interface failure	Replace unit

7. Removal and Replacement Information

7.1 Primary Flight Display Removal

Remove the Avidyne PFD from the instrument panel by turning four corner-mounted flat head screw fasteners counter-clockwise and pulling the unit away from instrument panel. Remove the pitot-static hoses via the quick disconnects by pressing on the quick release button (see Figure 4). Remove Connectors (P730, P732, P733) located on the back of PFD by turning the two jackscrews counter-clockwise.

Figure 4 - PFD Pitot-Static Quick Disconnects



7.2 Primary Flight Display Installation

To install the PFD, it is recommended that the MFD be removed to allow easier access to the back of the PFD during installation. Secure the connectors onto the PFD and tighten the jackscrews. Connect the pitot-static connectors. Rest the PFD on the edge of the instrument panel cutout and assure that the service loop of the PFD cables is routed away from any moving parts behind the instrument panel. Hold the PFD as shown in Figure 5 and lift up on the edge of the rear of the PFD, while simultaneously pushing the upper edge of the PFD under the glare shield. Ensure the PFD mating clip slides over the horizontal support bracket approximately 8 inches behind the instrument panel (see Figures 6 and 7) and locate the PFD bezel against the instrument panel. Secure the PFD to the instrument panel by turning four corner-mounted flat head screw fasteners clockwise.

Upon reinstallation, a functional check should be performed in accordance with the System Setup and Checkout procedures detailed in Section 7.3.

Figure 5 – PFD Handling When Installing

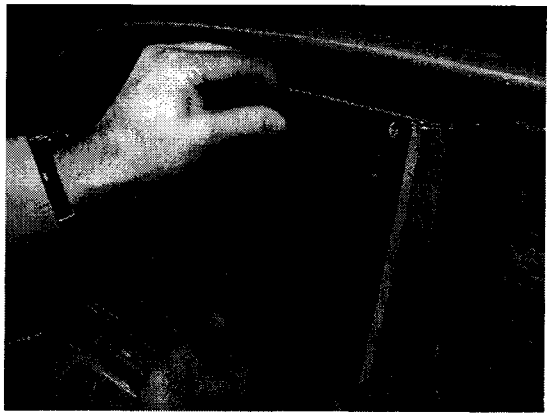


Figure 6 – PFD Horizontal Support Bracket

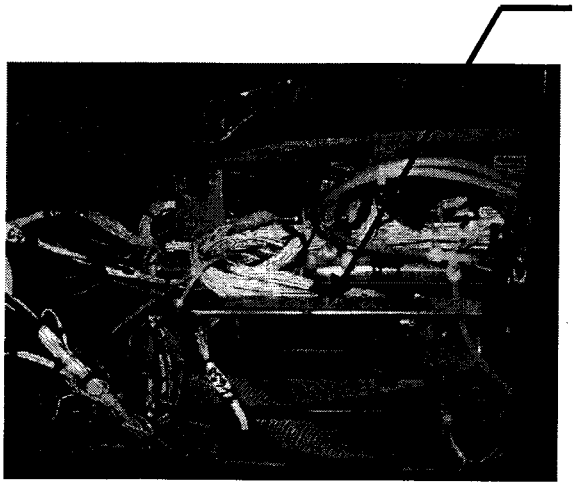
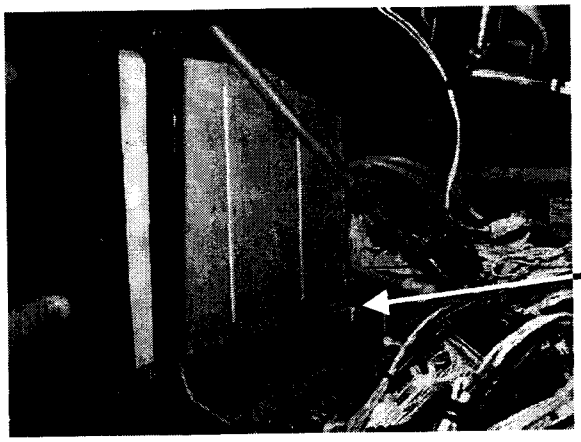


Figure 7 – PFD Sliding Over Horizontal Support Bracket



7.3 Magnetometer/OAT Sensor Assembly Installation

CAUTION: Ensure Magnetometer is installed with arrow and letters FWD pointing forward.

1. Unfasten Access plate RW 14 located outboard under the right wing.
2. Position Magnetometer to standoffs and attach with washers and screws.
3. Connect connector assembly.
4. Secure connector assembly to tie down with cable tie.
5. Insert OAT probe through RW 14 access plate and secure with washers and nut.
6. Secure RW 14 access plate to aircraft
7. Perform Magnetometer Calibration procedure defined in section 7.5.4.2.

7.4 Magnetometer/OAT Sensor Assembly Removal

1. Ensure BAT 1, BAT 2, and AVIONICS master switches are in off position.
2. Pull PFD circuit breakers
3. Remove OAT probe nut.
4. Remove wing access panel.
5. Remove screws and washers securing the Magnetometer to standoffs.

6. Cut cable tie securing Magnetometer connector assembly to tie down and remove Magnetometer/OAT Sensor Assembly from airplane.

7.5 System Setup and Checkout

Any time the Avidyne PFD or Magnetometer/OAT Sensor Assembly is replaced with another unit, these system setup procedures should be performed to assure that the unit is properly configured for the installation.

Turn on the PFD by applying power to the aircraft. Allow the PFD to initialize. This will take approximately 3 minutes.

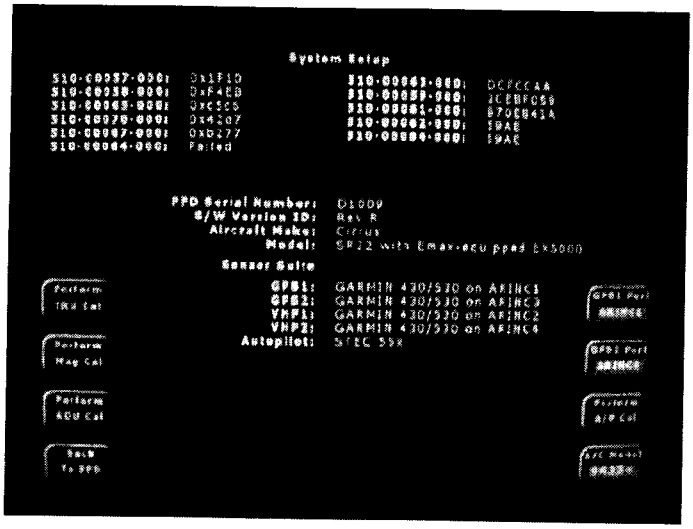
7.5.1 System Setup Page Access

Apply power to all the sensors that interface with the PFD, including: the GPS and the autopilot. System Setup Page will allow you to configure the PFD. The System Setup Page can only be accessed by pressing the line select keys in a specific manner.

The System Setup Page is accessible as follows:

1. Turn on the PFD by applying power to the aircraft via the battery switches.
2. The system will begin its normal start up sequence.
3. Simultaneously press and hold the top left (L1), and 3rd down from the top left (L3) Line Select keys for until the count down timer in the lower left corner of the display indicates zero seconds.
4. At the end of a displayed countdown clock adjacent to the L4 line select key, the System Setup Page will appear (See Figure 8).

Figure 8 – System Setup Page (Example)



7.5.2 GNS-430 Nav/Com Setup

7.5.2.1 PFD Unit

The ARINC 429 ports on the PFD come hard-wired and pre-assigned. GNS-430 Unit #1 (top unit in radio rack) must be connected to ARINC port 1 (GPS output line) and port 2 (VLOC output line). GNS-430 Unit #2 (if installed) must be connected to ARINC port 3 (GPS output line) and port 4 (VLOC output line). Use the line select keys R1, R2 to configure the PFD in the following manner:

Line Select Key (**LSK**) R1: GPS1 Port: ARINC 1;

LSK R1: GPS1 Port: NONE, if GNS-430 No.1 not installed;

LSK R2: GPS2 Port: ARINC 3, if GNS-430 No.2 installed;

LSK R2: GPS2 Port: NONE, if GNS-430 No. 2 not installed.

Once complete, verify the displayed configuration in the sensor suite section of the System Setup page accurately reflects actual configuration.

7.5.2.2 GNS-430 Unit(s)

NOTE: Refer to the GNS 430 users guide for GNS 430 detailed operations.

Place the GNS 430 unit(s) into Maintenance Mode via the following steps:

1. Ensure GNS 430 unit(s) off
2. Depress the "ENT" button as the power to the GNS 430 unit(s) is applied. Continue to depress the ENTR button until the GNS 430 self -test is completed.
3. Depress the ENT button twice to display the "MAIN ARINC 429 CONFIG" page. Configure the GNS 430 unit(s) to have the following mandatory settings:

Main ARINC 429 Configuration Page

IN 1	**Low, Sandel EHSI**	**Low, Sandel EHSI**
IN 2	**Low, OFF**	**Low, OFF**
Out	**Low, GAMA 429 Graphics**	**Low, GAMA 429 Graphics**
SDI	**LNAV1**	**LNAV2**

4. Turn the right inner knob until the "MAIN RS232 CONFIG" page is displayed.
5. Configure the GNS 430 unit(s) to have the following mandatory settings:

Main RS232 Configuration Page

CHNL 1	Off (1)	Aviation	Off (1)	Aviation
CHNL 2	Off (1)	Off (1)	Off (1)	Off (1)
CHNL 3	Crossfill	Crossfill	Off (1)	Off (1)
CHNL 4	Off (1)	Off (1)	Off (1)	Off (1)

(1) Unless other equipment installed (i.e., Stormscope)

6. Turn the right inner knob until the "MAIN INPUTS 2" page is displayed. Verify CDI = "GPS"

7. Turn the right inner knob until the "MAIN DISCRETE OUTPUTS" page is displayed. Verify Discrete Toggle = "APR"

8. Turn the right inner knob until the "VOR/LOC/GS ARINC 429 CONFIG" page is displayed

Configure the GNS 430 unit(s) to have the following mandatory settings:

VOR/LOC/GS ARINC 429 Configuration Page

Speed	**Low - Low**	**Low - Low**
IN 2	**VOR/ILS1**	**VOR/ILS2**
DME Mode	**Directed Freq. 1**	**Directed Freq. 2**

7.5.3 *Autopilot Setup*

7.5.3.1 *PFD Unit*

The following steps shall be performed when replacing a PFD.

1. Enter the System Setup Page (see section 7.5.1) and press the line select key R3, labeled "Perform A/P Cal" and depress line select key R1 " A/P Type" to select the appropriate autopilot.

2. Select line select key L4 labeled "Back to PFD" and reenter the System Setup Page. Verify the displayed autopilot configuration in the sensor suite section of the System Setup page accurately reflects actual configuration.

7.5.3.2 *Autopilot Unit*

The following steps shall be performed when replacing the PFD or Autopilot unit.

If the autopilot installed in the aircraft is an S-Tec System 55x, ensure it is configured as a KCS-55 compatible unit. Refer to the S-Tec System 55x Installation Manual for details.

Note: The following steps are to be performed in-flight in smooth air

1. While NAV (without GPSS) mode is engaged on the System 55x, using a GNS-430 GPS source, insert an appropriately sized screwdriver into the slotted hole to perform the alignment procedures in accordance with the System 55x Installation Manual.
2. Engage the 55x in HDG mode and allow aircraft to "settle on heading bug" (If heading bug agrees with aircraft heading stop procedure here, other wise continue calibration steps below).
3. Turn both GNS-430 units off.
4. Enter the PFD System Setup Page (See section 7.5.1).
5. Turn both GNS-430's units back on.
6. Select "Perform A/P Cal".
7. Select "Sync HDG". Autopilot should immediately command the aircraft to turn toward the heading bug.
8. Select "Back to PFD".

9. Verify HDG mode accurately tracks heading bug.
10. Engage NAV (without GPSS) mode on the autopilot.
11. Verify NAV mode accurately tracks flight plan (Flight plan or waypoint will need to be entered).
12. A/P calibration is complete.

Note: If autopilot does not track the heading bug or NAV mode correctly repeat steps in this procedure.

7.5.4 PFD System Calibrations

The PFD and Magnetometer require calibrations upon initial installation, when replaced, or bi-annual periodic inspection. The following two aircraft level calibration procedures are listed below:

Calibration	When Performed	Notes	Periodic Calibration
IRU	Initial installation and replacement	Must be performed first upon initial installation with Magnetometer	None
Magnetometer	Initial installation, replacement, PFD replacement, or bi-annual inspection	Must be performed after IRU calibration upon initial installation or PFD replacement	Every 24 months

Note: The IRU calibration must be completed prior to the Magnetometer calibration

7.5.4.1 IRU Calibration Procedure

Approximate duration: Approximately 15 Minutes.

Required Equipment: Digital Level, Resolution: 0.25 °, Accuracy: +/- 0.25 °.

Recommended Personnel: One avionics technician.

Procedure:

1. Avionics power applied.
2. Allow the PFD to align (approximately 3 minutes) until the ADAHRS countdown timer expires and the Gyro Warm-up box is removed.
3. Wait in the aligned state for an additional 10 minutes.

4. Enter System Setup mode on the PFD by following steps 1 through 4 in section 7.5.1. See Figure 8.

5. Press the IRU Install line select key (L2).

Note that IRU Installation page is displayed (see Figure 9).

6. Place a level 2X4-like piece of wood between the two door jams, or place an inclinometer on top of the engine block, aligned to display roll angle.

7. Place a digital level on the door jam of the airplane.

8. Follow the directions on the IRU installation page.

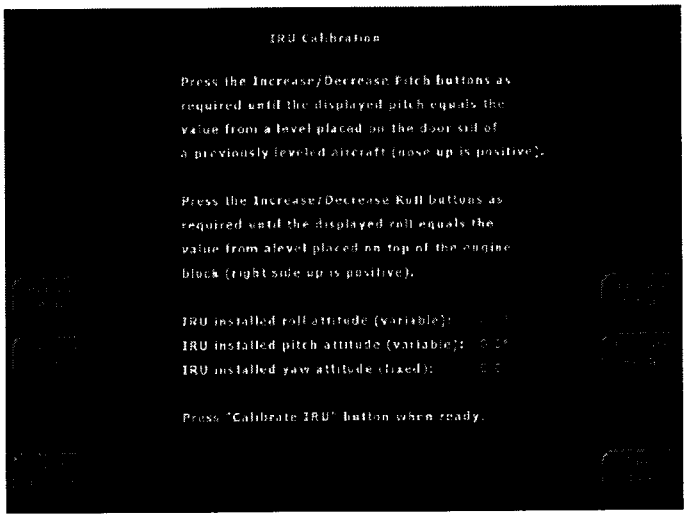
Note: The only two axis that are changed via installation calibration input is the pitch axis and roll axis.

Note: The pitch attitude as determined by the digital level should have a resolution of at least 1/4 degree. This applies to the roll axis also.

9. Press the Install IRU line select key (R4) when proper pitch and roll is displayed.

10. After the display indicates the IRU calibration is done, cycle power on the PFD in order for the IRU calibration to take effect.

Figure 9. IRU Installation Page.



7.5.4.2 Magnetometer Calibration Procedure

Approximate duration: 20 minutes (assuming airplane is free to rotate 360 degrees without magnetic disturbances).

Required equipment: Installed PFD.
Installed magnetometer.
Compass: Resolution: 1 °, Accuracy: +/- 1 °.

Recommended personnel: 2 avionics technicians (one in the cockpit to push required bezel buttons, one on the wing to push the aircraft to new headings).

Procedure:

Note: Ensure the IRU install calibration procedure has been completed.

1. Airplane doors closed.
2. Flaps in retracted position.
3. Engine off.
4. Airplane in level flight attitude.
5. Install the compass onto the top surface of the left tail surface.
6. Position lubber line to be parallel with longitudinal axis of the airplane.
7. Position marine compass to be approximately ½ chord length back from leading edge of tail and 43 inches outboard from fuselage.
8. Battery 1, 2 master switch in ON position. (Consider attaching an external power cart until ready for step 11.) PFD may already be on and aligned from IRU install. If so, skip to step 11. All other aircraft equipment shall be operating.
9. Allow the PFD to align (approximately 3 minutes) until the ADAHRS countdown timer expires and is removed from the HSI.
10. Wait in the aligned state for an additional 10 minutes.
11. Enter System Setup mode on the PFD by following steps 1 through 4 in section 7.3.1. See Figure 8.
12. Press the Perform Mag Cal line select key (L1).

Note that the Magnetometer Calibration page is displayed (see Figure 10).

13. Align centerline of airplane on magnetic north heading as indicated by tail mounted compass by pushing the aircraft as required. Ensure this is being done clear of magnetic disturbances in the pavement or immediate vicinity.

14. Follow the directions on the Magnetometer Calibration page (press the Calibrate Heading button and wait until "Done" is displayed).

15. Align centerline to airplane on consecutive 30° headings as indicated by the tail-mounted compass by pushing the aircraft as required and continue following the directions of the Magnetometer Calibration page until complete (See Figures 10 and 11).

Figure 10. Initial Magnetometer Calibration Page.

Figure 11. Final Magnetometer Calibration Page.

Note: Pressing (R3) "Redo Previous" provides an "undo" capability.

Note: Aborting the calibration process (i.e., by exiting the Magnetometer Calibration Page or shutting off power to the PFD) prior to completion will result in the loss of stored calibration parameters. Restarting the calibration process over from the beginning will be required.

16. Press the "Back to PFD" line select key (L4) when complete.

17. Align the centerline of the airplane with consecutive 90° headings as indicated on the tail-mounted magnetic compass and verify the accuracy of the PFD heading display is within +/- 4 ° of the tail mounted magnetic compass.

18. Calibration complete.

7.5.5 Post Installation Check

7.5.5.1 Lighting Check

Rotate the "INST" instrument lighting control rheostat through its full range of motion. Ensure the PFD LED lights around all bezel keys and knobs come on and match the MFD LED lighting.

7.5.5.2 GPS NAV-COMM Check

Note: This procedure assumes both GNS-430's are installed.

1. PFD Nav Button- Ensure GPS1 displayed. Observe that the GNS-430 No. 1 CDI button label displays GPS.

2. GNS-430 No. 1 CDI button- Press once and observe CDI button displays VLOC label. Observe the PFD Nav button changes to VLOC1.

3. GNS-430 No.1 CDI button- Press once and observe the CDI button label displays GPS. Note that the PFD Nav button changes to GPS1.
4. PFD Nav button- Press once and observe VLOC1 is displayed. Observe the GNS-430 No. 1 CDI button changes to VLOC.
5. PFD Nav button- Press once and note GPS2 is displayed. Observe the GNS-430 no. 2 CDI button displays GPS.
6. GNS-430 No. 2 CDI button- Press once and observe the CDI button label displays VLOC. Observe the PFD Nav button changes to VLOC2.
7. GNS-430 No. 2 CDI button- Press once and observe the CDI button label displays GPS. Observe the PFD Nav button changes to GPS2.
8. PFD Nav button- Press once and observe VLOC2 is displayed. Observe the GNS-430 No. 2 CDI button changes to VLOC.

Note: Two-way communication between the PFD and both GNS-430 units has just been demonstrated.

7.5.5.3 *Pitot-Static Leak Check*

The pitot-static leak check shall be performed anytime time the pitot-static ports are disconnected from the PFD. The pitot-static leak check shall be performed in accordance with section 34.10 of the SR-22 Aircraft Maintenance Manual.

8. Special Inspection Requirements

This section not applicable.

9. Application of Protective Treatments

This section not applicable.

10. Data

This section not applicable.

11. List of Special Tools

1. Marine compass, Resolution: 1 °, Accuracy: +/- 1 °
2. Digital level, Resolution: 0.25 °, Accuracy: +/- 0.25 °.

12. For Commuter Category Aircraft

This section not applicable.

13. Recommended Overhaul Periods

This section not applicable.

14. Airworthiness Limitation Section

The Airworthiness Limitations section is FAA approved and specifies maintenance required under §43.16 and §91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

There are no additional airworthiness limitations as a result of this modification.

15. Revision

Revisions to this document shall be coordinated through the Boston Aircraft Certification Office, the Kansas City AEG, and the STC holder.

16. Assistance

For questions or assistance regarding this ICA, contact Avidyne Corporation.

17. Implementation and Record Keeping

This ICA is to be made part of the applicable section 91.409 or 135.419 aircraft inspection program for this aircraft.

700-000XX-XXX-() Multi-function Display

Instructions for Continued Airworthiness

Part 23, Class I & II Installations

AVIDYNE
CORPORATION

55 Old Bedford Road
Lincoln, MA 01773

Document Number	AVMFD-167	Control Category	N/A
Revision	**Description**	**ECO**	**Date**
00	Initial Release	03-244	09/24/03
01	FAA AEG comments (Section 6)	03-273	11/17/03
02	Added STC # & Engine Setup section from the install manual	ECO-04-010	01/23/04
03	Added instructions for hour meter function and PA-28 specific information	ECO-04-117	07/07/04
04	Added part numbers for PA-46	ECO-05-058	04/01/05
05	Update for Block 41	ECO-05-157	9/15/05
06	Update for Release 7.0	ECO-07-261	08/08/07

Table of Contents

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List of Tables

1. Introduction

1.1 Aircraft Description

Make: Various

Model: Various

Make and models as listed in Avidyne Document, AVMFD-163, *700-00004-0XX MFD Approved Model List STC #SA00191BO.*

1.2 Scope

This document identifies the Instructions for Continued Airworthiness for the above referenced aircraft modified to include installation of an Avidyne 700-00004-0XX, 700-00004-1XX, or 700-00030-0XX Multi-Function Displays (MFD).

This ICA satisfies the requirements of 14 CFR 23.1529.

1.3 Applicability

Applies to aircraft altered by the installation of an Avidyne 700-00004-0XX, 700-00004-1XX, or 700-00030-0XX Multi-Function Displays.

1.4 Definitions and Abbreviations

ICA – Instructions for Continued Airworthiness

STC – Supplemental Type Certificate

MFD – Multi-function Display

AEG – Aircraft Evaluation Group

CMOS – Complementary Metal Oxide Semiconductor

1.5 Precautions

This section is not applicable.

1.6 Units of Measure

This section is not applicable.

1.7 Referenced Publications

Document Number	Title
600-00073	Entegra and Envision Installation Manual 700-00004-() and 700-00030-() Model EX5000 Series MFD
600-00102-000	Entegra EX5000 Columbia 350, 400 Multi-Function Display Pilot's Guide
600-00105-000	Entegra EX5000 Piper PA28, PA32, PA44 Multi-Function Display Pilot's Guide
600-00108-000	Entegra EX5000C Cirrus SR20 and SR22 Multi-Function Display Pilot's Guide
600-00108-002	Entegra EX5000C Cirrus SR20, SR22, and SR22 with Thielert Engine Multi-Function Display Pilot's Guide
600-00121-000	Entegra EX5000 Piper PA34, PA46 Multi-Function Display Pilot's Guide
600-00132-000	Entegra EX5000 Adam A500 Multi-Function Display Pilot's Guide

Document Number	Title
600-00132-001	Entegra EX5000 Adam A500 Multi-Function Display with Engine Instruments Pilot's Guide
600-00144-000	Multi-Function Display Checklist Editor – User's Guide
600-00151-000	Envision EX5000 Multi-Function Display Pilot's Guide
600-00151-504	Envision EX5000 Portrait Multi-Function Display Pilot's Guide
600-00152-000	Envision EX5000 Radar-Capable Multi-Function Display

1.8 Distribution

These Instructions for Continued Airworthiness are to be furnished to the owner of an aircraft modified in accordance with this STC, and is to become part of the permanent aircraft record.

A current revision of this ICA shall be available on the Avidyne website at www.avidyne.com (Technical Publications).

2. Description

The Avidyne 700-00004-0XX (2-knob landscape as shown in Figure 1), 700-00004-1XX (2-knob portrait), and 700-00030-0XX (4-knob landscape) MFD's are panel mounted 10.4-inch diagonal situational awareness displays.

The MFD provides the following display capabilities:

1. Moving Map
2. Traffic
3. Lightning
4. FMS-supplied Flight Plan
5. Obstacles
6. Datalink Weather (optional)
7. Engine Instruments (optional)
8. Outside Air Temperature (optional)
9. Recorded Engine Time (PA28 only)
10. Radar (optional, PA46 only)

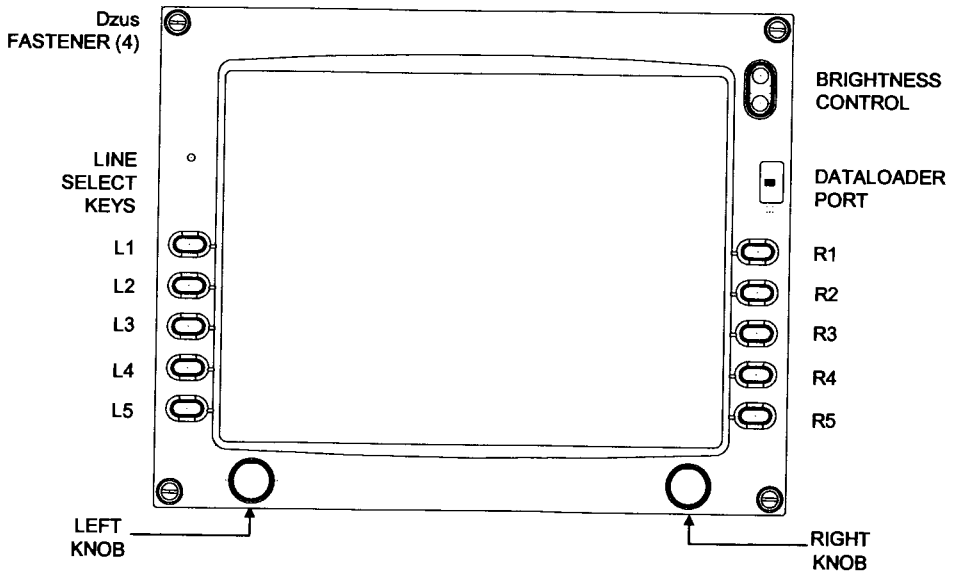

Figure 1. Avidyne 700-00004-0XX MFD

A typical block diagram of the Avidyne MFD interfaced in a fully equipped aircraft is presented in Figure 2.

Any particular installation may or may not incorporate certain external sensors.

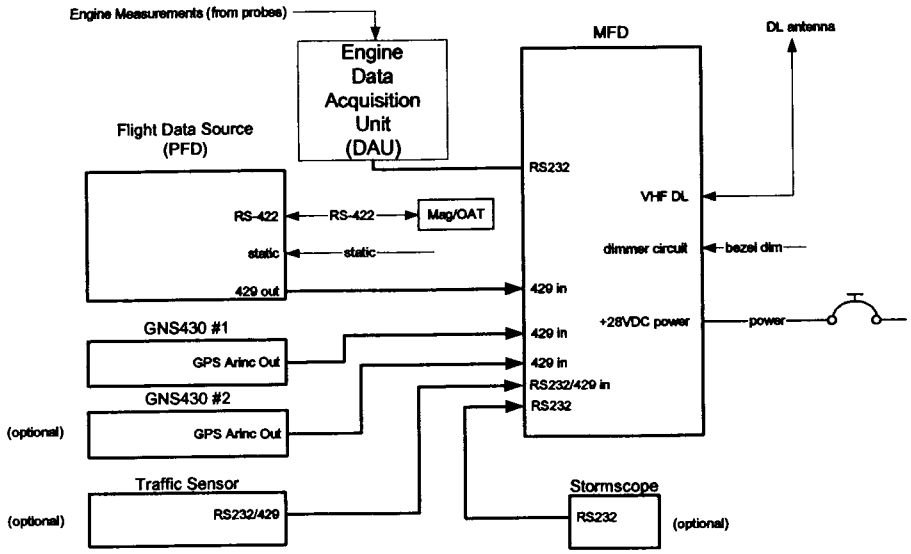

Figure 2 Avidyne MFD installation

3. Control, Operation Information

The MFD operation is controlled through 10 bezel keys, two or four rotary knobs, and a rocker switch. The knob or the right outer knob, for the PA46 aircraft, selects the desired page, which is identified on the LCD above the knob. The particular page that is currently selected defines the function of the right knob or the right inner knob on the PA46 aircraft. The knob is appropriately labeled on the LCD above the knob.

The rocker switch located in the top right corner of the bezel controls the display brightness, which is adjusted manually by pushing the top portion of the switch to increase intensity and pushing the bottom portion of the switch to decrease intensity. A pop-up window that presents the percentage of full intensity, along with a bar graph representation, indicates the intensity setting of the display.

The functionality of the 10 bezel keys is defined by the page that is currently displayed, and are labeled accordingly on the LCD adjacent to the key.

Refer to the particular FlightMax EX5000 Pilot's Guide for more detail on MFD operation.

4. Servicing information

This section is not applicable.

5. Maintenance Instructions

Other than the periodic servicing task discussed below, maintenance of the Avidyne 700-00004-0XX, 700-00004-1XX, and 700-00030-0XX MFDs is based on condition only; no other periodic maintenance is required.

5.1 Cleaning Cover Screen

If the MFD cover screen should become dirty due to fingerprints, dust, etc., the following materials and methods can be used to safely clean the screen.

- A soft lint free cloth
- Cleaning solution such as Optimax brand cleaner or water if Optimax is not available
- ALWAYS apply cleaning solution directly to the cloth and NEVER directly to the screen
- NEVER use products that contain ammonia, alcohol, acetone, ethyl alcohol, ethyl acid, methyl chloride etc.

CAUTION: Using products with ammonia or other harmful ingredients or materials could void the warranty.

NOTE: The cover screen is not glass, the surface is made of a soft film that is vulnerable to scratches, damage by a sharp articles or improper cleaners. Use care when cleaning.

5.2 Recommended Periodic Scheduled Servicing Tasks

The Avidyne 700-00004-0XX, 700-00004-1XX, and 700-00030-0XX MFDs contain a 3-volt lithium battery that maintains CMOS memory on an internal processor board and should be replaced after 10 years of service, or when CMOS memory fails to retain configuration data, whichever occurs first. The Avidyne MFD must be returned to an authorized FAA repair station to perform this maintenance function. Failure of the CMOS memory is indicated by the message "WARNING: CMOS battery failure. Check database expiration date. Press any bezel key to continue." on a blue background prior to system boot up. After system boot up, the MFD will function normally, but will not have retained the system date and time. If the system is interfaced to the GNS 430 through ARINC 429, it will acquire current date and time from the GNS 430 when valid satellite data is received.

6. Troubleshooting Information

The Avidyne MFD incorporates a message bar located at the bottom of the display. Messages are generated by the system and displayed on the message bar and are helpful in troubleshooting system problems. Tables 1-4 present typical messages that are generated by application software fro various interfaces.

Note: For troubleshooting instructions recommending wiring checks, refer to the Avidyne document, **Error! Reference source not found., Error! Reference source not found.** for wiring diagram information.

Table 1. GPS/FMS Messages

Message	Meaning
Nav Source is Not Communicating	No RS-232 or ARINC 429 GPS data is being received. Check wiring and Comm port setting.
Nav Source Data is Not Valid	Data is being received from the external GPS. However, insufficient information is available to determine position. Aircraft could be in the hangar or the GPS may not have determined its "fix" or location.
Nav Source Data is Valid	The MFD is receiving valid position data from the GPS.
Nav Source Data Format Error	Data is being received, however the MFD does not recognize the data as the format selected. May indicate a baud rate or receiver type error.
Nav Source: No Port selected	The COMM port setting in the GPS setup dialog is set to NONE. To correct this, choose the port to which the GPS is connected, typically COM2.
Nav Source: Reconnecting	This message is displayed when data between the MFD and the GPS is being synchronized.
Nav Source: Can't Open Port	Another device is configured for the same port. Check the Setup page for all devices. Typically the GPS is configured for RS-232 Port 2 or ARINC 429 port 1. A second GPS can only be configured for ARINC port 2.
Heading Data is Not Valid	Heading data is no longer available from the GPS. Will only appear if the GPS is being used as the heading source.
Heading Data is Valid	Heading data has been restored.

Table 2. Traffic Messages

Message	Meaning
Traffic Sensor is (TAS) Not Communicating	Traffic data is not being received.
Traffic Sensor is in Stand-By (TAS)	The Skywatch sensor has been placed in Standby mode.
Traffic Sensor is in Self-Test (TAS)	The Skywatch sensor has been placed in Self-Test mode.
Traffic Sensor is Operating Normally (TAS)	Verification that Traffic data is valid.
TCAD Altitude Unavailable (TCAD)	Occurs when altitude data has been lost from the TCAD sensor.

Table 3. Lightning Messages

Message	Meaning
Lightning Sensor is Operating Normally	Verification that strike data to the MFD is valid.
Lightning Sensor in Demo Mode	Demo mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor is in Noise-Monitor Mode	Noise-Monitor mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor in Test Mode	Test mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor ERROR	The sensor system has reported an error that may mean current data is incomplete or erroneous. The error may clear.
Lightning Sensor has FAILED	The sensor system has reported an error that may mean current data is incomplete or erroneous. The error will not clear until power is removed from and reapplied to the sensor system.
Lightning Sensor is Not Communicating	Communication of strike data from the Lightning sensor to the MFD has been lost.
Lightning Ahead	The Lightning Ahead option has been checked on the Lightning Setup page. Displayed when a Lightning Ahead condition exists.
Lightning Heading Source Failed	Heading data is no longer available from the WX-500. Strike data may still be valid. Will only appear if the WX-500 is being used as the heading source.
Lightning Heading Source OK	Heading data has been restored.
Stuck mic-PLEASE CHECK	Check the comm transmitters for indication of a stuck mike.
Lightning Antenna Location Changed	There may be an inconsistency between the antenna location jumper setting and the software configuration. This message should only appear during installation.
Lightning Sensor – Noise Present	When connected to a TWX-670, the TWX has indicated excessive electrical noise that may impair lightning sensing capabilities.
Lightning Sensor – No Position Data	When connected to a TWX-670, the TWX is configured for geo stabilization but is not receiving valid position data from a GPS/FMS.

Table 4. Datalink Messages

Message	Meaning/Action
Datalink Sensor Data Is Invalid	The EX5000 has received unreadable satellite data.
Datalink Sensor Configuration Error	The EX5000 is improperly configured for datalink. o Requires factory servicing.
Datalink Sensor Is NOT Communicating	The EX5000 is experiencing a communication failure with the internal Satellite transceiver.

	o Requires factory servicing.

7. Removal and Replacement Information

7.1 Removal

Remove the Avidyne MFD from the instrument panel by turning four corner-mounted flat head Dzus fasteners counter-clockwise and pulling the unit away from instrument panel. Remove the signal/power connector located on the back of MFD by turning two jackscrews counter-clockwise (see Figure 3). Disconnect the coax datalink antenna cable.

7.1.1 Recorded Engine Time Function

Specific MFDs manufactured by Avidyne are capable of recording engine run time and may be the sole means of providing that function in a particular aircraft. The recorded engine time is provided on the Maintenance page of the MFD. This value cannot be altered.

When removing and installing MFDs that provide the recorded engine time function, care must be taken to note engine time prior to removal of the MFD. If a reconditioned, or new MFD is to be reinstalled (in place of an originally installed MFD), the recorded engine time of the replacement MFD must be reconciled in the aircraft records (airframe/engine logbooks).

Table 5 lists MFD software part numbers that are capable of providing recorded engine time.

Table 5. Recorded Engine Time Function Applicability

MFD	Aircraft Type
S/W 530-00137-00X, REV 02	PA-28R-201, PA-28-181, PA-28-161
S/W 530-00170-002, REV 00	PA-28R-201, PA-28-181, PA-28-161
S/W 530-00180-002, REV 00	PA-28R-201, PA-28-181, PA-28-161

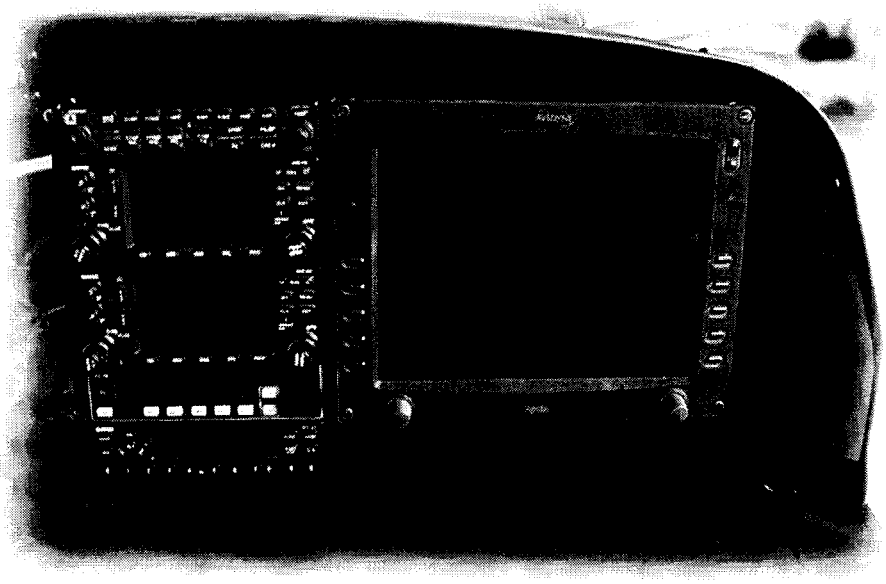

Figure 3. MFD Installation

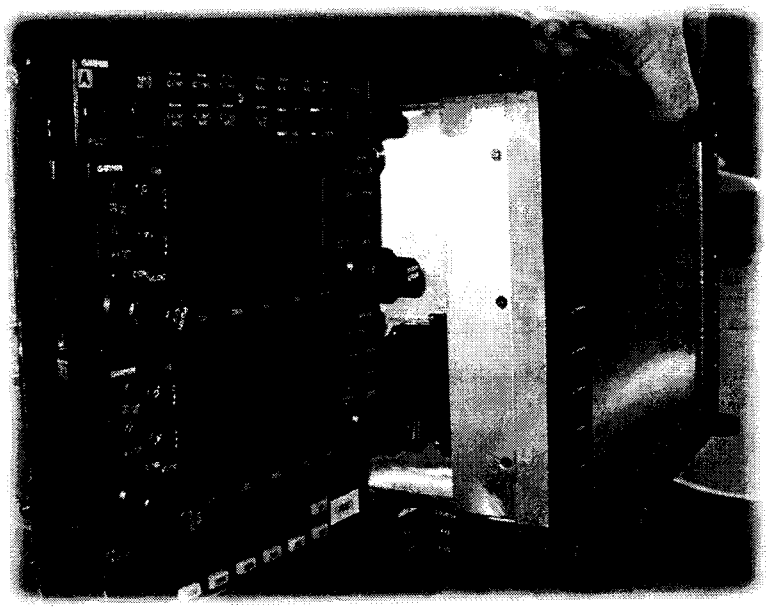

Figure 4. MFD & Connector

7.2 Installation

To install the MFD, secure the connector onto the MFD and tighten the two jackscrews. Rest the MFD in the panel cutout and assure that the MFD cable is routed away from any moving parts behind the instrument panel. Position the MFD. Secure the MFD to the instrument panel by turning four corner-mounted flat head Dzus fasteners clockwise.

Upon reinstallation, a functional check should be performed in accordance with the System Setup and Checkout procedures detailed in Section 7.3.

7.3 System Setup and Checkout

Any time the Avidyne MFD is removed and sent to the factory for service, or is replaced with another unit, these system setup procedures should be performed to assure that the unit is properly configured for the installation. This section should also be referenced if it is suspected that the unit may be misconfigured.

Turn on the MFD by applying power to the aircraft battery and avionics bus master switches. The green bezel key backlighting should illuminate to full intensity when the Instrument Lights dimmer control is turned fully counterclockwise. As the dimmer control is turned clockwise, the bezel key lighting should dim fully, and then increase in intensity.

7.3.1 Maintenance Mode Access

Upon initial system power-up, the MFD will execute a start-up sequence. During this time, the screen will initially display the FlightMax logo, followed by a blank screen until a blue screen with the text "Initializing-Please Wait..." is displayed. The startup sequence is finished when the text "Press any bezel key to Continue..." is displayed. The initialization screen displays the loaded software version, along with NavData and Obstacle database expiration dates.

Apply power to all sensors that interface with the MFD such as GPS navigator, lightning sensor, engine sensor, and traffic sensor. The MFD configuration is accomplished in the setup pages that are accessed through the Maintenance Mode, which is accessed as follows:

1. Turn on the MFD by applying power to the aircraft
2. The system will begin its normal start up sequence
3. At the prompt, "Press any bezel key to continue", press a line select key
4. Rotate the left knob clockwise until the Aux Page is displayed
5. Simultaneously press and hold the top left (L1), and 3rd down from the top left (L3), Line Select keys for at least 5 seconds (See Figure 5).

1. A blue background "Maintenance Page" will appear Figure 5.

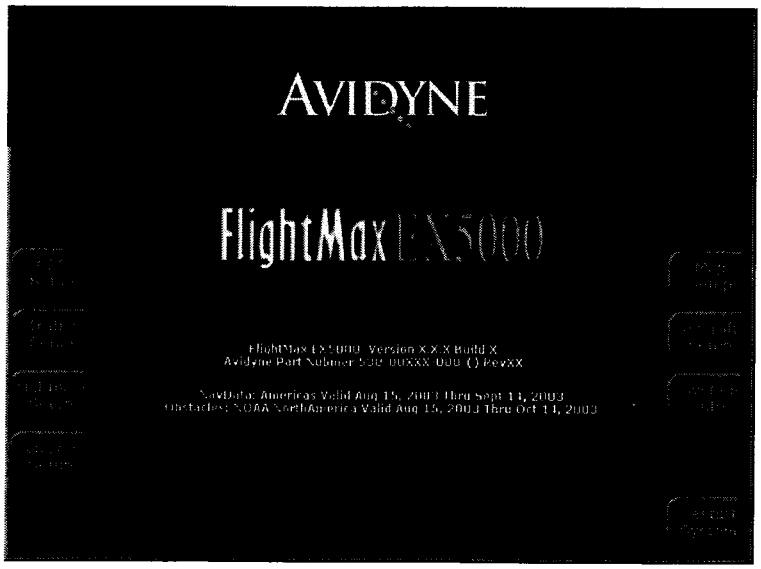

Figure 5. Maintenance Mode Page

NOTE: After changes are made in each setup page press the Save key to save and exit each setup page. Press Cancel if you decide not to keep the changes. After all changes are made in Maintenance Mode, the system must be restarted. Press Restart System. Changes will not take affect until the MFD has been restarted. If no changes were made the Back to Map key exits Maintenance Mode.

7.3.2 GPS Interface, Setup and Checkout

The MFD is capable of interfacing with several FMS/GPS's. There is a FMS/GPS Matrix on page 22 that lists most of the FMS/GPS's that interface with the MFD. The matrix includes information about data formats available and GPS configurations.

NOTE: Installers should use the matrix as a general guideline only. GPS manufacturers are constantly improving and upgrading their products.

Installers should always refer to the Installation manuals that come with their FMS/GPS to confirm configuration and setup parameters.

There are two possible data formats that the MFD uses to interface with the GPS:

- GAMA 429
- RS-232

Some GPS's can only output in one format, while others are capable of outputs in either format. EX3000 MFD's support RS-232 interfaces only. EX5000 MFD's support GAMA 429 and RS-232.

However, GAMA 429 Graphics is the only data format from the GPS capable of providing heading information if the GPS is being used as the heading source (refer to Map Setup in section 7.3.8 for a complete explanation on setting up the various heading configurations within the MFD).

7.3.2.1 GAMA 429 Graphics Setup (EX5000 only)

NOTE: Using 429 will allow for the display of curved segments and approach data, if that data is available.

If your GPS is capable of GAMA 429 Graphics output, wire it according to APPENDIX K – Wiring Diagram 2, ARINC 429 Interface, and configure the following:

Receiver: Select GAMA 429 Graphics Format.

Port: There are 4 ARINC ports, the FMS/GPS is normally connected to ARINC1. Selecting None indicates that a GPS is not connected to the MFD and the software will not look for one.

Speed: There are two speeds available, High and Low.

When the Receiver, Port, and Speed are set to the desired values, press the Save button. Press Cancel if you decide not to keep the changes you made. Changes will not take affect until the MFD has been restarted.

7.3.2.2 Dual GPS setup with GAMA 429 (EX5000 only)

The EX5000 has the capability of receiving information from two GAMA 429 Graphics capable GPS units. The GPS should be connected according to the wiring diagram in the appropriate appendix.

7.3.2.3 RS-232 Setup

NOTE: Using an RS-232 interface does not provide for heading data from the FMS/GPS.

Wire the MFD according to APPENDIX J - Wiring Diagram, Power, Dimming Bus, DL antenna, and RS-232 Interfaces, and configure the following:

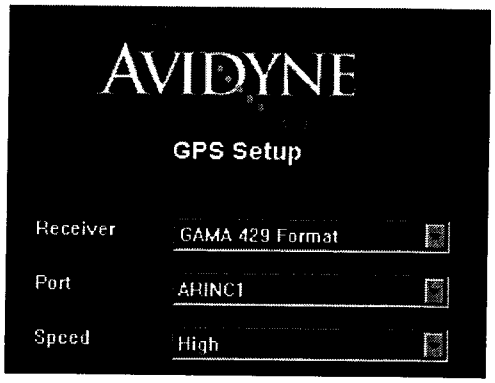

Figure 6 GPS Setup, GAMA 429

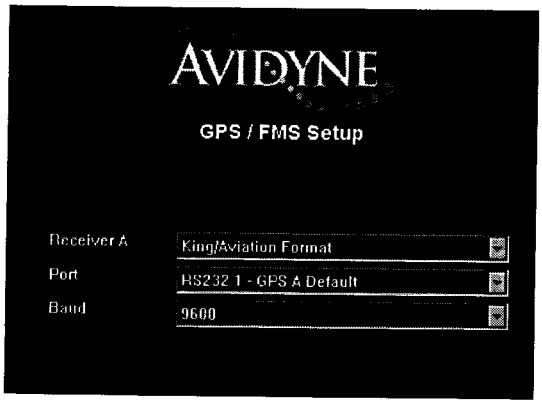

Figure 7 GPS Setup, RS-232

Receiver: Use the FMS/GPS Manufacturer Matrix section on page 22 or refer to your FMS/GPS Installation manual to determine the RS-232 output format of your receiver. Choose from the following RS-232 formats: NMEA 0183, King/Aviation Format, or Northstar Format.

Port: There are 4 RS232 ports; the FMS/GPS is normally connected to RS232 1.

Baud: Choose the proper baud rate. Refer to the FMS/GPS Installation manual or see "FMS/GPS Manufacturer Matrix" on page 22 for the maximum speed. The following speeds are available: 1200, 2400, 4800, 9600, 19200, or 38400.

When the Receiver, Port, and Baud rate are all set to the desired values, press the Save key to save and complete the setup procedure. Press Cancel if you decide not to keep the changes you made. Changes will not take affect until the MFD has been restarted.

7.3.2.4 FMS/GPS Communications Check (Messages)

After the MFD has been restarted, any of the following messages may appear in the main viewing screen or the message bar and Setup page.

Message	Meaning
Nav Source: Is Not Communicating	No RS-232 or ARINC 429 GPS data is being received. Check wiring and COM port setting.
Nav Source: Data is Not Valid	Data is being received from the external GPS. However, insufficient information is available to determine position. Aircraft could be in the hanger or the GPS may not have determined its "fix" or location.
Nav Source: Data is Valid	The MFD is receiving valid position data from the FMS/GPS.
Nav Source: Data Format Error	Data is being received, however the MFD does not recognize the data as the format selected. May indicate a baud rate or receiver type error.
Nav Source: No Port selected	The RS232 port setting in the GPS setup dialog is set to NONE. To correct this, choose the port to which the GPS is connected, typically RS232 1.
Nav Source: Reconnecting	This message is displayed when data between the MFD and the GPS is being synchronized.
Nav Source: Can't Open Port	Another device is configured for the same port. Check the Setup page for all devices. Typically the FMS/GPS is configured for Port1 (for RS-232) or ARINC1 (for ARINC 429). If a second FMS/GPS is being used it is configured for Port2 or ARINC2.
Heading Data is Not Valid	Heading data is no longer available from the FMS/GPS. Will only appear if the FMS/GPS is being used as your heading source.
Heading Data is Valid	Heading data has been restored.

7.3.3 FMS/GPS Manufacturer Matrix

FMS/GPS	RS232	RS-232 FORMATS	ARINC 429	BAUD/DATA RATE	HEADING OUTPUT	FMS/GPS CONFIGURATION	DME ARC
KLN-89B	Yes	King/Aviation	No	Serial - 9600	No		Flight Plan ends at entry point
KLN-90B	Yes	King/Aviation	Yes	Serial - 9600 ARINC - Low	ARINC only		Flight Plan ends at entry point
NorthStar M1, M2, or M3	Yes	NorthStar	No	1200 or 9600	No	The Northstar default baud rate is 1200. Better performance and extended data is achieved by setting it to 9600 (1200 will work). Refer to the NorthStar manual to change the baud rate	
Trimble 2000, 2101	Yes	King/Aviation	Some models	9600	Not Available	Use RS-232 port 2 No Parity, 8 bits	Sends multiple waypoints around arc
Garmin 150, 250	Yes	King/Aviation	150-No 250-No	Serial - 9600 ARINC - Low	ARINC only	For the 250 DO NOT use the W/O GAMA mode, use the EFIS mode. If using the NMEA format use the 2nd channel.	
Garmin 155, 165	Yes	King/Aviation	No	9600	No		
Garmin 400 Series	Yes	King/Aviation	Yes	Serial - 9600 ARINC - Low	ARINC only	For RS-232 operation, set the Garmin to Aviation Output. With ARINC 429 operation use GAMA with Graphics	With RS-232 the arc is depicted as a straight line.
Garmin 500 Series	Yes	King/Aviation	Yes	Serial - 9600 ARINC - Low	ARINC only	For RS-232 operation, set the Garmin to Aviation Output. With	With RS-232 the arc is depicted

FMS/GPS	RS232	RS-232 FORMATS	ARINC 429	BAUD/DATA RATE	HEADING OUTPUT	FMS/GPS CONFIGURATION	DME ARC
						ARINC 429 operation use GAMA with Graphics	as a straight line.
Universal UNS-1B	No		Yes	ARINC - High	Yes		
Honeywell GNS-XLS	No		Yes	ARINC - High or Low	Yes	For GNS-XLS Configuration Programming set as follows: GAMA ARINC 329 Bus Data Set= 1. Basic EFIS DME Arc Style=1. Arc as Gap	The arc is depicted as a gap
II Morrow Apollo GX-50	Yes	King/Aviation	No	9600	No	Use the Moving Map format.	

NOTE: Garmin Installation. Some Garmin units provide two RS-232 formats for GPS data. One is an "aviation" format. The other is an RS232 "plotting" format. The "aviation" format provides a "King" format 9600 baud output at a higher repetition rate and is the preferred RS-232 output. Consult the specific Garmin GPS installation manual for full details.

NOTE: Northstar Installations. Many Northstar units have a hidden setup screen to change configuration parameters to make it difficult to change in flight. Carefully refer to the Northstar installation manual for the specific codes to enter to set this up correctly.

NOTE: Trimble 2000A Installations. This unit has a hidden setup screen documented in the installation manual to change configuration parameters to make it difficult to change in flight. Carefully refer to the Trimble Installation manual for the specific codes to enter. Trimble units have been observed to sometimes lose configuration when the aircraft battery is discharged

7.3.4 Lightning Sensor Interface and Setup

The lightning sensor interface is optional; the MFD can interface to either an Avidyne TWX-670 or L-3 Communications WX-500 Stormscope lightning sensor. Interconnect details are provided in the MFD installation (Section 1.7 Reference Publications). The MFD communicates to and from the TWX-670 or WX-500 use RS-232 communications. To configure Lightning, access Maintenance Mode as described in Section 7.3.1 and select *Lightning Setup* (refer to Figure 8); then, choose the appropriate sensor setup page.

Sensor: Select between the lightning sensor and a simulation program. The normal selection is either TWX-670 or WX-500. The simulation setting is used in conjunction with the demo mode to simulate lightning operations on the ground, and is only available for WX-500.

Operating Mode: The normal operating mode is weather. Demo is used in conjunction with demo mode to simulate lightning operations. Noise Monitor mode is used during noise mapping tests for the WX-500 only. Refer to the WX-500 installation manual for testing procedures.

Port: Set the MFD RS232 port that is connected to the lightning sensor to match the aircraft wiring.

Stab Type (WX-500): Select the source of stabilization for use by the WX-500. Stabilization aids in correctly positioning strikes when the aircraft is turning. The choices are:

- Synchro: a remote compass system that generates and transmits synchro signals received by the WX500. This heading data can also be used by the MFD to orient the map. See the Map Heading Setup section.
- Stepper: a remote compass system that generates and transmits stepper signals received by the WX500. This heading data can also be used by the MFD to orient the map. See the Map Heading Setup section.
- Use Map Heading/Track: The WX500 receives heading or track data from the MFD via RS232. Heading will be sent from the MFD only if GPS/FMS is the heading source via ARINC 429.

The best method of stabilization is a heading source (synchro or stepper input to the WX-500 or Map Heading). The next best method is Track. The wiring and WX-500 jumpers must agree with the setup on the MFD.

TWX-670 Config: This button becomes available for the TWX-670 after setting the Sensor, Operating Mode, and Port fields and restarting the MFD. Pressing this button jumps to a configuration page with the following options:

- Use Heading Source: allows the TWX-670 to use a heading source such as a synchro to stabilize strike information to the aircraft heading.
- Use Position Source: allows the TWX-670 to use a GPS or FMS to georeference lightning strike information.
- Enable Audio Output: if the TWX-670 is properly connected to the aircraft audio panel, the sensor will output audible warnings if lightning is detected very near to the aircraft.

The TWX-670 will compare these setup options against the desired configuration of other installed displays and notify the installer of any discrepancies with a red X next to each option. A green check mark will appear if the sensor is properly configured.

Enable Lightning Ahead Warning?: Enables display of the Lightning Ahead warning message in the message bar when checked and disables it when not checked.

Antenna on Top?: Indicates that the sensor antenna is mounted on top of your aircraft when checked and that it is mounted on the bottom of your aircraft when not checked.

NOTE: The antenna position setting and stabilization source agree with the WX-500 jumper setting and the physical mounting location of the antenna.

WX500/TWX-670 Diags: Allows access to the WX-500 diagnostic modes. Follow the guidance in the WX-500 installation manual to verify WX-500 software versions, wiring configurations, antenna environment, and fault log. (not available on all software releases)

Self Test (WX-500): Runs the WX-500 self test and reports Pass or Fail. Follow the guidance in the WX-500 installation manual to understand the testing and the interpretation of the results. The self test for the TWX-670 is available in its diagnostic pages. (not available on all software releases)

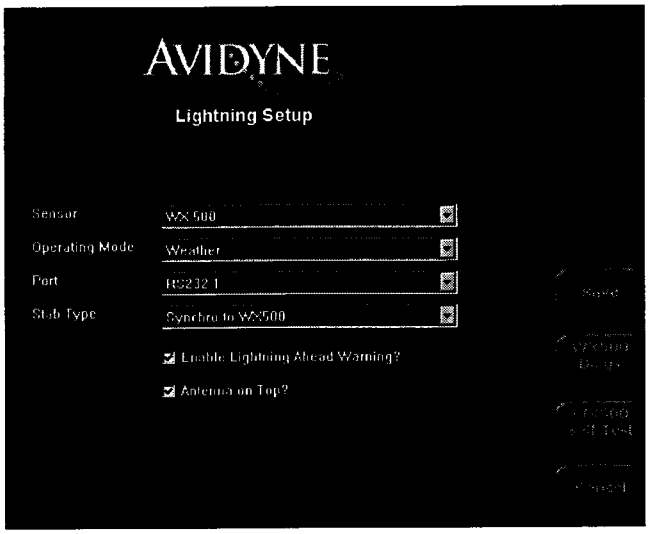

Figure 8 Lightning Setup Page

7.3.4.1 Lightning Sensor Checkout

After the MFD has been restarted, any of the following messages may appear in the main viewing screen or the message bar and Setup page.

Message	Meaning
Lightning Sensor is Operating Normally	Verification that strike data to the MFD is valid.
Lightning Sensor in Demo Mode	Demo mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor is in Noise-Monitor Mode	Noise-Monitor mode has been selected as the operating mode from the Lightning Setup Page.
Lightning Sensor in Test Mode	Test mode has been selected as the operating mode from the Lightning Setup Page.

Message	Meaning
Lightning Sensor ERROR	The sensor system has reported an error that may mean current data is incomplete or erroneous. The error may clear.
Lightning Sensor has FAILED	The sensor system has reported an error that may mean current data is incomplete or erroneous. The error will not clear until power is removed from and reapplied to the sensor system.
Lightning Sensor is Not Communicating	Communication between the Lightning sensor to the MFD has been lost. The wiring may be incorrect, the MFD setup may not match the wiring or the sensor may have an error.
Lightning Ahead	The Lightning Ahead option has been checked on the Lightning Setup page. Displayed when a Lightning Ahead condition exists.
Lightning Heading Source Failed	Heading data is no longer available from the WX-500. Strike data may still be valid. Will only appear if the WX-500 is being used as your heading source.
Lightning Heading Source OK	Heading data has been restored.
Stuck mic-PLEASE CHECK	Check your COM transmitters for indication of a stuck mike.
Lightning Antenna Location Changed	There may be an inconsistency between the antenna location jumper setting and the software configuration. This message should only appear during installation.
Lightning Sensor – Noise Present	When connected to a TWX-670, the TWX has indicated excessive electrical noise that may impair lightning sensing capabilities.
Lightning Sensor – No Position Data	When connected to a TWX-670, the TWX is configured for geo stabilization but is not receiving valid position data from a GPS/FMS.

7.3.4.2 Lightning Sensor Strike Test

Select the Aux page and press the Lightning Strike Test button. If connected to a WX-500, the MFD will switch to the Map page and display a single strike at 15 mile range and 45 degrees relative bearing. If not there may be an inconsistency with the heading source, wiring, or MFD setup. If connected to a TWX-670, the MFD will switch to the dedicated TWX-670 self test page. See the TWX-670 documentation for more information.

7.3.4.3 Lightning Sensor Noise Mode

When operating the WX-500 in Noise Monitor mode, the Lightning status block on the Map page will display "Noise" as the current Lightning state. The Lightning button will continue to show its standard states (Strike, Cell, Off). Do not press the button in this state, or it may suppress lightning display unnecessarily. If no lightning strikes are shown at all during noise testing, ensure the button does not say Display Off; if it does, press the button once to enable lightning display.

7.3.5 Traffic Sensor

NOTE: Only the listed Traffic sensors are supported. If a non-listed traffic sensor is connected to the MFD some of the data may display but its accuracy and traffic sensor control functions may be incorrect or inoperable. Display of traffic sensor data is not a guaranty of correct traffic sensor installation and configuration.

Access Maintenance Mode and select Traffic Setup. Follow instructions for TAS, TCAD, or TIS setup.

7.3.5.1 TAS (SkyWatch & Bendix/King) Setup

SkyWatch uses an ARINC 429 data connection between the TRC (Transmitter/Receiver Computer) and the MFD.

Sensor – Select TAS

Port- Select the MFD ARINC 429 port to which the TAS sensor is wired.

TAS Type- Select Skywatch or Bendix/King

External Controller? (SkyWatch only) - A check in this box indicates that control of Standby/Operate and Self Test functions is not performed by the MFD but by the SkyWatch display or a GPS. Only one device may control the Standby/Operate and the Self Test functions thus they are NOT available on the MFD with external controller checked.

Heading Available? - Checking this field indicates that heading data is supplied to the TAS sensor via synchro, stepper or ARINC 429 and is available to the MFD.

7.3.5.2 TAS (SkyWatch) Checkout

Self test can only be performed from the STANDBY mode and will return to the STANDBY mode upon successful completion of the self test. To perform a Self test do the following:

1. With Traffic in Stand By, rotate the left knob and select the Setup page.
2. Select Traffic Self Test.
3. The Map page will pop up.
4. The Sensor Status indicates that the sensor is in "Test" and a Traffic test pattern appears on the display.

If the self test fails, an error message is generated and displayed on the MFD screen. Refer to the SKY497 Installation manual for explanations and fault isolation procedures.

Installation checkout - Once J1-80 (ALT_DISP1) is strapped to ground, the Setup/Calibration menu is no longer available through the WX-1000 display or MFD. To perform calibration and checkout, an external terminal or PC must be connected. Once this configuration is saved, ARINC 429 communications to the MFD will begin.

Use the alternate display procedure (Appendix E) in the SKY 497 Installation manual. A terminal device using a RS-232 serial data cable is needed for these setup procedures. Appendix D in the SKY497 Installation manual explains how to configure the terminal device. Any computer with RS-232 terminal emulation software (e.g., Procomm, HyperTerminal, etc.) may be used as the terminal device.

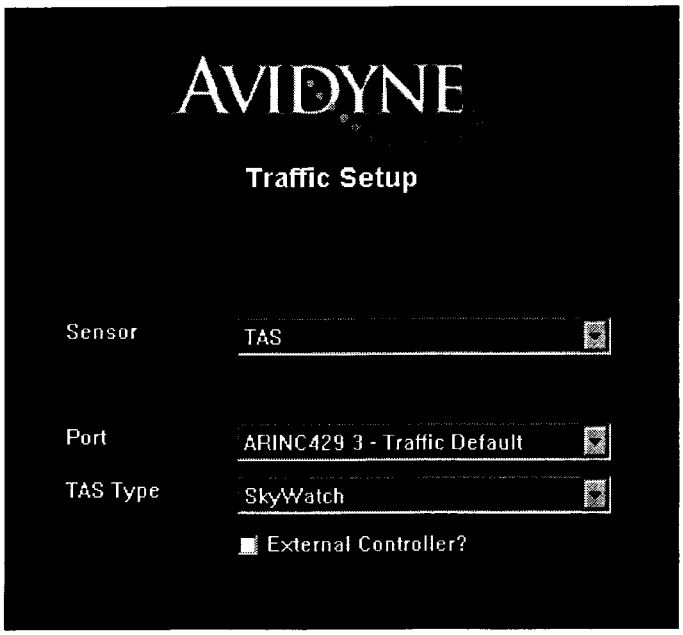

Figure 9 TAS selection on Traffic Setup Page

7.3.5.3 TAS (Bendix/King) Checkout

Verify correct communication by monitoring the Message List on the Setup page for normal message "Traffic Sensor Operating Normally". The MFD does not command the KTA870 into Self test mode. Use the KTA870 control panel if installed. Refer to the KTA870 Installation Manual for fault isolation procedures.

7.3.5.4 TCAD (Optional) Setup

The MFD supports Ryan 9900B and 9900BX TCAD sensors. Connect aircraft power to the Ryan TCAD sensor per the Ryan Installation manual. The MFD does NOT provide power to the Ryan sensor. TCAD is interfaced to the MFD via RS232.

Sensor: Select TCAD

Port: Select the MFD RS232 port to which the TCAD sensor is wired.

TCAD Type: Select either 9900B or 9900BX, corresponding to the installed TCAD sensor unit. Note that 9900BX sensors are treated like TAS systems, so the TCAD Shield sizes are not

presented as adjustable. Note that some software versions may not present this option to select TCAD type. If the option is not presented, all TCAD sensors will use the shield size settings described below.

TCAD Shields: When interfaced with the TCAD 9900B, there are 3 shield sizes that can be set: Terminal, Standard, and Enroute

Range: Sets the horizontal range of the shield. The range is in nautical miles and can be set for a value between 0.0 and 10nm, in 0.1nm increments

Height: Sets the vertical distance in feet with a value between 0 and 5000 ft. in 100 ft. increments

Select the shield you wish to configure from the Shield drop down menu. Select the desired Range and Height from the respective drop down lists. The following table gives the suggested minimum and maximum values for the range and height of each shield.

	Range (NM: 0.5)		Height (feet: 100)	
	Min	Max	Min	Max
Terminal	0.5	1.5	200	1000
Standard	1.0	3.0	500	1500
Enroute	2.0	6.0	1000	2000

NOTE: The max range values shown above are the largest values that the TCAD processor will accept. Choosing larger values than those shown will cause the processor to default to smaller shield sizes and is not recommended.

7.3.5.5 TCAD Dual Display Setup

When installing the MFD with the Ryan TCAD display unit, refer to the Ryan TCAD 9900 series Installation manual for wiring procedures. Reference Figure 2-15 Wiring Diagram for Dual Displays and Section 7 in the Ryan manual for instructions.

7.3.5.6 TCAD Checkout

The MFD does not display the TCAD self test function. If you wish to perform this test, then you must use the Ryan TCAD display unit.

On installations with the TCAD 9900 display unit, follow the checkout procedures given in the 9900 series Installation Manual.

On installations without the TCAD 9900 display unit (MFD only), perform checkout procedures listed in the 9900 series Installation Manual, with the exception of the display test.

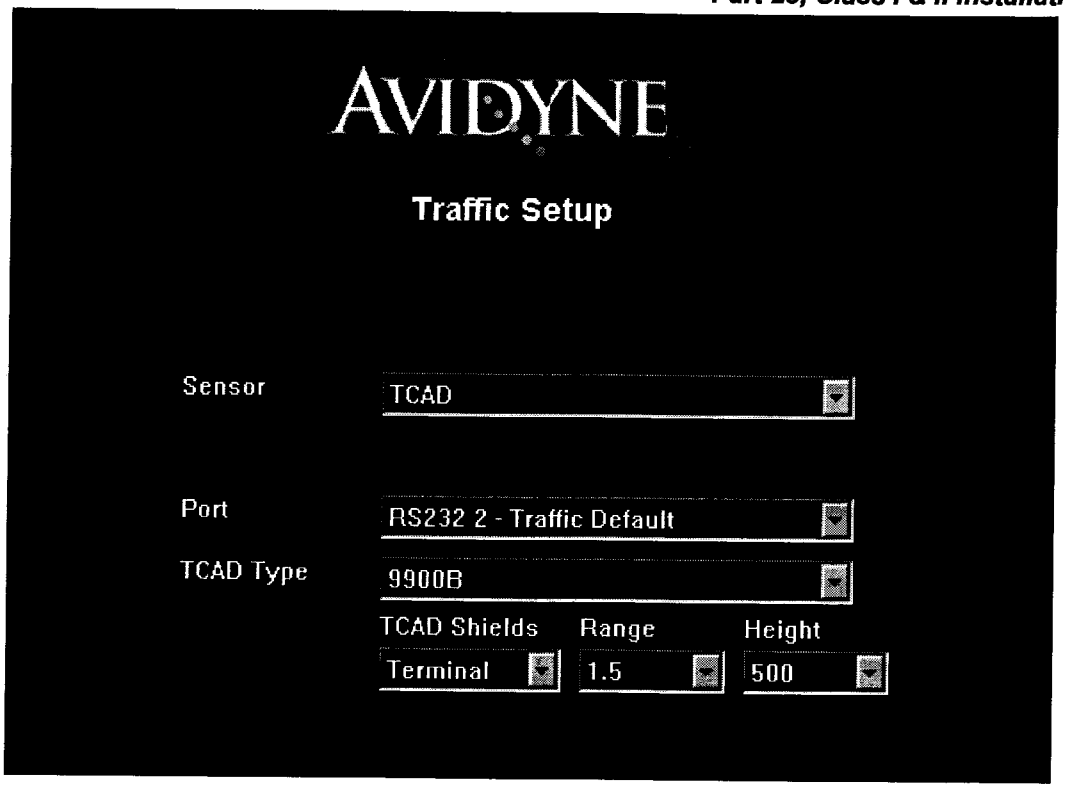

Figure 10 TCAD selection on Traffic Setup Page

7.3.5.7 TIS (Optional) Setup

EX5000 MFD supports the display of traffic information from a Garmin GTX-330 TIS-capable Mode-S transponder.

Note: This option is available on 530-00148-000 and 530-00162-( ) software. This sensor is not supported by the EX3000.

Wire power to the Garmin GTX -330 transponder per the Garmin Installation manual. The MFD does NOT provide power to the GTX sensor. TIS uses an ARINC 429 data connection between the transponder and the MFD. Make this connection after consulting the wiring diagrams in the appendix of this document and the GTX-330 installation manual.

On the EX5000 Traffic Setup Page:

Sensor: Select TIS-G

Port: Select the MFD ARINC 429 port to which the TIS transponder is wired.

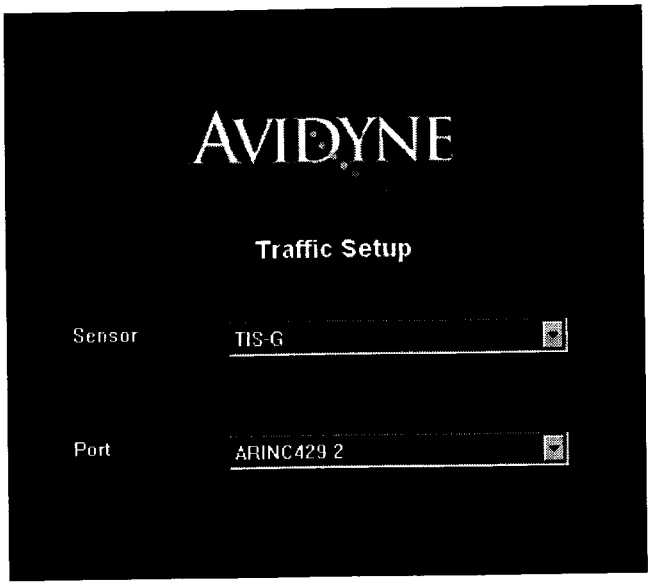

Figure 11 TIS selection on Traffic Setup Page

7.3.5.8 TIS Checkout

Use a TIS transponder test set to test the combined installation of GTX-330 and the EX5000. If no test set is available, conduct operations in an area supporting TIS data and verify that data is received and traffic is displayed.

7.3.5.9 Traffic Communications Check (Messages)

After the MFD has been restarted, any of the following messages may appear in the main viewing screen or the message bar and Setup page.

Message	Meaning
Traffic Sensor is Not Communicating	Traffic data is not being received.
Traffic Sensor is in Stand-By (TAS/TIS)	The traffic sensor has been placed in Standby mode.
Traffic Sensor is in Self-Test (TAS)	The traffic sensor has been placed in Self-Test mode.
Traffic Sensor is Operating Normally	Verification that Traffic data is valid.
TCAD Altitude Unavailable (TCAD)	Occurs when altitude data has been lost from the TCAD sensor.
Traffic Sensor has Failed	The traffic sensor has reported an internal fault, or the RS-232 ports are not configured correctly (TCAD).

NOTE: Upon completion of all configuration procedures, installers should confirm that the MFD is configured for the correct Traffic sensor.

7.3.6 TAWS (Optional)

The MFD interfaces to the Honeywell Bendix/King EGPWS systems with Phase 2 software or later.

7.3.6.1 TAWS Setup

To configure the MFD to interface to the TAWS, access Maintenance Mode and select TAWS Setup.

Sensor: Select "Honeywell EGPWS"

ARINC 429 Port: Select "ARINC 429 4 - TAWS Default"

ARINC 453 Port: Select "ARINC 453 2 - TAWS Default"

Altitude Annunciation On: Selection of this feature will permit a visual annunciation of GPS altitude on the TAWS display. A check mark in the adjacent box will appear if selection is desired.

Upon completion of these settings, select "Save" and restart the MFD.

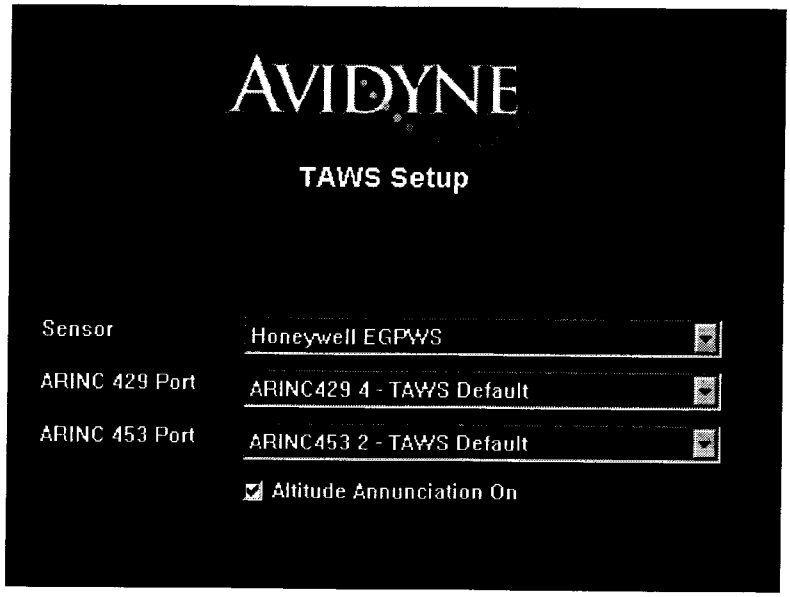

Figure 12 TAWS Sensor Setup Page

7.3.6.2 TAWS Checkout

Set the MFD to the TAWS page and perform a functional test of the GPWS system in accordance with manufacturer's instructions. Refer to the MFD Pilot Guide for display operation.

The GPWS software must support KC Picture Bus (KCPB) Phase 2. Consult the Honeywell GPWS documentation for applicable software configurations. Proper operation of the GPWS interface is noted by the absence of any system status messages. If the self-test fails, an error message is generated and displayed on the MFD display. Refer to the EGPWS system installation manual for explanations and fault isolation procedures.

7.3.6.3 TAWS Communications Check (Messages)

If there is a communication or data error between the TAWS sensor and the MFD, the following message will remain on the bottom of the screen.

Message	*Meaning/Action*
TAWS Failed	An incorrect system configuration or failure in one of the system components has occurred. o Verify that the sensor is turned on and valid. o Verify system wiring.
TAWS Initializing	If message does not clear within 60 seconds, communication between the MFD and the Terrain sensor has not been established. o Verify that the sensor is turned on and valid. o Verify system wiring. o Refer to terrain sensor installation and user's manual to troubleshoot.
TAWS Not Communicating	Indicates that the MFD is not receiving data from the Terrain sensor. o Verify that the sensor is turned on and valid. o Verify system wiring. o Refer to TAWS sensor installation and user's manual to troubleshoot.
TAWS Display Unavailable	The TAWS Sensor has declared itself inoperative. o Verify system wiring. o Verify that the sensor inputs to the TAWS are turned on and valid. o Refer to TAWS sensor installation and user's manual to troubleshoot.
TAWS Sensor Self-Test	The TAWS Sensor is performing a Self-Test. The message will remain until the self-test is finished. o Verify that the "Self-Test" mode has been not been selected at the separate TAWS control panel. o Verify system wiring. o Refer to TAWS sensor installation and user's manual to troubleshoot.
TAWS Inhibited	The TAWS sensor is in the "Inhibited" mode. o Verify that the "Inhibit" mode has been not been selected at the separate TAWS control panel. o Refer to TAWS sensor installation and user's manual to troubleshoot.

7.3.7 Radar Sensor (700-00030-005 MFD only)

Radar support is provided by the Bendix/King RDR-2000 Radar system, including the AlliedSignal ART-2000 sensor, and is an option only available on the 700-00030-005 EX5000. The 530-00170-000, 530-00170-001, and 530-00180-000 software are the only software part numbers that will support radar.

From the Radar setup page, select Radar Installed, save the selection, and restart the MFD.

The following table describes the configuration options offered by the ART-2000 sensor. Further details are available in the Radar installation and operations manual.

Option	Value	Notes
Park Position	Last position	Set the park/startup position for the radar antenna tilt angle.
	Full up	
	Centered	
	Full down	
Beam Width	0.0° – 19.5°	Defines the Width and Height of the radar sweep graphical depiction on the EX5000 radar display. Typical beam widths are provided below.
Beam Height	0.0° – 19.5°	
Enable Gain Control	Check/No Check	Enables R/T variable gain control to be commanded from the EX500.
Enable VP	Check/No Check	When checked, enables Radar Vertical Profile mode.
Enable Auto-Tilt Control	Check/No Check	When checked, enables Radar auto-tilt mode.
Primary Indicator (1)	Check/No Check	When checked, enables EX500 control of radar functions.
Disable Stabilization	Check/No Check	Disables EX500 display of the "Stab Off" annunciation
Enable Automatic Standby	Check/No Check	When checked, enables the EX500 to auto-command the radar to standby when ground is sensed to be below 20 kts.

Beam width information is given in the table below.

Antenna Width	Generic Beam Width	Bendix/King Radars
10"	10°	10°
12"	8°	8°
18"	5°	5.6°

The following table describes the features provided by the ART-2000 sensor.

	Range Values	Scan Arcs supported	# of colors	Multiple Ind	Stabilization	Stab on-off control	Auto-Tilt	VP	Roll Trim adj	ARL/PAC	Target Alert	Tilt settings	Azim Lines other than 0°
ART-2000 (RDR-2000) [ART-2000]	10, 20, 40, 80, 160, 240	90°, 100°	4	•	•	•	∇	•	•		•	±15°	

• Support native to R/T

∇ Support provided by Avidyne software

NOTE: Features provided by software for ALL sensors:

- Beam Altitude display
- Beam Width display
- Bearing Line
- Hold (Freeze)

Startup/Standby Tilt Parking

7.3.7.1 RADAR System Calibration

Calibration of the Radar R/T unit requires access to the radar calibration page on the FlightMax EX500 unit. This section explains how to access the calibration page and complete the radar calibration. Calibration of the radar R/T should be performed according to the procedures and specifications for the specific unit installed in the aircraft.

Calibration can be performed after the Radar has been installed, setup and checked out per the radar manufacturer's instructions.

7.3.7.2 Calibration with AlliedSignal (Bendix/King) 2000 Radar Sensor

This section describes Post-Installation System Configuration and Calibration of the Bendix/King RDR-2000 Radar System using the EX5000 and replaces specific sections of the Bendix/King Installation Manual that describe configuration and calibration using the Bendix/King IN-182A Indicator.

To configure and calibrate the system, follow the original B/K Installation Manual substituting the following two sections with the instructions provided herein.

2.4.1 CONFIGURATION PROCEDURE USING RADAR INDICATOR

2.4.4.1 STABILIZATION CALIBRATION WITH RADAR INDICATOR.

NOTE

If the EX5000 is replacing the indicator of currently installed and previously calibrated RDR 2000 series radar, this procedure may not be necessary. The calibration values are contained in the configuration module of the R/T and should remain valid. Avidyne does recommend that the installer check the calibration values after the Avidyne unit has been installed to ensure that nothing has changed.

2.4.1 CONFIGURATION PROCEDURE USING A PERSONAL COMPUTER

The R/T Configuration Module must be configured using the Allied Signal KPA 900 Configuration Module Programmer Kit (Part Number 050-03311-0000) in conjunction with a personal computer. Refer to the configuration module user data for detailed setup instructions. Follow the instructions for the programmer.

2.4.1.1 Antenna Clearance Check

Complete the Antenna Clearance Check by performing the following steps:

A. Set the radar Function to SBY.
B. Set the radar Mode to GND.
C. Reduce the gain until the gain indicator shows the minimum setting.
D. Set the Antenna Tilt to full UP (U 15.0).
E. Set Range to 240 NM.
F. Set Function to TEST.
G. Set he radar mode to GND
H. Reduce the gain until the gain indicator in the upper left shows the minimum setting.
I. Set the Antenna Tilt to Full UP (U 15.0)
J. Set the Range to 240 NM
K. Navigate to the SETUP page and enter the Maintenance Mode.
L. Press the Radar Setup button.
M. Press the Calibration button to display the RT CALIBRATION DATA page. Upon display of the RT CALIBRATION DATA page with the system in calibration mode, all fault fields will flash briefly. This verifies calibration mode is entered.
N. Adjust the gain to obtain a value of –26.5 to –28 in the GAIN POT /2 field. This will initiate the antenna clearance scan. The antenna will move to each of the extreme positions to determine that there is no interference with antenna movement and all scan motors are working properly.

2.4.4.1 STABILIZATION CALIBRATION WITH FLIGHTMAX EX5000

A. Set the radar Function to SBY.

B. Set the radar Mode to GND.

C. Reduce the gain until the gain indicator in the upper right shows the minimum setting.

D. Set the Antenna Tilt to full UP (U 15.0).

E. Set Range to 240 NM.

Note: Failure to perform steps A to E will prevent the ART from entering calibration mode. If more than one radar indicator is installed in the system, all but one indicator must be in the OFF or SBY position in order for the system to enter the calibration mode.

F. Enter the Maintenance Mode

G. Press the Radar Setup button

H. Press the Calibration button to display the RT CALIBRATION DATA page. See figure 2-5 in the Bendix/King Installation Manual. Upon display of the RT CALIBRATION DATA page with the system in calibration mode, all fault fields will flash briefly. Adjust Roll Trim with the outer knob to 0°.

I. If desired, copy all displayed values to a note pad in case there is a need to recall a value that is accidentally changed.

J. 400 Hz REF GAIN

If an ARINC 429 gyro is being used, proceed to Step N.

1. Set the tilt table to 0 Deg. pitch and roll.
2. Use the GAIN controls to set the GAIN POT /2 setting between –28 and –30.
3. Adjust the TILT SETTING with the inner knob between 5 and 10 UP to increment the 400 HZ REF field to 0.0 ±1.0 Deg. (adjusting the TILT SETTING between 5 and 10 DOWN will decrement the numbers). Upon reaching the desired setting, quickly adjust the TILT SETTING to above 10 to lock in the setting. See figure 2-11 in the Bendix/King Installation Manual.
4. Proceed to step K

Note: If the 400 Hz REF field is zero (0), and will not change when the TILT knob is adjusted, check that the correct gyro has been selected when programming the Configuration Module.

K. PITCH GAIN

1. Set the tilt table for 10 Deg. pitch up.
2. Adjust the GAIN buttons for a GAIN POT setting between –24.5 and –26.5.
3. Adjust the TILT SETTING between 5 and 10 UP to increment the PITCH ANGLE field to 10.0 ±1.0 Deg. (adjusting the TILT SETTING between 5 and 10 DOWN will decrement the numbers). Upon reaching the desired setting, quickly adjust the TILT SETTING to above 10 to lock in the setting. See figure 2-11 in the Bendix/King Installation Manual.
4. Set for 10 Deg. PITCH DOWN. Repeat steps 2 and 3.
5. Set the tilt table to 0 Deg. pitch and roll.
6. Proceed to step M.

L. PITCH OFFSET

1. Adjust the GAIN controls for a GAIN POT setting between –17.5 and –19.5.
2. Check that the tilt table is set for 0 Deg. pitch.
3. Adjust the TILT SETTING between 5 and 10 UP to increment the PITCH ANGLE field to 0.0 ±1.0 Deg.(adjusting the TILT SETTING between 5 and 10 DOWN will decrement the numbers). Upon reaching 0 Deg.±1.0°, quickly adjust the TILT SETTING to above 10 to lock in the setting. See figure 2-11 in the Bendix/King Installation Manual.
4. Set the tilt table to 10 Deg. pitch up. The value should be 10.0U ±1.0°. If the value is out of range, repeat Step L.
5. Set the tilt table to 10 Deg. pitch down. The value should be 10.0D ±1.0°. If the value is out of range, repeat Step L.
6. Set the tilt table to 0 Deg. pitch. The value should be 0.0 ±1.0°. If the value is out of range, repeat Step M.
7. Proceed to Step N.

M. AHRS ARINC 429 PITCH OFFSET

1. Adjust the GAIN buttons for a GAIN POT setting between –10.5 and –12.5.
2. Check that the tilt table is set for 0 Deg. pitch.
3. Adjust the TILT SETTING between 5 and 10 UP to increment the PITCH ANGLE field to 0.0 ±1.0 Deg (adjusting the TILT SETTING between 5 and 10 DOWN will decrement the numbers). Upon reaching 0 Deg.±1.0°, quickly adjust the TILT SETTING to above 10 to lock in the setting. See figure 2-11 in the Bendix/King Installation Manual.
4. Set the tilt table to 10 Deg. pitch up. The value should be 10.0U ±1.0°. If the value is out of range, repeat Steps 1, 2 and 3 of this section.
5. Set the tilt table to 10 Deg. pitch down. The value should be 10.0D ±1.0°. If the value is out of range, repeat Steps 1, 2, 3 and 4 of this section.
6. Set the tilt table to 0 Deg. pitch. The value should be 0.0 ±1.0°.
7. Proceed to Step P.

N. ROLL GAIN

1. Set the tilt table for 10 Deg. roll right.
2. Adjust the GAIN buttons for a GAIN POT setting between –21.0 and –23.0.
3. Adjust the TILT SETTING between 5 and 10 UP to increment the ROLL ANGLE field to 10.0 ±1.0 Deg. (adjusting the TILT SETTING between 5 and 10 DOWN will decrement the numbers). Upon reaching the desired setting, quickly adjust the TILT SETTING to above 10 to lock in the setting. See figure 2-11 in the Bendix/King Installation Manual.
4. Set the tilt table for 10 Deg .roll left. Repeat Steps 2 and 3 of this section.
5. Set the tilt table for 0 Deg. pitch and roll.
6. Proceed to Step O.

O. ROLL OFFSET

1. Adjust the GAIN buttons for a GAIN POT setting between –14.0 and –16.0.
2. Check that the tilt table is set for 0 Deg. roll.
3. Adjust the TILT SETTING between 5 and 10 UP to increment the ROLL ANGLE field to 0.0 ±1.0 Deg.(adjusting the TILT SETTING between 5 and 10 DOWN will decrement the numbers). Upon

reaching 0 Deg.±1.0°, quickly adjust the TILT SETTING to above 10 to lock in the setting. See figure 2-11 in the Bendix/King Installation Manual.

4. Set the tilt table to 10 Deg. roll right. The value should be 10.0R ±1.0°. If the value is out of range, repeat Step N.
5. Set the tilt table to 10 Deg. roll left. The value should be 10.0L ±1.0°. If the value is out of range, repeat Step N.
6. Set the tilt table to 0 Deg. roll. The value should be 0.0 ±1.0°. If the value is out of range, repeat Step O.
7. Proceed to Step P.

P. AHRS ARINC 429 ROLL OFFSET

1. Adjust the GAIN controls for a GAIN POT setting between –7.0 and –9.0.
2. Check that the tilt table is set for 0 Deg. roll.
3. Adjust the TILT SETTING between 5 and 10 UP to increment the ROLL ANGLE field to 0.0 ±1.0 Deg. (adjusting the TILT SETTING between 5 and 10 DOWN will decrement the numbers). Upon reaching 0 Deg.±1.0°, quickly adjust the TILT SETTING to above 10 to lock in the setting. See figure 2-11 in the Bendix/King Installation Manual.
4. Set the tilt table to 10 Deg. roll right. The value should be 10.0R ±1.0°. If the value is out of range, repeat Step P.
5. Set the tilt table to 10 Deg. roll left. The value should be 10.0L ±1.0°. If the value is out of range, repeat Step P.
6. Set the tilt table to 0 Deg. roll. The value should be 0.0 ±1.0°.
7. Proceed to Step Q.

Q. SAVE CONFIGURATION

1. Adjust the GAIN controls for a GAIN POT setting between –3.5 and –5.5.
2. Set the TILT SETTING to 15.0D. The fault fields will flash indicating the save procedure is beginning. If the save procedure is successful, the GYRO fault will disappear and the azimuth count will step.
3. If the GYRO fault remains, set TILT to 0 and repeat step 2 of this section.

7.3.7.3 Roll Trim Adjustment

For procedures that require the Roll Trim to be adjusted, the installer can access the Roll Trim selection from the Maintenance Mode ***Radar Setup*** utility. When selected, the Roll Trim value appears on the Radar screen and may be modified by the Roll Trim control knob. When all setting of the Roll Trim has been accomplished, save the new setting by returning to the Radar Setup using the ***Back*** button.

7.3.7.4 RADAR Checkout

Perform a functional test of the RADAR system in accordance with manufacturers instructions. Refer to the MFD Pilot Guide for display operation.

7.3.7.5 RADAR Sensor Communications Troubleshooting

If there is a communication or data error between the RADAR sensor and the MFD, the following message will remain on the bottom of the screen.

Message	Meaning/Action
Radar Sensor Data Is Invalid	Data received from the RADAR sensor system can not be used by the EX500 o Cycle power on the EX500. o Refer to RADAR Sensor installation and users manual to troubleshoot.
Radar Sensor Has Failed	The RADAR sensor system has reported an error. o Check R/T configuration module error log. o Refer to RADAR Sensor installation and users manual to troubleshoot.
Radar Sensor Is Not Communicating	Communication of return data from the RADAR sensor to the MFD has been lost. o Verify that the RADAR sensor is turned on and valid. o Verify that the EX500 is properly seat in its tray. o Verify system wiring.
Invalid GPS Data and Radar is ON	The RADAR is ON and the EX500 has no ground speed data available from the GPS/FMS. o Verify the GPS/FMS is ON and valid. o Verify system wiring. o Refer to RADAR Sensor installation and users manual to troubleshoot.
Radar Automatic Standby Disabled	The RADAR is ON, the EX500 RADAR automatic standby mode is disabled, and the EX500 has no ground speed data available from the GPS/FMS. o Verify the GPS/FMS is ON and valid. o Verify system wiring. o Refer to RADAR Sensor installation and users manual to troubleshoot.

7.3.8 Map Setup

The Avidyne MFD has the capability to overlay Traffic and Lightning information onto the Map display. To utilize this feature, Map requires Heading or Track information.

The MFD can receive HEADING data from one of following sources:

- Garmin 400 series GPS (via ARINC 429).
- L-3 Communications Stormscope (via RS-232). This is the most common method.
- L-3 Communications Skywatch (via ARINC 429) with software level 1.6 or higher.
- Honeywell (Bendix/King) KTA-870 or KMH-880
- Avidyne PFD

TRACK is the actual direction the aircraft is moving relative to the earth's surface, and is obtained from the GPS.

To configure the Map heading source, access Maintenance Mode as described in Section 7.3.1 and select *Map Setup*. Use the right hand knob to cycle through the selections: None (Use GPS Track), FMS/GPS, Stormscope, and SkyWatch. When the appropriate setting is selected, press the *Save* bezel key. The MFD must be restarted for the setting to take effect.

7.3.9 Engine Sensor Setup and Checkout (When EMax equipped)

7.3.10 Engine Sensor

The MFD supports engine display on Cirrus, Diamond, Lancair, and Piper Aircraft by receiving data via RS232, ARINC422, and/or ARINC429 from an engine sensor interface unit specifically designed for each aircraft. Not all display functions are available on all aircraft.

NOTE: The Engine Instruments Setup may only be activated for those aircraft specifically included under Avidyne Service Bulletin or STC or TC authorization. Do not set up the MFD Engine Sensor interface for any unapproved aircraft installation.

7.3.10.1 Engine Sensor Setup

To configure the MFD for interface with the optional Avidyne Engine Sensor Interface Unit (SIU), Data Acquisition Unit (DAU) or a Vision System DPU, access Maintenance Mode and select Engine Setup (See Figures 11 & 12). Highlight each configuration item and select the appropriate MFD settings as shown below. When instructed, proceed to the Aircraft Setup Page to complete the Engine Instruments page setup.

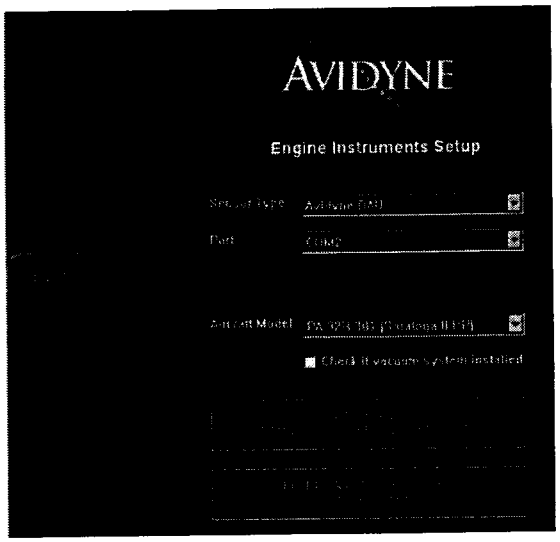

Figure 13 Engine Setup Page with Fuel Cal

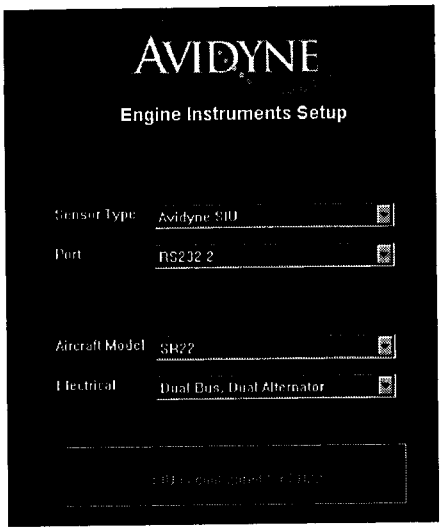

Figure 14 Engine Setup Page with Electrical

NOTE: Upon completion of all configuration procedures, installers should confirm that the MFD is communicating properly with the corresponding engine interface unit. This can be verified following the sensor setup procedure.

NOTE: Figures 11 & 12 depict representative Engine Instruments Setup pages. This page will contain different selectable options depending on MFD software configuration installed.

The MFD uses an RS-232 data connection to receive data from the Engine Sensor Unit. An ARINC 429 connection is also used for specific aircraft.

Sensor Type - Select "Avidyne SIU", "Vision DPU", or "Avidyne DAU", if appropriate.

Aircraft Model- Use the appropriate selection from the Aircraft Model pull down list.

Port – Select the MFD RS232 port to which the Engine interface unit is wired.

DAU ARINC Port – Select the ARINC port to which the Engine interface unit is wired.

DAU Fuel Quantity Port – Select the RS232 port from which fuel quantity will be received.

Electrical/Rudder Trim Port – Select the RS232 port from which electrical and rudder trim information will be received.

Vacuum System Installed (Optional) - If the MFD software version supports a display of vacuum system pressure on the Engine Page, a checkbox will also be displayed on the Engine Setup page. Select this checkbox and use the knob to check the box, if a vacuum system with compatible vacuum pressure sensor is installed in the aircraft.

Electrical (Optional) – Select Single Bus, Single Alternator; Single Bus, Dual Alternator; or Dual Bus, Dual Alternator. (Note that some selections are not available with some aircraft.)

Voltage (Optional) – Select 14V or 28V, as appropriate, for the aircraft installation. Determines only Engine Page display ranges for electrical system information.

Units – Select display of fuel information in English or metric units.

NOTE: The data box at the bottom of the page shows the configuration of the SIU and whether data is being properly received. If the Engine Setup settings do not match with the configuration settings of the SIU/DAU, you will see a yellow annunciation alerting you to recheck configuration of this page and/or the configuration settings of the SIU/DAU. If the SIU/DAU was off or not properly connected when the Engine Setup page was entered, but subsequently is properly selected and operating correctly, the Engine Setup Page status box may not be properly refreshed to reflect this. The installer should confirm the correct Engine Setup options are selected and either: (1) press the Re-Sync button if one is displayed; or (2) press Save and restart the MFD if a Re-Sync button is not displayed. Confirm after restart that the MFD is receiving the engine data from the SIU/DAU.

Fuel Quantity Calibration (Optional)

Note: Option not available on all aircraft.

Fuel quantity indicator calibration is used to compensate for aircraft-to-aircraft variations in the fuel quantities reported by the Engine Data Acquisition Unit (DAU).

The fuel quantity indicator calibration is accessed from the Engine Setup page. Provided the DAU is communicating with the MFD and sending valid fuel quantity data, the fuel quantity indicator calibration may be accomplished. If the DAU is not communicating with the MFD, a DAU failure screen is displayed when the fuel cal page is selected. The only operator selection available in that situation is to exit the page.

The fuel quantity indicator calibration page provides a display of the current fuel quantity indicator calibration values. Different options are available depending on the state of the fuel quantity indicator calibration. The three states of the fuel quantity indicator calibration are: (1) Not Calibrated; (2) Calibration Underway; and (3) Calibrated.

Procedure (for 530-00137-() and 530-00170-002 software):

1. From the Not Calibrated state, the operator may "Begin Cal" or "Exit" the fuel calibration page.
2. If the operator chooses "Begin Cal", the state of fuel calibration changes to Underway and the fuel quantity indicator can be calibrated.
    a. If "Exit" is pressed, the operator is returned to the Engine Setup page with the calibration state remains in the previous state.
3. Use the right knob to select the current calibration point. The selected calibration point is highlighted and the value displayed is the current reported quantity from the DAU. A message at the bottom of the screen prompts the operator to add the appropriate amount of fuel and then to select "Accept Value" once the value reported from the SIU has stabilized.
    a. If the SIU reported value is not within 2 gallons of the test point value, a message "DAU Reported Fuel Quantity Out Of Tolerance" will be presented and the value will not be accepted.
4. This process is then repeated for all the calibration points.

a. If the operator needs to pause the calibration process and turn off power to the MFD, the "Save" button is used to save the interim calibration values.

5. Once all points have been calibrated, the operator presses "Calibration Complete" to cause calibration factors to be computed and applied to DAU reported fuel quantity.

6. Other options from the Underway state are to "Restore Last Cal" and "Clear Cal".

   a. Pressing "Restore Last Cal" causes the calibration values from the last completed calibration to be restored and the state to change to Calibrated.

   b. Pressing "Clear Cal" causes all calibration values to be cleared and the state to change to Not Calibrated. An "Are You Sure?" prompt will give the operator a chance to reconsider the decision to either "Restore Last Cal" or "Clear Cal".

NOTE: Pressing "Cancel" from the Underway state causes the current calibration session to be aborted with any unsaved interim calibration values being discarded.

Procedure (for the 530-00170-000 software, 530-00180-000 software, and 530-00195-000 software):

For the fuel calibration procedure for the 530-00170-000, 530-00180-000, and 530-00195-000 software, refer to the Piper Process Specification document PPS60185.

7.3.10.2 Engine Sensor Checkout

After the MFD has been restarted, view the Engine page to verify data communication. Operate the aircraft engine to confirm correct operation of all sensors. Aircraft Setup (below) will have to be completed for Percent Power function to correctly operate on some models.

7.3.11 Auxiliary Data (Optional)

The MFD may be configured to receive pressure altitude and outside air data from the PFD via a ARINC 429 interface. Note: Option not available on all aircraft.

7.3.11.1 Auxiliary Data Setup

To configure the MFD for Aux Data access Maintenance Mode and select Aircraft Setup.

Aux Data– Select 'Avidyne PFD". This action will result in the receipt of ARINC 429 data from the PFD for input to the % Power calculations.

Port – Select MFD ARINC port to which the PFD is wired.

Once settings are made, press the "Save" button to return to the Maintenance Mode screen and restart the MFD by pressing "Restart System". After restart, proceed with system checkout.

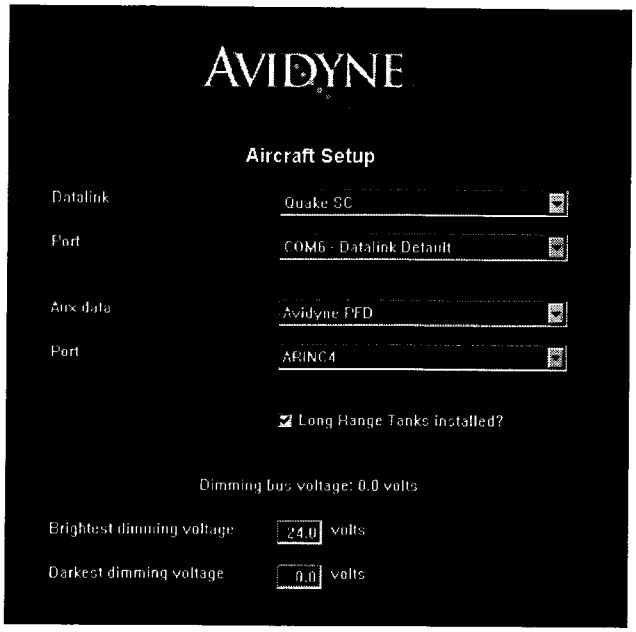

Figure 15 Aircraft Setup Page with Datalink

7.3.11.2 Auxiliary Data Checkout

After the MFD has been restarted, any of the following messages may appear in the message bar on any page and in the message list on the Setup page.

Message	Meaning
PFD is Operating Normally	Verification that pressure altitude and OAT data received by the MFD is valid
PFD is Not Communicating	Pressure altitude or OAT data are not being received by the MFD

7.3.12 Datalink (Optional)

Note: Option not available on all models. MFDs may be equipped with no Datalink, either Narrowcast or Broadcast datalink, or both Datalink types.

To configure the MFD for Datalink access Maintenance Mode and select Aircraft Setup.

7.3.12.1 Narrowcast Datalink Setup

Confirm that the datalink setup fields on the Aircraft Setup page are configured for:

Datalink – Select "Quake SC". This will enable the datalink functionality communication with the internal Datalink transceiver.

Port – Should only be set to RS232 port 6, the Datalink Default.

7.3.12.2 Broadcast Datalink Setup

The MFD supports the Avidyne MLB700 Sirius receiver or the Heads Up XMD076 XM data receiver.

Confirm that the datalink setup fields on the Aircraft Setup page are configured for:

Broadcast– Select "Sirius Radio" or "XM Radio". This will enable the datalink functionality and communication with the satellite data receiver.

> **Note:** "Sirius Radio" and "XM Radio" will not be simultaneously available options. Only the system installed on the aircraft will be available as a configuration option.

Port – Should be set to the RS-232 port wired to the Sirius or XM receiver, nominally RS232 4.

Save settings and restart MFD.

7.3.12.3 Narrowcast Datalink Checkout

Access the MFD Maintenance Mode. Select System Info. Select Datalink Info.

When the optional narrowcast datalink function is enabled, and the proper port is selected on the Aircraft Setup maintenance mode page, the EX5000 is pre-configured for datalink operation. Accessing the Datalink Info page from the System Info utility, which is entered from the Maintenance Mode menu, gives details of the configuration.

Figure 20 depicts the ***Datalink Info*** page. Verify the presence of SC Serial Number and version information on this screen.

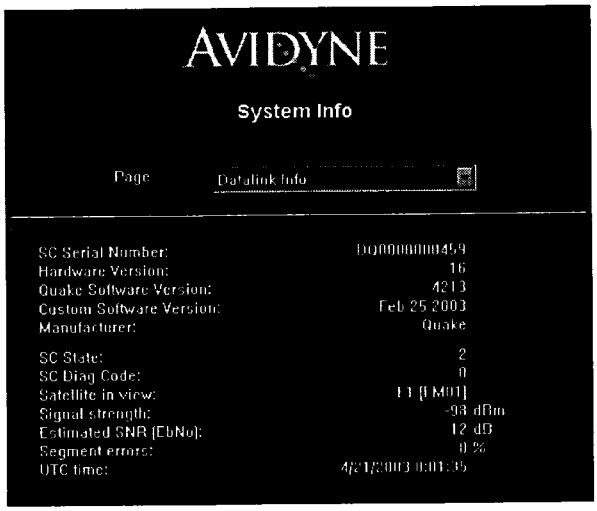

Figure 16 Narrowcast Datalink Info Page

7.3.12.4 Narrowcast Datalink Satellite Reception Confirmation

ORBCOMM satellite network transmits very low power VHF signals that the EX5000 must receive. If the antenna is not properly installed or if there is excessive electromagnetic interference (such as a nearby radio transmitter, ground power cart, or inadequately

grounded avionics), the system will not achieve successful reception. The following steps may be taken to assess system performance.

- Bring the aircraft to an area with the clearest view of the sky to the horizon.
- From Datalink Info table (see Figure 20), monitor for up to five minutes under the following conditions; other avionics off, avionics on, engines at idle, engines at takeoff power. With a satellite in view, the signal strength and quality should peak above the following values:

Maintenance Mode, System Info, Datalink/Narrowcast Info	Trip Page, Narrowcast (2 arrows) Status
"Signal strength" is greater than -118 dBm (-130 is lowest, -100 is highest)	Signal Strength > 4, (scale of 1-10)
"Estimated SNR (EbNo)" is greater than 10 dB	Signal Quality > 4, (scale of 1-10)
"Segment errors: less than 10%	Message Quality = 10, (scale of 1-10)

If the above reception levels are not achieved the following cause and corrective actions may apply.

- The antenna field of view is obstructed. Try moving the aircraft.
- There is a local source of electromagnetic interference.
  - Try shutting off any nearby sources (such as VHF radios, alternators, magnetos, ground power cart).
  - Relocated the aircraft away from potential nearby sources.
  - Check electrical connections and grounds.
  - There is poor satellite coverage. Try again after fifteen minutes.
  - Check the antenna and cable for proper installation.
  - Check the connection between the antenna and its ground plane.

Consult www.avidyne.com for any additional guidance.

7.3.12.5 *Broadcast Datalink Checkout*

Power up the MFD and Sirius or XM Receiver and select the Trip page. Press the Display button to view Broadcast Status (down pointing arrow). If the MFD reports a Receiver ID the receiver is communicating with the MFD and the RS-232 wiring is correct.

Position the aircraft in an area open to the sky. A Signal Quality of Good confirms the receiver is detecting the satellite signals. A Signal Quality of Marginal or Weak may require repositioning the aircraft to better location. A Signal Quality of None is an indication of a bad antenna, cable, connection or receiver.

Refer to the appropriate MFD Pilot's Guide for information activation of a WSI account for weather data over the Sirius network.

Refer to the Heads Up Technology, XMD076 XM Receiver Installation Manual and Activation Instructions. Contact Heads Up Technologies at service@heads-up.com or www.heads-up.com.

After the MFD has been restarted, any of the following messages may appear in the message bar on any page and in the message list on the Setup page.

Message	Meaning
Broadcast is Operating Normally	Verification that the MFD is communicating with the Broadcast Receiver
Broadcast is Not Communicating (After 5 minutes of no communication)	The MFD is not communicating with the Broadcast Receiver. Check power and signal wiring.

7.3.12.6 Broadcast Datalink Satellite Reception Confirmation

The broadcast satellite network transmits signals that are received by an external datalink receiver, which sends the information on to the MFD through a serial connection. If the datalink antenna is not properly installed or if there is excessive electromagnetic interference (such as a nearby radio transmitter or inadequately grounded electronics), the system will not achieve consistent reception. The following steps may be taken to assess system performance.

- Bring the aircraft to an area that has as few obstacles to line-of-sight viewing to the southern horizon as possible.
- Select the Trip page on the MFD.
- Press the Display button until Broadcast (down-pointing arrow) Status is selected.
- The Signal Quality will be reported as Good, Marginal, Weak, or None. If the Broadcast Receiver is working, the antenna and cabling are correct, and the aircraft is in view of at least one Broadcast datalink satellite, the Signal Quality will be "Good" and the Receiver ID will be reported.
- Make note of the Receiver ID for the aircraft owner, who will need it to begin Broadcast datalink service.

If the Signal Quality is not reported as Good, the following cause and corrective actions may apply.

- The antenna field of view is obstructed. Try moving or rotating the aircraft.

Note: if rotation works, the antenna location on the aircraft may not be optimal

- There is a local source of electromagnetic interference.
  - Try shutting off any nearby sources (such as VHF radios, alternators and magnetos).

- Relocate the aircraft away from potential nearby sources.
- Check electrical connections to ensure there is no improper grounding.
- The antenna and cable are not properly installed.
- The antenna may not be properly connected to the ground plane.
- The cable may not be properly connected to the antenna or the EX5000.

Consult www.avidyne.com for any additional guidance.

7.3.12.7 Radar Setup

When Radar is installed select the appropriate MFD settings as shown in the following table:

Configuration Item	MFD Setting	Comment
Radar Sensor	Allied Signal ART2000	ART 2100 is also an available sensor
Park Position	Centered	
Beam Width	7 degrees	
Beam Height	7 degrees	
Enable Gain Control	Checked	
Enable VP	Checked	
Enable Auto Ztilt Control	Unchecked	
Primary Indicator	Checked	
Disable Stabilization	Unchecked	
Enable Automatic Standby	Unchecked	

Press the *Save* bezel key. The MFD must be restarted by pressing the "Restart System" bezel key for the settings to take effect.

7.3.13 Checklist (Optional)

Some aircraft models support the Checklist feature. If Checklists are available for this aircraft, the Checklist pull-down will be available from the Aircraft Setup Page.

Use the Checklist pull-down to select the appropriate aircraft and se5rial number range. Checklists are only available for aircraft listed in the Checklist pull-down.

Note: The current revision of the installed checklists will appear on the splash screen on restarting the MFD. If you modify the Checklist settings in the Aircraft Setup page, restart the MFD and observe the splash screen to verify the current version of the Checklists.

Note: If you are using an OEM-supplied build of Checklist Loader, following the instructions in the manual, "Multi-Function Display Checklist Editor - User's Guide" (600-00144-000, latest revision).

8. Diagrams

This section is not applicable.

9. Special Inspection Requirements

This section not applicable.

10. Application of Protective Treatments

This section is not applicable.

11. Data

This section is not applicable.

12. List of Special Tools

This section is not applicable.

13. For Commuter Category Aircraft

This section is not applicable.

14. Recommended Overhaul Periods

This section is not applicable.

15. Airworthiness Limitation Section

The Airworthiness Limitations section is FAA approved and specifies maintenance required under §43.16 and §91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

There are no additional airworthiness limitations as a result of this modification.

16. Revision

Revisions to this document shall be coordinated through the Boston Aircraft Certification Office, the Kansas City AEG, and the STC holder. Inquiries relating to the ICA should be made to Avidyne Corporation. If you would like to be notified of future revisions to this manual please furnish the information listed below:

Name
Address
City, State, and Zip Code
Part Number of Manual
Current Revision Status of Manual

Please submit this information to:

Avidyne Corporation
55 Old Bedford Road
Lincoln, MA 01773

Warranty Claim Policy Manual

Version 2.0

Table of Contents

Warranty Claim Policy Statement

Columbia Aircraft Manufacturing Corporation (CAM) establishes and maintains a standardized Warranty Claim Policy and Procedure in order to simplify and expedite all incoming claims in conjunction with the CAM Limited Warranty. This policy is in accordance with CAM Limited Warranty signed by the original purchaser of the aircraft at the time of sale.

The policy and procedures stated herein are exclusive to aircraft parts and materials covered under the provisions of the CAM Limited Warranty and do not apply to any product or service of CAM not specified in said warranty.

Service Warranty Exclusions

CAM does not pay warranty reimbursement for the following:

- Work performed on parts materials not covered by, or specifically excluded by the CAM Limited Warranty.
- Work performed that does not result in an actual repair or resolution of the stated discrepancy.
- "Troubleshooting" not specified in an applicable CAM aircraft maintenance manual or pre-approved by CAM.
- Tools, jigs, devices, etc. fabricated or purchased to accomplish warranty covered labor without pre-approval from CAM.
- Any freight charges not pre-approved by CAM.
- Any storage or teardown fees not pre-approved by CAM.
- Any expenses arising from warranty situations, i.e. travel, lodging, car rental, fuel, taxiing, ferrying, etc., unless pre-approved by CAM.
- Sales Tax or any other taxes, fees, fines, or charges not pre-approved by CAM.
- Unspecified miscellaneous items or expenses.
- Any labor hours accumulated in excess of the Service Labor Index without pre-approval by CAM.

NOTE: CAM approval for exclusions can be gained from the Contacts listed in this policy and procedure manual.

1.0 Warranty Claim Form

CAM will only process warranty claims submitted on a completed, current revision SWC-04 claim form. These forms will be supplied by CAM upon request and must include the following:

1.1 Return Material Authorization (RMA)
- a) This number is available from CAM Parts and Warranty Group.

1.2 Service Facility Contact Information
- a) Business name.
- b) Warranty Contact Person and contact phone number.

1.3 Aircraft Information
- a) Aircraft Owner (as registered with the FAA)
- b) Aircraft Model
- c) Aircraft Serial Number (imperative)
- d) Aircraft Hours (Hobbs Time)
- e) Time In Service

1.4 Part Removal Information
- a) Part Number
- b) Part Description
- c) Part Serial Number
- d) Applicable Claim Type
- e) Applicable Fail Code
- f) Applicable Action Code

1.5 Work Performed
- a) Detailed description of labor performed or action taken
- b) If space provided is inadequate, attach separate shop work order
- c) Total labor hours per discrepancy
- d) Total dollar amount claimed per discrepancy

2.0 Return Material Authorization

All parts and materials covered under CAM Limited Warranty that are removed for replacement or repair by CAM must be returned to CAM.

Parts and materials returned to CAM must include the applicable Warranty Claim Form in the package with the parts. In addition, ensure that the following is indicated clearly on the Warranty Claim Form:

- Nature of Discrepancy. Explain the reason for removal (to include the applicable fail code as referenced on Warranty Claim Form)
- Part Number, Serial Number, and Description
- Serial Number of the Aircraft (i.e. 41501, etc.) and Hobbs Time

Parts and materials returned to CAM Service Warranty Department without this information will result in warranty claim denial and return of parts to initiator. The warranty payment may be reduced to cover CAM processing costs in these instances. (see Section 3.0).

Return Parts to:
Columbia Aircraft Manufacturing Corporation
Service Warranty Department - Returns
22550 Nelson Rd.
Bend, OR 97701

3.0 Claim Disposition

3.1 Work performed is covered under the provisions of the CAM Limited Warranty.

a) If uncertain about warranty coverage, contact CAM.

3.2 Warranty Claim must be submitted per the instructions set out in Section 1.0.

3.3 Warranty Claim must be submitted within 30 calendar days of work performed.

a) Claims received outside the specified time frame may be denied.

3.4 Parts and materials removed in conjunction with RMA and Warranty must be returned to CAM prior to disposition of claim.

a) Parts not returned within the specified time frame may result in claim denial and non issuance of credit for warranty parts/materials shipped.

b) CAM may request expedited shipping and will be responsible for those charges.

3.5 Warranty claims will be dispositioned within 30 business days after receipt by CAM.

a) Claimant will be notified either in writing or electronically of any adjustments made by CAM to claim labor hours/ amount due within 30 business days of receiving warranty claim form.

Note: If a claim is denied, no credit will be issued. If the denial is disputed see Section 4.0.

4.0 Warranty Claim Dispute

If claim denial is disputed:

4.1 Claimant may submit a written or electronic attachment of explanation for claim dispute and must reference.
   a) Warranty Claim number/RMA number.
   b) Specific disputed discrepancy.

4.2 Notification of claim dispute must be submitted within 30 calendar days of Denial of original claim.
   a) Dispute notification received after 30 calendar days from original claim denial may not be considered for review.

4.3 Claimant will be contacted within 30 business days of receipt of disputed Warranty claim and advised as to final claim disposition.

5.0 Freight Charges Policy

5.1 CAM will pay to expedite warranty Parts or Materials shipments.

a) CAM will pay for Second Day as necessary for out bound shipments to your location.

b) Requestor can pay the difference in price between Second Day and Air Freight or over night charges for this service.

c) For warranty return parts to CAM, sender to include actual shipping costs as part of the warranty claim to be paid by CAM. Warranty return parts to CAM should be shipped UPS ground unless advised otherwise.

d) Warranty shipments or returns to other OEMs will be shipped as per the specific warranty return procedure for that OEM.

5.2 CAM will pay truck freight on warranty parts or materials if applicable, but require pre-approval by CAM.

a) Non-warranty parts freight costs are not the responsibility of CAM.

5.3 CAM will issue a pre-paid UPS call tag for return shipment of warranty parts or materials shipped in error by CAM.

5.4 CAM cannot ship Hazardous Material (Hazmat) by air.

a) All shipments of Hazardous Materials will be shipped from CAM UPS ground.

5.5 Shipments of non-warranty parts or materials to service facilities whose CAM account has aged past 60 days or has exceeded established credit limits will be shipped C.O.D. until the overdue account is cleared.

5.6 International Shipping charges.

a) CAM will be responsible for second day air shipping charges.

b) Any additional shipping charges or special packaging charges will be the responsibility of the requestor.

c) A 5% handling charge may be added to line item (b).

5.7 Service Bulletin Shipping charges

a) If the Service Bulletin mandates an A.O.G. event, CAM will pay for overnight shipping charges.

b) All other Service Bulletin part shipments will be paid by CAM up to second day. Requestor will be liable for any additional expediting charges.

Ordering Deadlines

IMPORTANT

All Parts and Material orders need to be received by our Parts and Warranty Administration by 11:00 AM Pacific Standard Time for shipping that day and is dependant on parts or material availability. Orders received after 11:00 AM Pacific Standard Time will be shipped within 24 business hours of receipt.

Orders requiring LTL Truck Freight will be processed within 72 business hours of receipt and will require a customer Purchase Order for payment unless per-approved for billing by the Warranty Administrator as previously stated.

It is the intent of CAM to process all orders in an expeditious manner; however CAM makes no representation that parts or materials will be available for shipment within these time periods. Back orders will receive priority handling by CAM.

Columbia Warranty Claim Manual

Service Labor Index - Columbia 300/350/400 Models

Items marked (*) are not covered under the provisions of CAM Limited Warranty

	Labor Hours
Chapter 21	
ECS fan replacement	1.0
ECS servo replacement	1.0
ECS valve replacement	2.0
ECS control panel replacement	3.0
Chapter 24	
Voltage regulator replacement (each)	1.0
Secondary alternator replacement	2.5
Alternator belt replacement	1.5
Solenoid replacement (each up to 3)	1.5
Chapter 25	
Front seat removal (ea.)	0.5
Removal of rear seat assembly	0.5
Replacement of seat tracks (per seat including removal)	2.0
Interior side panel removal fwd. (ea.)	0.25
Interior side panel removal aft (ea.)	0.25
Overhead console removal and reinstallation	0.5
Fwd. upper interior panel removal and re-installation (ea.)	0.5
Center console and radio rack panel removal	0.5
Instrument panel assembly removal	6.0
Instrument panel assembly reinstallation	10.0
Circuit breaker panel removal and reinstallation	3.0
Master switch panel removal and re-installation	2.0
Rocker switch panel removal and reinstallation	2.0
Trim panel removal and reinstallation	2.0
Trim panel adjustment	1.0
Flap switch panel removal and reinstallation	4.0
Annunciator panel removal and reinstallation	0.5
Aural warning unit removal and reinstallation	1.5
Front seat belt inertia reel removal and reinstallation (ea.)	1.5
Rear seat belt inertia reel removal and reinstallation (ea.)	1.5
Fwd. carpet removal and reinstallation (pilot and copilot)	1.0
Center carpet removal and reinstallation (passenger)	1.5
Rear carpet removal and reinstallation (baggage)	1.0
Headliner removal and reinstallation	10.0
ELT removal and reinstallation	0.5
Avionics bay access panel removal and reinstallation	0.25

	Labor Hours
Chapter 27	
Aileron removal and reinstallation (ea.)	1.0
Aileron trim servo removal and reinstallation	1.5
Aileron servo tab removal and reinstallation	1.0
Elevator removal and reinstallation	2.5
Elevator trim servo removal and reinstallation	4.0
Rudder removal and reinstallation	0.75
Rudder limiter assembly removal and re-installation	3.0
Flap removal and reinstallation (ea.)	1.0
Flap motor assembly removal and reinstallation	2.5
Chapter 28	
Fuel level sensor removal and replacement (ea. separate incidents)	3.0
Low fuel level sensor removal and replacement (ea.)	4.0
Fuel tank drain removal and reinstallation	3.0
Fuel selector assembly removal and reinstallation	4.0
Fuel strainer assembly removal and replacement	2.0
Auxiliary fuel pump removal and replacement	1.5
Fuel boost pump armed light	1.5
Chapter 31	
Hobbs meter removal and reinstallation	0.5
Oil pressure switch removal and reinstallation	1.0
Air switch removal and reinstallation	1.0
Chapter 32	
Main gear wheel pant removal and reinstallation (ea.)	0.5
Main tire removal and reinstallation	1.0
Main gear leg removal and reinstallation (ea.)	1.5
Main gear re-shimming	1.5
Landing gear box bushing removal and reinstallation (ea.)	0.5
Nose wheel pant removal and reinstallation	0.5
Nose tire removal and reinstallation	1.0
Nose gear strut removal and reinstallation	2.0
Nose gear strut servicing	0.25
Brake master cylinder removal and reinstallation (ea.)	0.75
Parking brake valve removal and reinstallation	1.0
Chapter 33	
Instrument flood bar removal and reinstallation	1.25
Landing/taxi light bulb removal and reinstallation (ea.)	2.0
Landing/taxi light lens removal and reinstallation	1.5
Position/strobe light assembly removal and reinstallation	0.5
Chapter 34	
Pitot tube removal and reinstallation	1.0
Altitude encoder removal and reinstallation	1.0
Stall detector removal and reinstallation	0.25
Stall warning buzzer removal and reinstallation	0.5
Magnetic compass removal and reinstallation	0.5
Forward power booster removal and re-installation	2.0
Aft power booster removal and reinstallation (ea.)	2.0

	Labor Hours
Chapter 52	
Cabin door removal and reinstallation (ea.)	1.0
Emergency door release cable removal and reinstallation	1.0
Baggage door removal and reinstallation	1.25
RH cabin door lock removal and reinstallation	1.5
LH cabin door lock removal and reinstallation	1.0
Baggage door lock removal and reinstallation	1.0
Cabin door switch removal and reinstallation (ea.)	1.25
Baggage door switch removal and reinstallation	0.75
Door seal pump removal and reinstallation	3.0
Door seal pump dump valve removal and reinstallation	1.0
Door seal pump pressure switch removal and reinstallation	1.0
Pneumatic door seal replacement	1.0
Chapter 53	
Horizontal stabilizer removal and reinstallation	4.0
Chapter 56	
Wing removal and reinstallation	16.0
Chapter 71	
Cowl removal and reinstallation	0.5
Chapter 74	
Ignition switch removal and reinstallation	1.0
Chapter 76	
Throttle cable removal and reinstallation	4.0
Propeller cable removal and reinstallation	4.0
Mixture cable removal and reinstallation	4.0
Induction heat cable removal and reinstallation	2.0
Chapter 77	
Tachometer removal and reinstallation	0.5
Manifold pressure gauge removal and reinstallation	0.5
Manifold pressure transducer removal and reinstallation	0.5
Fuel pressure/flow gauge removal and reinstallation	0.5
Fuel pressure/flow transducer removal and reinstallation	0.5
CHT gauge removal and reinstallation	0.5
EGT gauge removal and reinstallation	0.5
Oil pressure gauge removal and reinstallation	0.5
Oil pressure transducer removal and reinstallation	1.0
Fuel boost pump pressure switch removal and reinstallation	0.5
Chapter 78	
Exhaust system removal and reinstallation (per side)	1.0

CAM Contact Information:

Parts and Warranty Group:
Toll Free: 877-390-5454
FAX 541-318-1177
Email: partsandwarranty@flycolumbia.com

Technical Support Group:
Toll Free: 888-599-8660
Fax: 541-318-1177
Email: product.support@flycolumbia.com

COLUMBIA AIRCRAFT COMPONENT WARRANTIES

PRODUCT	COMPONENT(S)	WARRANTY	CONTACT PH. #	CONTACT REP.
COLUMBIA	AIRCRAFT	3 year 900 hours OR 5 year 900 hours	877-390-5454	Parts and Warranty Partsandwerranty@flycolumbia.com
AVIDYNE	Multi-Funtion Display / Primary Flight display	24 months from delivery on MFD and PFD	888-723-7592	Technical Services
ARTEX	Battery Pack ELT (452-3063)	1 yr. from date of install	800-547-8901	Gary Weiss x309
CONCORDE BATTERY CORP	Battery 12 volt (RG 1215) Battery 24 volt (G230S)	If failure occurs 180 days from date of install or 300 hours of operation (replace for free). 2 years or 1200 hours of operation which ever occurs first. Should the battery fail after 180 day or 300 hours but within 2 years or 1200 hours the battery will be replaced or credit issued at a prorated amount based on the days or operation hours of useful service life, whichever is greater	877-390-5454	CAM Parts and Warranty Partsandwerranty@flycolumbia.com
DUKES RESEARCH & MFG. INC	Electric Fuel Pump 24vdc	1yr. from date of install or 1000 hours whichever comes first.	818-998-9811	Warranty Dept.
EDMO DISTRIBUTERS	switches, hobbs, light modules	1 yr. from date of purchase	800-235-3309	Warranty Dept.
BF GOODRICH CORPORATION	L 3 Gyro w/slip indicator 26v / Antenna Stormscope	18 months from date of shipment	800-253-9525	Warranty Dept.
HARTZELL PROPELLER INC	Prop w/ Spinner (D-4245LC40FG)	1000 hrs. or 1 year from the date first placed in service.	937-778-4392	Warranty Dept.
KELLY AEROSPACE	Alternator	1yr. on new components / 6 mnths. on overhauled.	888-461-6077	Warranty Dept.
McCAULEY PROPELLER SYSTEMS	Prop Governor	Prop governor / 3yr. from time of installation.	800-621-7787	Warranty Dept.
MID-CONTINENT INSTRUMENTS	Altimeter (15626-0199) Airspeed Ind. (25025-0178)	1 yr. on new units and overhauled. 90 days on repairs.	800-821-1212	Warranty Dept.
PARKER HANNIFIN CORPORATION	Brake cylinder (10-19J)	2 yr. from date of install.	440-937-6211	Warranty Dept.
PRECISE FLIGHT	02 System, Speedbrakes	Speed brake - 5yr. or 72 months from date of sale or whichever comes first./ 02 sys. 2yr. or 36 months from date of sale or whichever comes first.	541-382-8684	Dave Craig
SAFE FLIGHT	Outline lift detector (C-98891-1)	1 yr. from retail date.	914-220-1160	Warranty Dept.
SHADIN CORPORATION	Panel Display (912041T-D)(300 only)	Orig. was 1yr. / 5 yr. on mini-flow and micro-flow / 1 yr. on transducer.	800-328-0584	Warranty Dept.
S-TEC CORPORTATION	Programmer Computer(01192-33-0t-45) Roll Servo 90701-3)	2 years from time of installation.	800-872-7832	Cindy Haines / Jay Gartman
TELEDYNE CONTINENTAL	Alternator Hub-Assy(641670A2)	Life of engine warranty.		Any TCM Distributor
TELEDYNE CONTINENTAL	Alternator (646843)	Life of engine warranty.		Any TCM Distributor
TELEDYNE CONTINENTAL	Engine	Premium = 3 years for parts and labor. Platinum = 5 years total which includes: 2 years Parts and Labor and year 3, 4, and 5 Parts only.		Any TCM Distributor
TRANS-CAL INDUSTRIES	Encoder Altitude (SSD120-30A-R5232)	18 months from date of purchase.	800-423-2913	Warranty Dept.
UNITED INSTRUMENTS	Altimeter-Lighted (5934PAD-3-A-609-28v)	2 1/2 years from date of manufacture	800-635-3373	Warranty Dept.
GARMIN AT	GMA430 Audio Panel only(011-00401-10)	3 years from date of purchase	800-742-0077	Warranty Dept.
WHELEN ENGINEERING CO.	Light Wing Tip/Position Green (A600PG-28)	1 year	860-526-9504	Warranty Dept.

Warranty Information for Non-Lancair Parts: For Lancair Internal Information Only.

THE LANCAIR COMPANY

Owner Information:	Model LC41-550FG
Rudy Enghoim	S/N 41044
27 Storer St.	N#N611RJ
Portland, ME	
207-871-8993	

Equipment Mfr	Part and Description	Serial #
CO Guardian	452-201-003 CO Detector	21015
1951 E. Airport Dr.		
Tucson, AZ 85706		
1-800-639-7139		
Equipment Mfr	**Part and Description**	**Serial #**
Name: S-TEC Corporation		
One S-TEC Way	690114 Light Set, Marker Beacon, Type MKL-351	0442-10939
Municipal Airport	HK-852-1 Turn Coordinator, System 55	0444-13755G
Mineral Wells, TX 76067-9236 USA		
Phone: 800-872-7832	HK-852-3 55X Programmer Computer, Install Kit, GP	0446-7544AJ/AE
Fax: (940) 325-0972	HK-852-4 Roll Servo, Install Kit, System 55	0441-19044BCEFH
	HK-852-5 Pitch Servo, Install Kit, System 55	0443-15620BCEFH
	HK-852-6 Transducer, Install Kit, System 55	0441-32421AA
	THK-852-1 Trim Relay, Install Kit, System 55	0444-364A
Equipment Mfr	**Part and Description**	**serial#**
Name: Teledyne Continental Motors	LH and RH Turbo	04090722/04090725
Aircraft Products	Controller	HIN00306
P.O. Box 90	842238-2 Starter, Engine	04 89 0106
RA: 2039 Broad St. 36615	ALX-9524 Alternator, Engine, Right	E010140
	TSIO-550-C Engine, 6 Cylinder	914300
Phone: (251) 436-8291	TSIO-550-C Engine , 6 cylinder, Platinum 500 CID Non Turbo	NA
Fax: (251) 432-7352	Wastegate	HIN00190
Equipment Mfr	**Part and Description**	**Serial #**
Name: Trans-Cal Industries	SSD120-30A RS232 Encoder, Altitude	SRA9721
16141 Cohasset St.		
Van Nuys, CA 91406 USA		
Phone: 800-423-2913		
Fax: (818) 787-8916		
Equipment Mfr	**Part and Description**	**Serial #**
Name: United Instruments	5934PADJ-A.609 Altimeter Lighted35K-Ft.	436306
3625 Comotara Ave.		
Wichita, KS 67226 USA	8130-B.857 Airspeed Ind. - True Airspeed, KTS	186819
Phone: 800-835-3373		
Fax: (316) 636-9243		
Equipment Mfr	**Part and Description**	**Serial #**

THE LANCAIR COMPANY

Owner Information:	Model LC41-550FG
Rudy Enghiom	S/N 41044
27 Storer St.	N# N611RJ
Portland, ME	
207-871-8993	

Equipment Mfr		Serial #
Name: Valavionics	CLA 500 Light Dimmer	5912
P.O. Box 13025		
3280 20th Street SE		
Salem, OR 97302 USA		
Phone: (503) 370-9429		
Fax: (503) 370-9885		
Equipment Mfr	**Part and Description**	**Serial #**
Name: Warden Fluid Dynamics	7010-1773 Air Pump, Pressure	33609190
203 North 36th St.		
Seattle, WA 98103		
Phone: 800-444-4946		
Equipment Mfr	**Part and Description**	**Serial #**
Name: Wheelen Engineering Co. Inc.	A413A-HAD-CF Power Supply, Strobe Light	33095
Route 145		
Winthrop Road		
Chester, CT 06412 USA		
Phone: (860) 526-9504 X2252		
Fax: (860) 526-2009		
Equipment Mfr	**Part and Description**	
Name: Zeftronics	R1530L Voltage Regulator	R15073/R15079
1622 E. Whaley St.		
Longview, TX 75601 USA		
Phone: (903) 758-6661		
Fax: (903) 236-9766		
Name: Avidyne	850-00015-000 Magnetometer, Entegra	20953
55 Old Bedford Road	850-00013-200 EX 5000 MFD	22017254
Lincoln, MA 01773	850-00018-000 Entegra PFD	22963354
Phone:	DAU Aquistion unit	9
Equipment Mfr	**Part and Description**	**Serial #**

Warranty Information for Non-Lancair Parts: For Lancair Internal Information Only.

THE LANCAIR COMPANY	**Owner Information:**	
	Rudy Engholm	Model LC41-550FG
	27 Storer St.	S/N 41044
	Portland, ME	N#N611RJ
	207-871-8993	

Equipment Mfr	Part and Description	Serial #
Heads Up Technologies	XMD 076-01 Weather Receiver	806000659
2033 Chennault Dr. Suite 100	XMRANT 01 XM Antenna	4021140
Carrollton TX 75006		
972-980-4890		

Equipment Mfr	Part and Description	Serial #
Name: Artex Aircraft Supply		
14405 Keil Road NE	453-0190 ELT-200 Main Assembly EXP.	E07402
Aurora, OR 97002 USA		
Phone: 800-547-8901		
Fax: (503) 678-7930		

Equipment Mfr	Part and Description	Serial #
Ryan International Corp.	70-2400 9900B Processor	NA
4800 Evanswood Dr,	70-2420 9900BX Processor	NA
Columbus, OH 43229		
614-885-3303		

Equipment Mfr	Part and Description	Serial #
Name: L3 Corporation		
	504-0110-912 Gyro	5040110912251 24

Equipment Mfr	Part and Description	Serial #
LoPresti	LSM-500-349-11 Light Lens assy.	NA
2620 Airport North Dr.	LSM-500-200-114 Light Ballast	NA
Vero Beach, FL 32960		
1-800-859-4757		

Equipment Mfr	Part and Description	Serial #
Name: Dukes Research & Mfg. Inc.	5173-00-3 Pump, Fuel, Electric, 12VDC, 2 Speed	202
9060 Winnetka Ave.		
Northridge, CA 91324		
Phone: (818) 998-9811		
Fax: (818) 700-8361		

Equipment Mfr	Part and Description	Serial #
Name: KGS Electronics	RB-125-KGS Inverters	4086-4079-4077
418 East Live Oak Ave.		

THE LANCAIR COMPANY	**Owner Information:**	
	Rudy Engholm	Model LC41-550FG
	27 Storer St.	S/N 41044
	Portland, ME	N#611RJ
	207-871-8993	

Equipment Mfr	Part and Description	Serial #
Name: Hartzell Propeller Inc.	HC-H3YF-1RF Propeller Assembly and Hardware	LX58B
One Propeller Place		
Piqua, OH 45356 USA		
Phone: (937) 778-4392		
Fax: (937) 778-4391		

Equipment Mfr	Part and Description	Serial #

Equipment Mfr	Part and Description	Serial #
Name: McCauley Propeller Systems	D-20309-39 Governor, Propeller	40727
Dept. 766		
P.O. Box 766		
Wichita, KS 67201		
Phone: 800-621-7767 X585		

Equipment Mfr	Part and Description	Serial #
Name: Mid-Continent Instruments	MD160-4 Map/Fuel Flow	J04-11503
9400 E. 34th Street North	MD162-5 Oil Temp/Press.	J04-11508
Wichita, KS 67226	MD163-2 Fuel Level W/LED's	J04-11516
Phone: 800-345-7599	MD158 Dual Ammeter	F04-11426
	MD161-2 CHT/ TIT	J04-11504
Fax: (818) 786-2734	MD165-4 Tachometer	J04-11523

Equipment Mfr	Part and Description	
Name: Precise Flight Inc.	4034-12-1 Cartridge, Speedbrakes	982457/982458
63120 Powell Butte Road	4034-12-2 ALC, Speedbrakes	ALC 0671
Bend, OR 97701 USA		
Phone: (541) 382-8684		
Fax: (541) 388-1105		

Equipment Mfr	Part and Description	Serial #
Name: Garmin		
1200 East 151st Street	GTX 330 Transponder	NA
Olathe, Kansas 66062	GTX-327Transponder	83718151
Phone:	GMA-340 Audio Panel	96269234
	GNS-430 GPS/ Nav/Com Kit	97123081/97122415

Equipment Mfr	Part and Description	Serial #
Name: Safe Flight	C-98807-1 Lift Transducer (with mounting plate)	285
20 New King Str.		

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	United Instruments
Phone:			3625 Comotara Ave.
Fax:			Wichita, KS 67226 USA
		Phone:	800-835-3373 Fax: (316) 636-9243

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircrsft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
5934PD3-A 616 Altimeter-Lighted 20K Ft.	436306
7040-C 182 Vertical Speed Indicator	NA
8130-B 793 Airspeed Indicator-True Airspeed, KTS	186819

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Safe Flight
Phone:			20 New King St.
Fax:			White Plains, NY 16004 USA
		Phone:	(914) 946-9500 Fax: (914) 946-7882

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	
C-98807-1 Lift Transducer (with mounting plate)	285

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	United Instruments
Phone:			3625 Comotara Ave.
Fax:			Wichita, KS 67226 USA
		Phone:	800-835-3373 Fax: (316) 636-9243

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
5934PD3-A 616 Altimeter-Lighted 20K Ft.	436306
7040-C 182 Vertical Speed Indicator	NA
8130-B 793 Airspeed Indicator-True Airspeed, KTS	186819

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Artex Aircraft Supply
Phone:			14405 Keil Road, NE
Fax:			Aurora, OR 97002 USA
		Phone: 800-547-8901	Fax: (503) 678-7930

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
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ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
453-0190 ELT-200 Main Assembly	E07402

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Garmin
Phone:			1200 East 151st Street
Fax:			Olathe, Kansas 66062
		Phone: 800-235-3300	Fax: 800-828-0623

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
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ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
GTX 330 Transponder	NA
010-00188-03 GTX-327 Transponder	83718151
GMA-340 AUDIO PANEL	96269234
GNS 430 GPS/NAV/COM KIT	9712308/97122415

This should be 97123081 #1 GPS

This is Correct #2 GPS

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		KGS Electronics	
Phone:		418 East Live Oak Ave.	
Fax:		Arcadia, California 91006	
		Phone:	Fax:

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
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ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
RB-125-KGS INVERTER	4086-4079-4077

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	S-TEC Corporation
Phone:			One S-TEC Way Municipal Airport
Fax:			Mineral Wells, TX 76067-9236 USA
		Phone: 800-872-7832	Fax: (940) 325-0972

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
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ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
690114 Light Set, Marker Beacon, Type MKL-351	0442-10939
HK-852-1 Turn Coordinator, System 55	0444-13755G
HK-852-5 Pitch Servo, Install Kit, System 55	0443-15620BCEFH
HK-852-6 Transducer, Install Kit, System 55	0441-32421AA
HK-852-3 GPSS Programmer Computer, Install-Kit, GP	0446-7544AJ/AE
HK-852-4 Roll Servo, Install Kit, System 55	0441-19044BCDEFH
THK-852-1 Trim Relay, Install Kit, System 55	0444-364A

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
ɾor if other than Owner		Manufacturer Information	
Operator:		Name:	Trans-Cal Industries
Phone:			16141 Cohasset St.
Fax:			Van Nuys, CA 91406 USA
		Phone:	800-423-2913 Fax: (818) 787-8916

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
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ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
SSD-120-30A RS232 Encoder, Altitude	SRA9721

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Valavionics
Phone:			P.O. Box 13025 3280 20th Street Se
Fax:			Salem, OR 97302 USA
		Phone: (503) 370-9429	Fax: (503) 370-9885

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

pment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
CLA 500 Light Dimmer	5912

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Zeftronics
Phone:			1622 E. Whaley St.
Fax:			Longview, TX 75601 USA
		Phone: (903) 758-6661	Fax: (903) 236-9766

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☑ Portable Independent Backup

Equipment Part Number and Description	Serial Number
R1503L Voltage Regulator	R15073/15079

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		CO Guardian	
Phone:		1951 E. Airport Dr.	
Fax:		Tuscan,AZ 85706	
		1-800-639-7139	

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
452-201-0033 Carbon Monoxide	21015

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Avidyne
Phone:			55 Old Bedford Road
Fax:			Lincoln, MA 01773
		Phone:	Fax:

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
DAU	9
850-00018-000 ENTEGRA PFD	22963354
850-00013-200 EX5000	22017254
850-00015-000 MAGNETOMETER	20953

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Teledyne Continental Motors Aircraft Products
Phone:			P.O. Box 90 RA: 2039 Broad St. 36615
Fax:			Mobile, AL 36601 USA
		Phone:	(251) 436-8291 Fax: (251) 432-7352

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
L/R TURBO	04090722/04090725
CONTROLLER	HIN00306
B46238-2 Starter, Engine 646238-2	04 89 0106
TSIO 550 Engine, 6 Cylinder	914300
ALX-9524 Alternator, Engine	E010140
WASTEGATE	HIN00190

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Precise Flight, Inc.
Phone:			PO Box 7168
Fax:			Bend, OR 97708 USA
		Phone: (541) 382-8684	Fax: (541) 388-1105

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
9-Dec-04	9-Dec-04	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
4034-12-1 Install Kit, Cartridge, Speedbrakes	982457/982458
4034-12-2 Install Kit, ALC Speedbrakes	ALC0671
LA53311700 Rev. E2 Annunciator Assembly	NA
SA01060SE Semi Portable Oxygen System	NA

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Dukes Research & Mfg. Inc.
Phone:			9060 Winnetka Ave.
Fax:			Northridge, CA 91324 USA
		Phone: (818) 998-9811	Fax: (818) 700-8361

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
5173-00-3 Pump, Fuel, Electronic, 12VDC, 2 Speed	202

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Warden Fluid Dynamics
Phone:			203 North 36th St.
Fax:			Seattle, WA 98103 USA
		Phone:	800-444-4946 Fax: (360) 694-1768

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☑ Portable Independent Backup

Equipment Part Number and Description	Serial Number
7010-1773 Air Pump, Pressure	33609190

Warranty Application

Registered Owner Information		Installing Agency	
Name:	Rudy Engholm	Name:	The Lancair Company
Address:	27 Storer St.	Address:	22550 Nelson Road
City:	Portland	City:	Bend
State and Postal Code:	ME 04102	State and Postal Code:	Oregon 97701
Country:	USA	Country:	USA
Phone:	207-871-8993	Phone:	(541) 318-1144
tor if other than Owner		Manufacturer Information	
Operator:		Name:	Wheelen Engineering Company Inc.
Phone:			Route 145 Winthrop Road
Fax:			Chester, CT 06412 USA
		Phone: (860) 526-9504 Ext. 2252	Fax: (860) 526-2009

Aircraft Information

Manufacturer:	Model #	Serial #	Registration #
e Lancair Company	LC41-550FG	41044	N611RJ
Warranty Start Date:	**Installation Date:**	**Aircraft Hours:**	**Work Order Reference:**
12/9/2004	12/9/2004	3.5	41044-720

ɔment Information

☑ New ☐ Retrofit ☐ Demo ☐ Spare ☐ Fixed Backup Reserve ☐ Portable Independent Backup

Equipment Part Number and Description	Serial Number
A413A-HAD-CF Power Supply, Strobe Light	33095

N611RJ has a Platinum engine

CONTINENTAL MOTORS

PLATINUM ENGINE WARRANTY

Each Platinum aircraft engine shipped from Teledyne Continental Motors' plant on or after August 1, 1999 is warranted as follows:

1. (a) For a period of twenty-four (24) months or until expiration of the recommended Time Between Overhaul (TBO) of the engine covered by this warranty, whichever occurs first, after the warranty activation date Teledyne Continental Motors (TCM) will at its option repair or replace on an exchange basis any engine, component or part manufactured or supplied by it which within the applicable twenty-four (24) month or TBO period is returned to a TCM representative authorized to handle the engine covered by this warranty and which upon examination is found to the satisfaction of TCM to be defective in material or workmanship. The warranty activation date is the date the engine is first operated for any use or the 180th day after TCM's invoice date, whichever occurs first.

   (b) TCM will pay for reasonable labor costs associated with repairs or replacements under paragraph 1(a) under this warranty and for "troubleshooting" costs associated with identifying the need for such repairs or replacements when coordinated through an authorized TCM representative. The amount of repair and replacement labor costs allowed will be in accordance with the latest revision of the warranty labor allowance schedule, Form X30552, published by TCM. The amount of "troubleshooting" costs allowed will be the reasonable costs under the circumstances of identifying the need for such repairs or replacements, but in no event will the "troubleshooting" costs allowed exceed fifteen percent (15%) of the labor costs associated with such repairs or replacements allowed by TCM. No "troubleshooting" cost allowance will be made where the need for repairs or replacements is identified in the course of overhaul, routine maintenance or on the basis of an obvious defect.

   (c) TCM will pay transportation costs in connection with the repair or replacement of any engine, component or part found to the satisfaction of TCM to be defective in material or workmanship under paragraph 1(a) of this warranty. The engine, component or part must be shipped prepaid to the repair facility designated by TCM. Transportation cost reimbursements for engines will be the actual surface freight charge or $500.00, whichever is less. Engines must be described on the bill of lading as follows: "Internal combustion engine, other than Radial Cyl RVNX $5.00". Transportation cost reimbursement for components or parts will be the actual surface freight charge for shipment of the component or part or the currently published UPS surface rate schedule, whichever is less.

2. (a) After the expiration of the applicable twenty-four (24) month period described above and before the expiration of an additional thirty-six (36) month period or expiration of the applicable recommended TBO for the engine covered by this warranty, whichever occurs first, TCM will, except as excluded below, at its option repair or replace on an exchange basis any component or part manufactured or supplied by it which is found to the satisfaction of TCM to be defective in material or workmanship. During this period TCM reserves the right at its option to replace the defective component or part with either a new or rebuilt engine or part. During this period TCM will not assume any responsibility for the repair or replacement of engine accessories, i.e. parts which have been purchased by TCM from a manufacturer as a complete and finished unit and included in the assembly of an engine without altering the unit, including, but not limited to Unison® magnetos and harnesses, Precision Airmotive Corporation® carburetors and fuel controls, Electrosystems® starters and alternators and Alliedsignal® and Consolidated Fuel Systems® turbochargers. During this period such engine accessories will be subject to such warranty coverage as may be provided by their manufacturer.

   (b) In the event that TCM elects to repair in the field, rather than replace, any component or part under paragraph 2(a) of this warranty, TCM will pay labor costs for the repair of the component or part only. The amount of repair labor costs allowed will be in accordance with the latest revision of the warranty labor allowance schedule, Form X30552, published by TCM. TCM will not assume any

responsibility for labor costs for the removal and/or re-installation of the engine or part, costs associated with "troubleshooting" or any other labor costs associated with repairs or replacements under paragraph 2(a) of this warranty.

(c) TCM will not assume any responsibility for transportation costs associated with repairs or replacements under paragraph 2(a) of this warranty.

3. The coverage under this warranty applicable to cylinder assemblies and related parts shall be subject to the terms, conditions and limitations set forth in the applicable TCM TopCare[SM] Cylinder Warranty.

4. Repair or replacement of any engine or part under this warranty will not extend the period of warranty coverage set forth above.

5. This warranty applies only to engines in which parts manufactured or supplied by TCM or parts manufactured pursuant to an FAA Parts Manufacturer Approval have been used and nothing contained herein should be construed as a warranty by TCM of any engine or part not manufactured or supplied by TCM. TCM accepts no responsibility for the failure of any engine or part which it does not manufacture or supply or damage resulting from such damage.

6. This warranty applies only to engines which have been installed, inspected and maintained in accordance with the instructions for continued airworthiness, including compliance with all applicable service bulletins, issued by TCM, the aircraft manufacturer or any accessory or component manufacturer. Performance of recommended inspections and maintenance must be documented by appropriate logbook entries and the logbook must accompany any engine being returned for warranty consideration.

7. This warranty does not apply to any engine, component or part manufactured or supplied by TCM which (1) has been subject to misuse, neglect or accident; (2) has been installed, repaired, maintained or altered in any way that in the judgment of TCM has adversely affected the condition of the engine; (3) has been operated inconsistent with TCM and aircraft manufacturer recommendations and limitations (such as, but not limited to engine RPM, temperature, manifold pressure, fuel flow and proper system adjustment) or (4) has been changed from its original FAA certificated configuration.

8. TCM will not be responsible for repair or replacement of any engine, component or part damaged or worn as a result of corrosion, pre-ignition/detonation, operation with non-calibrated engine gauges, improper fuel system adjustment, non-TCM approved fuel and oil grades or additives or installation of parts, components or accessories that alter the engine's original type design.

9. The provisions of this warranty do not apply to normal maintenance service (such as engine tune-ups, adjustments, inspections, engine or component overhaul resulting from time between overhaul (TBO) recommendations, etc.) or to the replacement of normal service items (such as spark plugs, filters, hoses, belts, etc.).

10. TCM reserves the right to change any engine or part specifications or prices without incurring any responsibility with regard to engines or parts previously sold or replaced.

11. THIS WARRANTY IS A WARRANTY TO REPAIR OR REPLACE AND NOT A WARRANTY OF THE CONDITION OR FUTURE PERFORMANCE OF THE PRODUCTS WHICH IT COVERS. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, SPECIFICALLY, BUT WITHOUT LIMITATION, THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL TCM BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY DEFECT IN ANY ENGINE OR PART, ARISING OUT OF THE FAILURE OF ANY ENGINE OR PART TO OPERATE PROPERLY, OR ARISING OUT OF ANY BREACH OF THE WARRANTY MADE HEREIN. No person is authorized to give any other warranty or to assume any additional obligation or liability on behalf of TCM.

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A Teledyne Technologies Company
Mobile, Alabama 36601

CONTINENTAL MOTORS

NEW ENGINE WARRANTY

Each new aircraft engine shipped from Teledyne Continental Motors' plant on or after August 1, 1999 is warranted as follows:

1. (a) For a period of twelve (12) months or one thousand (1000) hours of operation, whichever occurs first, after the warranty activation date Teledyne Continental Motors (TCM) will at its option repair or replace on an exchange basis any engine, component or part manufactured or supplied by it which within the applicable twelve (12) month or one thousand (1000) hour period is returned to a TCM representative authorized to handle the engine covered by this warranty and which upon examination is found to the satisfaction of TCM to be defective in material or workmanship. The warranty activation date is the date the engine is first operated for any use or the 180th day after TCM's invoice date, whichever occurs first.

   (b) TCM will pay for reasonable labor costs associated with repairs or replacements under paragraph 1(a) of this warranty and for "troubleshooting" costs associated with identifying the need for such repairs or replacements, when coordinated through an authorized TCM representative. The amount of repair and replacement labor costs allowed will be in accordance with the latest revision of the warranty labor allowance schedule, Form X30552, published by TCM. The amount of "troubleshooting" costs allowed will be the reasonable costs under the circumstances of identifying the need for such repairs or replacements, but in no event will the "troubleshooting" costs allowed exceed fifteen percent (15%) of the labor costs associated with such repairs or replacements allowed by TCM. No "troubleshooting" cost allowance will be made where the need for repairs or replacements is identified in the course of overhaul, routine maintenance or on the basis of an obvious defect.

   (c) TCM will pay transportation costs in connection with the repair or replacement of any engine, component or part found to the satisfaction of TCM to be defective in material or workmanship under paragraph 1(a) of this warranty. The engine, component or part must be shipped prepaid to the repair facility designated by TCM. Transportation cost reimbursement for engines will be the actual surface freight charge or $500.00, whichever is less. Engines must be described on the bill of lading as follows: "Internal combustion engine, other than Radial Cyl RVNX $5.00". Transportation cost reimbursement for components or parts will be the actual surface freight charge for shipment of the component or part or the currently published UPS surface rate schedule, whichever is less.

2. (a) After the expiration of the applicable twelve (12) month period described above and before the expiration of an additional twenty-four (24) month period or expiration of one thousand (1000) hours of operation, whichever occurs first, TCM will, except as excluded below, at its option repair or replace on an exchange basis any component or part manufactured or supplied by it which is found to the satisfaction of TCM to be defective in material or workmanship. During this period TCM reserves the right at its option to replace the defective component or part with either a new or rebuilt component or part. During this period TCM will not assume any responsibility for the repair or replacement of engine accessories, i.e. parts which have been purchased by TCM from a manufacturer as a complete and finished unit and included in the assembly of an engine without altering the unit, including, but not limited to, Unison® magnetos and harnesses, Precision Airmotive Corporation® carburetors and fuel controls, Electrosystems® starters and alternators and Alliedsignal® and Consolidated Fuel Systems® turbochargers. During this period accessories will be subject to such warranty coverage as may be provided by their manufacturer.

   (b) In the event that TCM elects to repair in the field, rather than replace, any component or part under paragraph 2(a) of this warranty, TCM will pay labor costs for the repair of the component or part only. The amount of repair labor costs allowed will be in accordance with the latest revision of the warranty labor allowance schedule, Form X30552, published by TCM. TCM will not assume any responsibility for labor costs for the removal and / or re-installation of the component or part, costs associated with "troubleshooting" or any other labor costs associated with repairs or replacements under paragraph 2(a) of this warranty.

(c) TCM will not assume any responsibility for transportation costs associated with repairs or replacements under paragraph 2(a) of this warranty.

3. The coverage under this warranty applicable to cylinder assemblies and related parts shall be subject to the terms, conditions and limitations set forth in the applicable TCM TopCare[SM] Cylinder Warranty.

4. Repair or replacement of any engine or part under this warranty will not extend the period of warranty coverage set forth above.

5. This warranty applies only to engines in which parts manufactured or supplied by TCM or parts manufactured pursuant to an FAA Parts Manufacturer Approval have been used and nothing contained herein should be construed as a warranty by TCM of any engine or part not manufactured or supplied by TCM. TCM accepts no responsibility for the failure of any engine or part which it does not manufacture or supply or damage resulting from such failure.

6. This warranty applies only to engines which have been installed, inspected and maintained in accordance with the instructions for continued airworthiness, including compliance with all applicable service bulletins issued by TCM, the aircraft manufacturer or any accessory or component manufacturer. Performance of recommended inspections and maintenance must be documented by appropriate logbook entries and the logbook must accompany any engine being returned for warranty consideration.

7. This warranty does not apply to any engine, component or part manufactured or supplied by TCM which (1) has been subject to misuse, neglect or accident; (2) has been installed, repaired, maintained or altered in any way that in the judgment of TCM has adversely affected the condition of the engine; (3) has been operated inconsistent with TCM and aircraft manufacturer recommendations and limitations (such as, but not limited to engine RPM, temperature, manifold pressure, fuel flow and proper system adjustment) or (4) has been changed from its original FAA certificated configuration.

8. TCM will not be responsible for repair or replacement of any engine, component or part damaged or worn as a result of corrosion, pre-ignition/detonation, operation with non-calibrated engine gauges, improper fuel system adjustment, non-TCM approved fuel and oil grades or additives or installation of parts, components or accessories that alter the engine's original type design.

9. The provisions of this warranty do not apply to normal maintenance service (such as engine tune-ups, adjustments, inspections, engine or component overhaul resulting from time between overhaul (TBO) recommendations, etc.) or to the replacement of normal service items (such as spark plugs, filters, hoses, belts, etc.).

10. TCM reserves the right to change any engine or part specifications or prices without incurring any responsibility with regard to engines or parts previously sold or replaced.

11. THIS WARRANTY IS A WARRANTY TO REPAIR OR REPLACE AND NOT A WARRANTY OF THE CONDITION OR FUTURE PERFORMANCE OF THE PRODUCTS WHICH IT COVERS. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, SPECIFICALLY, BUT WITHOUT LIMITATION, THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL TCM BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY DEFECT IN ANY ENGINE OR PART, ARISING OUT OF THE FAILURE OF ANY ENGINE OR PART TO OPERATE PROPERLY, OR ARISING OUT OF ANY BREACH OF THE WARRANTY MADE HEREIN. No person is authorized to give any other warranty or to assume any additional obligation or liability on behalf of TCM.

CONTINENTAL MOTORS

Mobile, Alabama 36601

X30681 8/99

Printed in U.S.A.

CONTINENTAL MOTORS
TOP CARE℠ CYLINDER WARRANTY

This TopCare Cylinder Warranty provides special warranty coverage for cylinders and related parts shipped from Teledyne Continental Motors' plant on or after August 1, 1999 provided certain eligibility requirements are met. In the event that the eligibility requirements for this TopCare Cylinder Warranty are not met, the terms and conditions of the Teledyne Continental Motors (TCM) Aircraft Engine Part, Component & Accessory Warranty will apply.

1. **Engines Eligible for TopCare Cylinder Warranty Coverage:** Any TCM aircraft engine meeting the eligibility requirements of Paragraph 2 of this warranty is eligible for coverage.

2. **Eligibility Requirements:** This Top Care Cylinder Warranty applies only to cylinders and related parts shipped from TCM's plant on or after August 1, 1999. For purposes of this warranty, the cylinder and related parts are defined as the cylinder, cylinder intake and exhaust valves, valve inserts, valve guides, valve springs and their retaining parts, pistons, piston rings and related O-rings and gaskets. To be eligible for TopCare Cylinder Warranty coverage these parts must be installed together and used in combination with each other.

Required TopCare Health Check Inspections

To be eligible for coverage under this TopCare Cylinder Warranty and to maintain that coverage the aircraft must be inspected at a Fixed Base Operator (FBO) facility in accordance with the TopCare Health Check Inspection set forth in the latest revision of TCM Service Information Directive 97-2 (SID 97-2) as follows:

(A) For new aircraft: Each new aircraft powered by a TCM engine shipped from TCM's plant on or after August 1, 1999 is covered by this TopCare Cylinder Warranty. To maintain coverage the aircraft must be inspected at least once per year in accordance with the TopCare Health Check inspection set forth in the latest revision of SID 97-2 and any discrepancies corrected at that time.

(B) For aircraft in service: For an aircraft in service in which a new or rebuilt aftermarket TCM engine shipped from TCM's plant on or after August 1, 1999 or for an aircraft having an engine in which a new cylinder supplied by TCM on or after August 1, 1999 is installed, the TopCare Health Check Inspection must be performed at time of installation and at least once per year thereafter in accordance with the TopCare Health Check Inspection set forth in the latest revision of SID97-2 and any discrepancies corrected at that time.

Enrollment and Documentation Requirements

Each new aircraft powered by an engine that incorporates cylinders and related parts shipped from TCM's plant on or after August 1, 1999 is covered and no enrollment is required. For other than new aircraft, enrollment under the TopCare Cylinder Warranty must be accomplished by performing the initial TopCare Health Check Inspection at time of engine (or cylinder) installation and correcting any discrepancies at that time. The TopCare Health Checklist Form attached to the latest revision of SID97-2 must be completed, signed by the inspecting mechanic and a copy returned along with the TopCare Cylinder Warranty Enrollment Form attached to the latest revision of SID97-2 to:

Teledyne Continental Motors
Attn: Warranty Services
P.O. Box 90
Mobile, Alabama 36601-0090

To maintain coverage under the TopCare Cylinder Warranty, the TopCare Health Check Inspection must be performed at least once per year and any discrepancies corrected at that time. The TopCare Health Checklist Form must be completed for each inspection, signed by the inspecting mechanic and retained by the owner for submittal to TCM with any claim under the TopCare Cylinder Warranty. Each required

TopCare Health Check Inspection must have been properly performed and documented on the TopCare Health Checklist Form. The TopCare Health Checklist Form for each inspection must be submitted to TCM with any claim under this TopCare Cylinder Warranty. Copies of work orders documenting the performance of the required TopCare Health Inspection and correction of any discrepancies must also be submitted to TCM upon request.

3. TopCare Cylinder Warranty Coverage:

(A) For a period of twelve (12) months or one thousand (1000) hours of operation, whichever occurs first, after the warranty activation date, TCM will at its option repair or replace on an exchange basis any cylinder component or related part manufactured or supplied by it which within the applicable twelve (12) month or one thousand (1000) hour period is returned to a representative of TCM authorized to handle the engine in which the cylinder component or related part covered by this warranty is installed and which upon examination by TCM is found to be defective in material or workmanship. For cylinders installed in new or rebuilt engines, the warranty activation date is the date the engine is first operated for any use or the 180th day after TCM's invoice date, whichever occurs first. For cylinder components purchased as aftermarket replacement components, the warranty activation date is the date the cylinder is first operated for any use. TCM will pay for reasonable labor costs associated with repairs or replacements under paragraph 3(A) of this warranty and for "troubleshooting" costs associated with identifying the need for such repairs or replacements when coordinated through an authorized TCM representative. The amount of repair or replacement labor costs allowed will be in accordance with the latest revision of the warranty labor allowance schedule, Form X30552, published by TCM. The amount of "troubleshooting" costs allowed will be the reasonable costs under the circumstance of identifying the need for such repairs or replacements, but in no event will the "troubleshooting' costs allowed exceed fifteen percent (15%) of the labor costs associated with such repairs or replacements allowed by TCM. No "troubleshooting" cost allowance will be made where the need for repairs or replacements is identified in the course of overhaul, routine maintenance or on the basis of an obvious defect.

(B) After the expiration of the twelve (12) month period described in paragraph 3(A) and before the expiration of an additional twenty-four (24) month period or expiration of one thousand (1000) hours of operation, whichever occurs first, TCM will at its option repair or replace on an exchange basis any cylinder component or related part manufactured and supplied by it which is found to the satisfaction of TCM to be defective in material or workmanship.

(C) In the event that TCM elects to repair in the field, rather than replace any cylinder component or related part under paragraph 3(B) of this warranty, TCM will pay labor costs for the repair of the cylinder component or related part only. The amount of repair labor costs allowed will be in accordance with the latest revision of the warranty labor allowance schedule, Form X30522, published by TCM. TCM will not assume any responsibility for labor costs for the removal and/or re-installation of the cylinder component or related part, costs for "troubleshooting" or any other labor costs associated with repairs or replacements under paragraph 3(B) of this warranty.

(D) TCM reserves the right at its option to replace any defective cylinder component or related part with either a new or rebuilt cylinder component or related part.

(E) Repair or replacement of any cylinder component or related part under this warranty will not extend the period of warranty coverage set forth above.

(F) TCM will not assume any responsibility for transportation costs in connection with the repair or replacement of any cylinder component or related part under this warranty, except when such transportation has been expressly authorized by TCM. When authorized, transportation cost reimbursement for cylinder components will be the actual surface freight cost or the currently published UPS surface rate schedule, whichever is less.

(G) This warranty applies only to cylinders in which parts manufactured or supplied by TCM or parts manufactured pursuant to an FAA Parts Manufacturer Approval have been used and nothing contained herein should be construed as a warranty by TCM of any cylinder or related part not manufactured or supplied by TCM. TCM accepts no responsibility for the failure of any cylinder or related part which it does not manufacture or supply or damage resulting from such failure.

(H) This warranty also applies only to cylinders and related parts on which the installation, inspection, maintenance and operating instructions and recommendations contained in the appropriate operator's manual, overhaul manual and applicable service bulletins have been complied with. Performance of recommended inspections and maintenance must be documented by appropriate logbook entries and a copy of the logbook must accompany any cylinder and related part being returned for warranty consideration.

(I) This warranty does not apply to any cylinder or related part manufactured or supplied by TCM which has been subject to misuse, neglect or accident or which has been installed, repaired, maintained or altered in any way that in the judgment of TCM has adversely affected the condition of the engine or which has been operated beyond factory recommendations (such as, but not limited to RPM, temperature, manifold pressure, fuel flow and proper system adjustment).

(J) TCM will not be responsible for repair or replacement of cylinder components or parts damaged or worn as a result of corrosion, pre-ignition/detonation, operation with non-calibrated engine gauges, improper fuel system adjustment, non-TCM approved fuel and oil grades or additives and installation of parts, components or accessories that alter the engines' original type design.

(K) The provisions of this warranty do not apply to normal maintenance service or to the replacement of normal service items. This warranty does not cover any costs related to the performance of the TopCare Health Check Inspection.

(L) TCM reserves the right to change any part specifications or prices without incurring any responsibility with regard to engines or parts previously sold or replaced.

(M) THIS WARRANTY IS A WARRANTY TO REPAIR OR REPLACE AND NOT A WARRANTY OF THE CONDITION OR FUTURE PERFORMANCE OF THE PRODUCTS WHICH IT COVERS. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, SPECIFICALLY, BUT WITHOUT LIMITATION, THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL TCM BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY DEFECT IN ANY CYLINDER OR RELATED PART, ARISING OUT OF THE FAILURE OF ANY CYLINDER OR RELATED PART TO OPERATE PROPERLY, OR ARISING OUT OF ANY BREACH OF THE WARRANTY MADE HEREIN. No person is authorized to give any other warranty or to assume any additional obligation or liability on behalf of TCM.

CONTINENTAL MOTORS
Mobile, Alabama 36601

X30684 8/99
Printed in U.S.A.

TELEDYNE CONTINENTAL® AIRCRAFT ENGINE

SERVICE INFORMATION LETTER

CATEGORY 5

SIL99-1

Technical Portions FAA Approved
Supercedes M91-5

CONTAINS USEFUL INFORMATION PERTAINING TO THE CONTINENTAL AIRCRAFT ENGINE

SUBJECT: **ENGINE PRESERVATION FOR ACTIVE AND STORED AIRCRAFT**

PURPOSE: Provide current engine preservation information

COMPLIANCE: During periods as specified by this document

MODELS AFFECTED: All Continental Engine Models

GENERAL

There is no practical procedure that will insure corrosion prevention on installed aircraft engines. Susceptibility to corrosion is influenced by geographical location, season and usage. The owner/operator is responsible to recognize the conditions that are conducive to corrosion and take appropriate precautions.

ENGINE PRESERVATION

Corrosive attack can occur in engines that are flown only occasionally regardless of geographical location. In coastal areas and areas of high humidity, corrosive attack can occur in as little as two days. The best method of reducing the likelihood of corrosive attack is to fly the aircraft at least once every week for a minimum of one hour.

NOTE...
Corrosive attack may reduce engine service life. Of primary concern are cylinders, piston rings, valves, valve guides, camshaft and lifters.

TEMPORARY STORAGE (Aircraft that are not flown for 30 to 90 days)

Preparation for storage.

1. Remove oil sump drain plug and drain oil. Replace drain plug, torque and safety. Remove oil filter. Install new oil filter, torque and safety. Service engine to proper sump capacity with oil conforming to MIL-C-6529 Type II.
2. Perform a ground run-up. Perform a pre-flight inspection and correct any discrepancies. Fly the aircraft for one hour at normal operation temperatures.

WARNING

To prevent possibility of serious bodily injury or death, before moving the propeller accomplish the following:

a. Disconnect all spark plug leads.

b. Verify magneto switches are connected to magnetos, that they are in the "OFF" Position and "P" leads are grounded.

c. Throttle position "CLOSED."

d. Mixture control "IDLE-CUT-OFF."

e. Set brakes and block aircraft wheels. Insure that aircraft tie-downs are installed and verify that the cabin door latch is open.

f. Do not stand within the arc of the propeller blades while turning the propeller.

3. After flight remove all spark plug leads and remove the top spark plugs. Protect the ignition lead ends with AN-4060 Protectors. Using a common garden sprayer or equivalent, spray atomized preservative oil that meets MIL-P - 46002, Grade 1, at room temperature through upper spark plug hole of each cylinder with the piston at bottom dead center position. Rotate crankshaft as opposite cylinders are sprayed. Stop crankshaft with none of the pistons at top dead center.
4. Re-spray each cylinder. To thoroughly cover all surfaces of the cylinder interior move the nozzle or spray gun from the top to the bottom of the cylinder.
5. Install top spark plugs but do not install spark plug leads.
6. Seal all engine openings exposed to the atmosphere using suitable plugs and covers. Attach a red "REMOVE BEFORE FLIGHT" streamer at each location.
7. Tag each propeller in a conspicuous place with the following notation on the tag: DO NOT TURN PROPELLER - ENGINE PRESERVED - PRESERVATION DATE _____.

NOTE...
If the engine is not returned to flyable status on or before the 90-day expiration, it must be preserved in accordance with "Indefinite Storage" procedures in this document.

INDEFINITE STORAGE **(Aircraft that are not flown for 90 days)**

PREPARATION FOR STORAGE

1. Remove oil sump drain plug and drain oil. Replace drain plug, torque and safety. Remove oil filter Install new oil filter torque and safety. Service engine to proper sump capacity with oil conforming to MIL-C-6529 Type II.
2. Perform a ground run-up. Perform a pre-flight inspection and correct any discrepancies. Fly the aircraft for one hour at normal operation temperatures.

WARNING

To prevent possibility of serious bodily injury or death, before moving the propeller accomplish the following:

a. Disconnect all spark plug leads.

b. Verify magneto switches are connected to magnetos, that they are in the "OFF" Position and "P" leads are grounded.

c. Throttle position "CLOSED."

d. Mixture control "IDLE-CUT-OFF."

e. Set brakes and block aircraft wheels. Insure that aircraft tie-downs are installed and verify that the cabin door latch is open.

f. Do not stand within the arc of the propeller blades while turning the propeller.

3. After flight remove all spark plug leads and remove the spark plugs. Protect the ignition lead ends with AN-4060 Protectors. Install protective plugs P/N 22671 in bottom spark plug holes. Using a common garden sprayer or equivalent, spray atomized preservative oil that meets MIL-P-46002, Grade 1, at room temperature through upper spark plug hole of each cylinder with the piston at bottom dead center position. Rotate crankshaft as opposite cylinders are sprayed. Stop crankshaft with none of the pistons at top dead center.
4. Re-spray each cylinder. To thoroughly cover all surfaces of the cylinder interior move the nozzle or spray gun from the top to the bottom of the cylinder.
5. Install dehydrator plugs MS27215-1 or -2 in each of the upper spark plug holes. Make sure each plug is blue in color when installed.

6. Attach a red "REMOVE BEFORE FLIGHT" streamer to each bag of desiccant. Place a bag of desiccant in the exhaust pipes and seal the openings.
7. Seal all engine openings exposed to the atmosphere using suitable plugs and covers.
8. Tag propeller in a conspicuous place with the following notation on the tag: DO NOT TURN PROPELLER - ENGINE PRESERVED - PRESERVATION DATE _____.

INDEFINITE STORAGE INSPECTION PROCEDURES

1. Aircraft prepared for indefinite storage must have the cylinder dehydrator plugs visually inspected every 15 days. The plugs must be changed as soon as they indicate other than a dark blue color. If the dehydrator plugs have changed color in one-half or more of the cylinders, all desiccant material on the engine must be replaced.
2. The cylinder bores of all engines prepared for indefinite storage must be re-sprayed with corrosion preventive mixture every 90 days.

RETURNING AN ENGINE TO SERVICE AFTER STORAGE

1. Remove seals and all desiccant bags.
2. Remove cylinder dehydrators and plugs or spark plugs from upper and lower spark plug holes.
3. Remove oil sump drain plug and drain the corrosion preventive mixture. Replace drain plug, torque and safety. Remove oil filter. Install new oil filter torque and safety. Service the engine with oil in accordance with the manufacturer's instructions.

WARNING

To prevent possibility of serious bodily injury or death, before moving the propeller accomplish the following:

   a. **Disconnect all spark plug leads.**
   b. **Verify magneto switches are connected to magnetos, that they are in the "OFF" Position and "P" leads are grounded.**
   c. **Throttle position "CLOSED."**
   d. **Mixture control "IDLE-CUT-OFF."**
   e. **Set brakes and block aircraft wheels. Insure that aircraft tie-downs are installed and verify that the cabin door latch is open.**
   f. **Do not stand within the arc of the propeller blades while turning the propeller.**

4. Rotate propeller by hand several revolutions to remove preservative oil.
5. Service and install spark plugs and ignition leads in accordance with the manufacturer's instructions.
6. Service engine and aircraft in accordance with the manufacturer's instructions.
7. Thoroughly clean the aircraft and engine. Perform visual inspection.
8. Correct any discrepancies.
9. Conduct a normal engine start.
10. Perform operational test in accordance with "Operational Inspection," of the applicable Maintenance Manual.
11. Correct any discrepancies.
12. Perform a test flight in accordance with airframe manufacturer's instructions.
13. Correct any discrepancies prior to returning aircraft to service.
14. Change oil and filter after 25 hours of operation.

INTENTIONALLY

LEFT

BLANK

THE adlog AIRCRAFT MAINTENANCE RECORDKEEPING SYSTEM

Oil Analysis Status

If Multi-Engine: Left ☐ Right ☐ Front ☐ Rear ☐ Engine Make: Continental Model:______ Serial No.:______

Sample Date	Report Recv'd	Analysis Date	Lab/Report No.	Lab Name	Sample Results	Next Due	Remarks
4/26/05	5/5/05		104859	Exxgard	OK ☑ Resample ☐		
7/14/05	7/28/05		872236	Aviation Oil Analysis	OK ☑ Resample ☐		
8/5/06	8/14/06		8 1428	Blackstone	OK ☑ Resample ☐		
11/2/06	11/9/06		C89297	Blackstone	OK ☑ Resample ☐		
5/6/07	5/14/07		D05110	Blackstone	OK ☑ Resample ☐		some lead
12/20/07	1/7/08		939659	Aviation Oil Analysis	OK ☑ Resample ☐		normal
8/24/08	9/8/08		8115440	Aviation Oil Analysis	OK ☑ Resample ☐		normal
8/30/14	9/12/14		44150098810	Aviation Oil Analysis	OK ☑ Resample ☐		
					OK ☐ Resample ☐		
					OK ☐ Resample ☐		
					OK ☐ Resample ☐		
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					OK ☐ Resample ☐		

ALS Tribology

AOA
AVIATION OIL ANALYSIS

YOUR AIRCRAFT. OUR EXPERTISE.

3319 W. Earll Drive, Phoenix, Arizona 85017
Phone: 800-445-7930 Fax: 602-252-4639
http://webtrieve.alstribology.com ****email: aoa@alstribology.com

Customer Name:	RUDY ENGHOLM	**Tail Number:**	N611RJ	**Comp Serial Nº:**	914300
Address:	27 Storer Street Portland ME 04102 USA	**Aircraft Make:**	Columbia	**Comp Name:**	Single Engine
		Aircraft Model:	400	**Comp Make:**	Continental
Phone:	207 871 8993	**Serial Nº:**		**Comp Model:**	TSIO-550C
Fax:		**UIN:**	01EF1B3		

Oil Sample 8/30/14
N611RJ

Sample Nº	44150098810	44110939659
Date Samples	30-Aug-14	20-Dec-07
Date Tested	12-Sep-14	07-Jan-08
Oil Brand	Shell	Unidentified
Oil Type	Aeroshell W	Unidentified
Oil Grade	SAE 15W50	Unidentified
Oil Hrs	50	21
Oil Added	2.0	
Hrs Since New	888	
Rebuild Hrs		270
Metals (ppm)		
Aluminium (Al)	5	2
Iron (Fe)	59.56	24.30
Copper (Cu)	6.69	3.20
Nickel (Ni)	20	4
Chromium (Cr)	11	1
Silver (Ag)	<1	<1
Contaminants (ppm)		
Silicon (Si)	5	12

LEGEND

Severe Abnormal Caution Normal

Sample Nº — Diagnosis/Recommendations

44150098810 All values appear normal.

44110939659 All Values Appear Normal

EXXGARD

OIL ANALYSIS

3319 W. Earll Dr.
Phoenix, AZ 85017
1-800-445-7930

CUSTOMER: RUDY ENGHOLM
27 STORER STREET

PORTLAND ME 04102
CONTACT: RUDY ENGHOLM
PHONE: 207-871-8993 FAX:

TAIL NUMBER: N611RJ
AIRCRAFT MODEL:: UNKNOWN
COMPONENT MODEL: TSIO-550C
POSITION: S
POS DESCR: SINGLE
COMPONENT S/N: 914300
OIL TYPE: A/S 15-50

Sample Number	Taken Processed	Oil Hours Oil Added	TSN TSO	Aluminum	Iron	Copper	Nickel	Chrome	Lead	Silicon	Phosphorous	TAN	Viscosity*	Recommendation Codes
104859	04/26/05	25	51	2	12.0	27.0	4	2	1,544	17	1,211	1.5	21.0	120 133
	05/05/05	1												
115440	08/24/08	50	482	4	29.0	7.9	9	8	1,594	5	576	1.8	18.3	100
	09/06/08													

*** Values Abnormal *cSt@100C

Wear Metals Reported in Parts Per Million

RESULT CODES

100 ALL VALUES APPEAR NORMAL

RESULTS:
OTHER TESTS: WATER= 0

N611RJ 8/24/08 oil sample

Company: ENGHOLM, RUDY 27 STORER STREET PORTLAND ME 04102	**Comp. Descr.:** SINGLE ENGINE TSIO-550C	**Fuel Type:**	**Lab:** 3319 WEST EARLL DRIVE PHOENIX, AZ 85017 (800)445-7930, FAX(602)252-4639
	Make:	**Oil Brand:**	
	Model:	**Oil Type:**	
Customer No: 20405617	**Equip. Make:** UNKNOWN	**Fluid Grade:**	**End User:**
Unit No: N611RJ	**Equip. Model:** UNKNOWN	**Ser.No:** 914300	**End Loc:**

			WEAR METALS (ppm)										ADDITIVES								
Lab No Condition	Date Taken Tested	Time on_Oil on_Unit	IRON	CHROMIUM	LEAD	COPPER	TIN	ALUMINUM	NICKEL	SILVER	TITANIUM	VANADIUM	SODIUM	MAGNESIUM	CALCIUM	BARIUM	PHOSPHORUS	ZINC	MOLYBDENUM	BORON
B115440 Normal	08/24/08 09/06/08	50 482	29.0	8	1594	7.9	0	4	9	0							576			
B104859 Normal	04/26/05 05/05/05	25 51	12.0	2	1544	27.0	0	2	4	0							1211			

Lab No	CONTAMINATION								PHYSICAL PROPERTIES		
	Aluminum	Silicon	Sodium	Potassium	Water	Coolant	Fuel *	Solids/Soot	Visc100	Visc40	TAN
B115440	4	5							18.3		1.8
B104859	2	17							21		1.5

Lab No	Brand	Product	Grade	Recommendation
B115440		A/S 15-50		TIME ON UNIT IS SINCE NEW, OTHER TESTS: WATER= 0, ALL VALUES APPEAR NORMAL
B104859		A/S 15-50		TIME ON UNIT IS SINCE NEW, OIL ADDED: 1, OTHER TESTS: WATER= 0, NO ABNORMAL WEAR DETECTED FOR NEW ENGINE, RESAMPLE NEXT OIL CHANGE TO ESTABLISH WEAR TREND

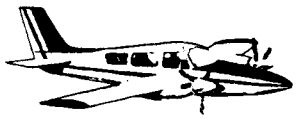
* Fuel results reported as "<" may have been determined by inference from viscosity measurements and may have been confirmed by instrument specific analysis as required.

A DIV. OF:
staveley services
FLUIDS ANALYSIS

A O A

AVIATION OIL ANALYSIS

3319 West Earll Drive
Phoenix, Arizona 85017
Ph: 800-445-7930, email: aoa@Staveleyna.com
Web access: http://aoa.Staveleyfa.com



AVIATION OIL ANALYSIS
SINCE 1976

CUSTOMER: RUDY ENGHOLM
27 STORER STREET

PORTLAND ME 04102

CONTACT: RUDY ENGHOLM
PHONE: 207-871-8993 FAX:

TAIL NUMBER: N611RJ
AIRCRAFT MODEL: UNKNOWN
COMPONENT MODEL: TSIO-550C
POSITION: S
POS DESCR: SINGLE
COMPONENT S/N: 914300
OIL TYPE: EX ELITE 20W50

Sample Number	Taken Processed	Oil Hours Oil Added	TSN TSO	Aluminum	Iron	Copper	Nickel	Chrome	Lead	Silver	Silicon (dirt)	Magnesium	Recommendation Codes	
872236	07/14/05	53	132	9	82.4	24.4	19	16	N/A	0	16	N/A	120	133
	07/21/05	4												
939659	12/20/07	21	270	2	24.3	3.2	4	1	N/A	0	12	N/A	100	
	01/07/08	8												

????

*** Values Abnormal

Wear Metals Reported In Parts Per Million

RESULT CODES

100 ALL VALUES APPEAR NORMAL

COMMENTS:

OTHER TESTS:

BLACKSTONE LABORATORIES

OIL REPORT

LAB NUMBER: D19480 **UNIT ID:** N611RS
REPORT DATE: 10/9/2007 **CLIENT ID:** 23391
CODE: 35/284 **PAYMENT:** CC: Visa

UNIT

MAKE/MODEL: Continental TSIO-550-C7B
FUEL TYPE: Gasoline (Leaded)
ADDITIONAL INFO: Columbia 400; Eng S/N 914300

OIL TYPE & GRADE: Aeroshell 15W/50
OIL USE INTERVAL: 46 Hours

CLIENT

C RUDY ENGHOLM
RJ AVIATION
27 STORER STREET
PORTLAND, ME 04102

PHONE: (207) 871-8993
FAX: (732) 623-6502
ALT PHONE:
EMAIL: cre23@earthlink.net

COMMENTS

RUDY: Nice general improvement in wear and blow-by. This came after a longer oil run and that's always a good sign. We are still seeing a little fuel in the oil, though with the viscosity normal and wear looking good, we really aren't too concerned about it. Silicon read low at 7 ppm so your air filter is doing well. We don't know what caused the jump in lead last time. Possibly, if you had to run the engine at higher power settings, that could explain it. In any case, at 435 hours (SNew), we think this engine is doing okay. It doesn't look like the inactivity hurt you any.

ELEMENTS IN PARTS PER MILLION

MI/HR on Oil	46	UNIT / LOCATION AVERAGES	41	27	48				UNIVERSAL AVERAGES
MI/HR on Unit	435		354	306	256				
Sample Date	09/30/07		05/06/07	11/02/06	08/05/06				
Make Up Oil Added	1.5 qts		2 QTS	1 qt	2 qts				
ALUMINUM	5	6	6	6	5				12
CHROMIUM	18	16	16	15	15				17
IRON	59	58	64	53	54				89
COPPER	5	9	10	8	11				12
LEAD	7230	8392	**10460**	8097	7782				6376
TIN	0	1	0	1	1				2
MOLYBDENUM	4	4	4	4	4				6
NICKEL	17	20	20	24	18				23
MANGANESE	1	1	1	1	1				2
SILVER	0	0	0	0	0				0
TITANIUM	1	0	0	0	0				0
POTASSIUM	0	0	0	0	0				0
BORON	0	0	0	0	0				0
SILICON	7	8	8	7	8				9
SODIUM	1	0	0	0	0				1
CALCIUM	2	10	4	5	29				4
MAGNESIUM	0	1	2	1	2				1
PHOSPHORUS	853	949	982	1043	918				680
ZINC	3	6	8	4	7				17
BARIUM	0	0	0	0	0				0

PROPERTIES

		Values Should Be*					
SUS Viscosity @ 210°F	86.1	82-105	87.9	86.6	81.9		
cSt Viscosity @ 100°C	17.03	16.0-21.6	17.46	17.15	16.01		
Flashpoint in °F	**425**	>440	**425**	450	SHORT		
Fuel %	0.8	<1.0	0.8	<0.5	-		
Antifreeze %	-		-	-	-		
Water %	0.0	<0.1	0.0	0.0	0.0		
Insolubles %	0.4	<0.6	0.4	0.5	0.5		
TBN							
TAN							
ISO Code							

*** THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE**

416 E. PETTIT AVE. FORT WAYNE, IN 46806 (260) 744-2380 www.blackstone-labs.com

BLACKSTONE LABORATORIES

AIRCRAFT OIL ANALYSIS

416 E. Pettit Ave.
Fort Wayne, IN 46806
(260) 744-2380

route 1 10/1/07

C RUDY ENGHOLM
RJ AVIATION
27 STORER STREET
PORTLAND, ME 04102
(207) 871-8993

Registration (N) Number N611RJ

Sample Date 9/30/07

Hours on Oil 46

Hours on Engine 435 ☐ SMOH
(Choose One) ☒ SNEW

A/C Engine Make Continental

Oil Added Between Changes: 1.5 Qts.

Engine Model TSIO-550-C7B

Engine Position: ☐ Left ☐ Right ☐ Front ☐ Rear

Cylinder Type
(Please Check)

☐ Steel ☐ Chrome
☐ Nickel ☒ Don't Know
☐ Mixed _____

Oil Type: **Aeroshell 15W/50**

Other _____

9 2 [illegible] 23391

☐ Please send more sample containers

Please see other side ▶

BLACKSTONE LABORATORIES

P.O. NUMBER CC: Visa
CODE: 35/23391/284

OIL REPORT

UNIT NUMBER N611RS
REPORT DATE: 5/14/07
LAB NUMBER: D05110

CLIENT

CONTACT: C RUDY ENGHOLM
NAME: RJ AVIATION
ADDRESS: 27 STORER STREET
PORTLAND, ME 04102

PHONE: (207) 871-8993
FAX: (732) 623-6502
E-MAIL: cre23@earthlink.net

UNIT

EQUIPMENT MAKE: Continental
EQUIPMENT MODEL: TSIO-550-C7B
FUEL TYPE: Gasoline (Leaded)
ADDITIONAL INFO: Columbia 400; Eng S/N 914300

OIL USE INTERVAL: 41 Hours
OIL TYPE & GRADE: Aeroshell 15W/50
MAKE-UP OIL ADDED: 2 QTS

COMMENTS

RUDY: Wear generally read below averages, but lead (from 100 LL blowing past the rings) was quite high in this sample. It's cautionary. Changes in fuel mixture (flying richer) and some kinds of operational circumstances can cause lead to increase, but until we know this is a one-time thing, we suggest keeping an eye on compressions and running shorter oil changes. The shorter oil changes won't fix anything, but they will help get the blow-by and any metals out of the oil sooner. Fuel at 0.8% may be from priming. Lead is cautionary! Use 25 hours next time.

ELEMENTS IN PARTS PER MILLION

	MI/HR ON OIL	41	UNIT / LOCATION AVERAGES	27	48				UNIVERSAL AVERAGES
	MI/HR ON UNIT	354		306	256				
	SAMPLE DATE	05/06/07		11/02/06	08/05/06				
	ALUMINUM	6	6	6	5				12
	CHROMIUM	16	15	15	15				17
	IRON	64	57	53	54				91
	COPPER	10	10	8	11				12
	LEAD	**10460**	8780	8097	7782				6310
	TIN	0	1	1	1				2
	MOLYBDENUM	4	4	4	4				6
	NICKEL	20	21	24	18				23
	MANGANESE	1	1	1	1				2
	SILVER	0	0	0	0				0
	TITANIUM	0	0	0	0				0
	POTASSIUM	0	0	0	0				0
	BORON	0	0	0	0				0
	SILICON	8	8	7	8				9
	SODIUM	0	0	0	0				1
	CALCIUM	4	13	5	29				4
	MAGNESIUM	2	2	1	2				1
	PHOSPHORUS	982	981	1043	918				666
	ZINC	8	6	4	7				18
	BARIUM	0	0	0	0				0

PROPERTIES

TEST	cST VISCOSITY @ 40 °C	SUS VISCOSITY @ 100 °F	VISCOSITY INDEX	cST VISCOSITY @ 100 °C	SUS VISCOSITY @ 210 °F	FLASHPOINT IN °F	FUEL %	ANTIFREEZE %	WATER %	INSOLUBLES %
VALUES SHOULD BE					82-105	>440	<1.0		<0.1	<0.6
TESTED VALUES WERE					87.9	**425**	0.8	-	0.0	0.4

LIABILITY LIMITED TO COST OF SAMPLE ANALYSIS

416 EAST PETTIT AVE
FORT WAYNE, IN 46806 (260) 744-2380

BLACKSTONE LABORATORIES

P.O. NUMBER: CC: Visa
CODE: 35/23391/37

OIL REPORT

UNIT NUMBER: N611RS
REPORT DATE: 11/9/06
LAB NUMBER: C89297

CLIENT

CONTACT: C RUDY ENGHOLM
NAME: RJ AVIATION
ADDRESS: 27 STORER STREET
PORTLAND, ME 04102

PHONE: (207) 871-8993
FAX: (732) 623-6502
E-MAIL: cre23@earthlink.net

UNIT

EQUIPMENT MAKE: Continental
EQUIPMENT MODEL: TSIO-550-C7B
FUEL TYPE: Gasoline (Leaded)
ADDITIONAL INFO: Columbia 400; Eng S/N 914300

OIL USE INTERVAL: 27 Hours
OIL TYPE & GRADE: Aeroshell 15W/50
MAKE-UP OIL ADDED: 1 qt

COMMENTS

RUDY: We would think this oil had 50-hours on it rather than the 27 marked on the slip. This would be consistent with the wear in the oil, and the amount of lead, from blow-by, that has collected in the oil. Note the 306 to 256 progression in engine hours over the last three months. At any rate, we didn't find enough changed sample to sample to think this engine was developing any new problems as of 11/02/06, the sample date. Universal average wear on the TSIO-520-C7B is based on a 50-hours oil use run. If this oil was run 50, it is certainly wearing well.

ELEMENTS IN PARTS PER MILLION

MI/HRS ON OIL	27	UNIT / LOCATION AVERAGES	48						UNIVERSAL AVERAGES
MI/HRS ON UNIT	306		256						
SAMPLE DATE	11/02/06		08/05/06						
ALUMINUM	6	6	5						13
CHROMIUM	15	15	15						18
IRON	53	54	54						93
COPPER	8	10	11						12
LEAD	8097	7940	7782						5964
TIN	1	1	1						3
MOLYBDENUM	4	4	4						7
NICKEL	24	21	18						24
MANGANESE	1	1	1						2
SILVER	0	0	0						0
TITANIUM	0	0	0						0
POTASSIUM	0	0	0						0
BORON	0	0	0						0
SILICON	7	8	8						9
SODIUM	0	0	0						1
CALCIUM	5	17	29						5
MAGNESIUM	1	2	2						1
PHOSPHORUS	1043	981	918						640
ZINC	4	6	7						19
BARIUM	0	0	0						0

PROPERTIES

TEST	cST VISCOSITY @ 40°C	SUS VISCOSITY @ 100°F	VISCOSITY INDEX	cST VISCOSITY @ 100°C	SUS VISCOSITY @ 210°F	FLASHPOINT IN ° F	FUEL %	ANTIFREEZE %	WATER %	INSOLUBLES %
VALUES SHOULD BE					82-105	>440	<1.0		<0.1	<0.6
TEST VALUES WERE					86.6	450	<0.5	-	0.0	0.5

416 E. PETTIT AVENUE
FORT WAYNE, IN 46806 (260) 744-2380

Understanding Your Aircraft Oil Report

P.O. NUMBER: CC: Visa
CODE: 35/2779/66

This is how you're paying for this sample.

We use the registration number to ID the aircraft.

UNIT NUMBER: NSSSS7
REPORT DATE: 4/12/03
LAB NUMBER: B70629

For internal use.

CL

CONTACT: OSCAR HUFF
NAME: STONE AIRCRAFT. INC.
ADDRESS: 3442 S. WASHINGTON RD.
AUGUSTA, GA 30228

PHONE: (301) 555-1212
FAX:
E-MAIL: OSCARH@STONE.NET

We can e-mail your results the same day we do the analysis.

How many quarts of oil did you add in between oil changes?

UNIT

EQUIPMENT MAKE: Lycoming
EQUIPMENT MODEL: IO-360-A1A
FUEL TYPE: Gasoline (leaded)
ADDITIONAL INFO: Cessna 172 Eng. S/N 000001

OIL USE INTERVAL: Hours
OIL TYPE & GRADE: Aeroshell
MAKE-UP OIL ADDED:

This is a good place to identify cylinder type, engine serial number, recent repairs, etc.

NTS

OSCAR: Note aluminum [illegible] are reading higher than they were in [illegible]d are higher than universal [illegible] the beginning of a piston pin-plug pro[illegible] cuffing at the pisto[illegible] case. We suggest a compression che[illegible] pe to get to the roo[illegible]s is a cautionary report.

This column shows the averages for all the samples we've seen from this type of engine.

We can track total hours on the engine or hours since overhaul, as long as it's consistent.

Today's data.

From left to right, these are your past samples.

To learn about these elements, see the other side.

ELEMENTS IN PARTS PER MILLION

		UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
MI/HR ON OIL	30		30	25				
MI/HR ON UNIT	416		386	356				
SAMPLE DATE	04/09/03		12/21/02	08/31/02				
ALUMINUM	**31**	17	**18**	3				9
CHROMIUM	4	3	2	2				8
IRON	**151**	87	**69**	40				27
COPPER	10	9	9	[illegible]				8
LEAD	3591	3592	3621	3564				3058
TIN	1	1	1	1				2
MOLYBDENUM		0	0	0				0
NICKEL		1	2	1				2
MANGANESE		0	0	0				0
SILVER		0	0	0				0
TITANIUM		0	0	0				0
POTASSIUM	0	0	0	0				0
BORON	0	0	0	0				0
SILICON	7	8	8	10				7
SODIUM	1	1	1	0				1
CALCIUM	2	2	3	2				2
MAGNESIUM	1	1	2	1				2
PHOSPHORUS	697	717	746	708				698
ZINC	3	3	3	4				4
BARIUM	0	0	0	0				0

This shows the average wear for this type of engine for you or your business.

Elements that appear to be a problem are usually in bold.

The additives in the universal averages are a mix of all the different grades & the brands of oil, so they are not particular to your engine or oil.

PROPERTIES

TEST	cST VISCOSITY	SUS VISCOSITY @ 100 °F	VISCOSITY INDEX	cST VISCOSITY @ 100°C	SUS VISCOSITY @ 210 °F	FLASH-POINT IN °F	FUEL %	ANTI-FREEZE %	WATER %	INSOLU-BLES %
V[illegible]					74-85	>450	<1.0	-	0.0	<0.7
SH[illegible]					74.8	480	<0.5	-	0.0	0.5
VALUES WERE										

The tests in the Properties box examine the physical condition of the oil.

416 E. PETTIT AVE.
FORT WAYNE, IN 46806 (260) 744-2380

Blackstone Labs

ENGINE OIL ANALYSIS

7820 S. 70th East Ave.
Tulsa, OK 74133-7805
Phone / Fax (918) 492-5844

Send Check With Sample $18.00

Mailed to Blackstone Labs on 8-9-06

FROM: C. Rudy Englehm
Address 27 Storer Streeet
City Portland State ME Zip 04102
Phone 207-871-8993 Fax 732-623-6502

DATE: Sample Taken 8/5/06

AIRCRAFT: Registration N 611RS Other
Make Columbia Model 400

ENGINE: Make Continental Model ~~IO-550FG~~ TSIO-550C7B
Serial No. 914300
Position (Front) (Left) (Right) (Rear)
Please circle one.
Hours SNew 256 SMajor — STop
Cylinder Bore: Iron ( ) Type
Chrome ( ) Type
Nickel ( ) Type
Mixed ( ) Type
Chrome types are, Channel chrome or "Porous, silicon carbide impregnated"

OIL: Brand Aeroshell Grade 15W50
AD ( ) Mineral ( )
Hours since change 48
Quarts added between changes 2

FILTER: Spin On (✓) Screen ( )
Other ( ) Describe
Hours since changed or cleaned 48

Additives Used? CAMGARD
Has engine been inactive? 4 wks How long?
Any known problems or suspicions? NO

WARRANTY: Accuracy depends on validity of sample and data. Results shall be accurate based on the sample and data furnished. Warranty expressly limits liability for errors or omissions to the price paid for this analysis only. **ENGINE OIL ANALYSIS** does not imply or guarantee against failure of any equipment covered by this service.

TO SAMPLE: Run engine until normal operating temperature is reached. Allow first quart to drain and catch a sample of the hot oil. If between changes, insert a clean tube through the oil fill or dipstick hole, avoid bottom of sump. Suck oil into tube and transfer to bottle.

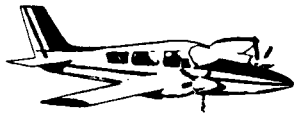
LAB USE ONLY Sample No.
Sn Ni Fe Mg Cu
Ag Cr Al Si Pb

A OF:
staveley services
FLUIDS ANALYSIS

A O A

AVIATION OIL ANALYSIS

3319 W. Earll Dr. • P.O. Box 29074 (85038)
Phoenix, AZ 85017
Ph: 800-445-7930, email: aoa@ctclink.com
Web access: http://aoa.ctclink.com



AVIATION OIL ANALYSIS
SINCE 1976

CUSTOMER: RUDY ENGHOLM
27 STORER STREET

PORTLAND ME 04102

CONTACT: RUDY ENGHOLM
PHONE: 207-871-8993 FAX:

TAIL NUMBER: N611RJ
AIRCRAFT MODEL: UNKNOWN
COMPONENT MODEL: TSIO-550C
POSITION: S
POS DESCR: SINGLE
COMPONENT S/N: 914300
OIL TYPE: EX ELITE 20W50

Sample Number	Taken Processed	Oil Hours Oil Added	TSN TSO	Aluminum	Iron	Copper	Nickel	Chrome	Lead	Silver	Silicon (dirt)	Magnesium	Recommendation Codes	
872236	07/14/05	53	132	9	82.4	24.4	19	16	N/A	0	16	N/A	120	133
	07/21/05	4												

*** Values Abnormal

Wear Metals Reported In Parts Per Million

RESULT CODES

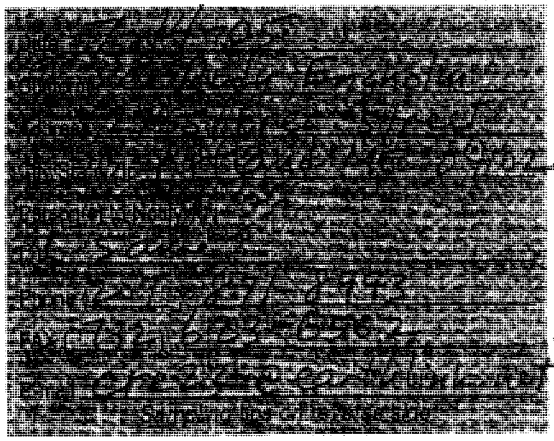
120 NO ABNORMAL WEAR DETECTED FOR NEW ENGINE
133 RESAMPLE NEXT OIL CHANGE TO ESTABLISH WEAR TREND

COMMENTS:

OTHER TESTS:

AIRCRAFT OIL SAMPLE SHIPPING FORM

mailed 7/15/05



PROCEDURE FOR SUBMITTING SAMPLE:

1) Clean around the drain plug.
2) Drain oil while warm.
3) Allow about a quart of oil to flow out; then obtain sample
4) Do not fill vial completely - 3/4 full is all that is needed; then tighten can securely.
5) Insert the sample and this shipping form into the mailing cylinder, screw cap on tightly, place postage on cylinder and ship.

The laboratory will analyze your oil sample and mail results within 24 hours after receipt.

AIRCRAFT REGISTRATION NUMBER:
N- 611RJ

AIRCRAFT MAKE & MODEL:
Lancair Columbia 400

UNIT SAMPLED:
Engine Trans Other

POSITION OF UNIT:
☐ Single ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ M/R ☐ T/R
☐ RH ☐ LH ☐ HYD

Engine Serial No. 914300
Engine Mfgr/Model Cont. TSIO-550C7B
☒ TSN 131.9 ☐ TSTOH
☐ TSMOH ☐ TT
Hours on oil 53
Oil added 4 Qts
Oil Brand & Type Aeroshell SAE 15W/50
Oil Filter ☒ Yes ☐ No

AVIATION OIL ANALYSIS

A DIVISION OF
CTC Analytical Services Inc
P.O. Box 29074
Phoenix, AZ 85038-9074
(602) 253-6515

(Over)

3319 W. Earll Dr.
Phoenix, AZ 85017
1-800-445-7930

GARD
EXXON Quality you can count on.

CUSTOMER: RUDY ENGHOLM
27 STORER STREET

PORTLAND ME 04102
CONTACT: RUDY ENGHOLM
PHONE: 207-871-8993 FAX:

TAIL NUMBER: N611RJ
AIRCRAFT MODEL:: UNKNOWN
COMPONENT MODEL: UNKNOWN
POSITION: S
POS DESCR: SINGLE
COMPONENT S/N: 914300
OIL TYPE: EX ELITE 20W50

Sample Number	Taken Processed	Oil Hours Oil Added	TSN TSO	Aluminum	Iron	Copper	Nickel	Chrome	Lead	Silicon	Phosphorous	TAN	Viscosity*	Recommendation Codes
104859	04/26/05	25	51	2	12.0	27.0	4	2	1,544	17	1,211	1.5	21.0	120 133
	05/05/05	1												

*** Values Abnormal * cSt@100C

Wear Metals Reported In Parts Per Million

RESULT CODES

120 NO ABNORMAL WEAR DETECTED FOR NEW ENGINE
133 RESAMPLE NEXT OIL CHANGE TO ESTABLISH WEAR TREND

RESULTS:
OTHER TESTS: WATER= 0

INSTALLED EQUIPMENT LIST (IEL)

Equipment List N611RJ — S/N 41044 — Date A/C was weighed — December 1, 2004

Item No	Drawing Reference Number	Installed	Item	Weight	Arm
21-01	LB53311500	✓	Front Seat Eyeball Vents (2) (Each)	0.22	79.0
21-02	LB53255137	✓	Rear Seat Eyeball Vents (2) (Each)	0.18	130.4
21-03	LB53311900	✓	ECS Control Panel	0.42	79.0
21-04	LA53210018	✓	ECS Cabin Fan	2.05	63.43
21-05	LA53216100	✓	ECS Heat Box	2.44	63.43
21-06	LA53216032	✓	ECS Servomotor	0.26	63.43
23-01	LA57275109	✓	Static Wicks Ailerons/Wings (4) (Each)	.018	140
23-02	LA55273000	✓	Static Wicks Elevator/Horizontal Stabilizer (4) (Each)	.018	279.4
23-03	LA53550000	✓	Static Wick Rudder (1)	.018	301.3
23-04	LB53312000	✓	GMA 340 Audio Panel	1.7	79.0
23-05	LB53312000	✓	FN-200 14 volt Avionics Fan	0.8	75.0
24-01	LB71844000	✓	Belt-driven Alternator 60 amp 14 volt	12.0	22.6
24-02	LB71845000	✓	Gear-driven Alternator 60 amp 14 volt	12.8	28.0
24-03	LC71510000	✓	Batteries 14 Volt, 15 Amp-hour, Lead-acid (2) (Each)	14.5	204.5
24-04	LB53243000	✓	Voltage Regulator (2) (Each)	3.0	70.0
24-05	LC53242000	✓	Ground Power Plug Relay	0.9	55.0
24-06	LC53516001	✓	Ground Power Plug Socket	0.8	153.0
24-07	LC53516003	✓	Ground Power Plug Wiring	3.9	104.0
24-08	LC53242000	✓	Power Grid Panel	10.6	59.4
24-09	LC53311500	✓	Mid-Continent MD-158 Dual Ammeter	0.8	78.0
25-01	LA53342100	✓	Artex ELT-200 Emergency Locator Transmitter Unit	2.47	215
25-02	LA53342000	✓	ELT Antenna	0.11	217.1
25-03	LA53311700	✓	Annunciator Panel	0.43	79.0
25-04	LC53514000	✓	Circuit Breaker Panel	3.9	89.5
25-05	LC53311200	✓	Rocker Switch Panel	0.47	79.0
25-06	LB53311300	✓	Master/Ignition Switch Panel	0.67	79.0
25-07	LA53311800	✓	Trim Panel	0.46	79.0
25-08	LA53311100	✓	Flap Panel	0.47	79.0
25-09	LA53311600	✓	Light Dimmer Switch Panel	0.14	110.36
25-10	LB53250000	✓	Pilot's Adjustable Seat	24.0	106.6

INSTALLED EQUIPMENT LIST (IEL)

Equipment List N611RJ — S/N 41044 — Date A/C was weighed — December 1, 2004

Item No	Drawing Reference Number	Installed	Item	Weight	Arm
25-11	LB53250000	✓	Copilot's Adjustable Seat	24.0	106.6
25-12	LA53252500	✓	Rear Seat Cushion (2) (Each)	5.7	134.9
25-13	LA53252300	✓	Rear Seatback Cushion (2) (Each)	11.3	150.2
25-14	LA53253000	✓	Pilot's and Copilot's Three Point Restraint (2) (Each)	1.82	128.5
25-15	LA53253200	✓	Rear Seat Passengers' Three Point Restraint (2) (Each)	1.76	145.7
25-16	LB53255000	✓	Baggage Tie Downs and Restraining Net	1.51	175.0
25-17	RC050002	✓	POH and FAA AFM (Stowed in Copilot's Seatback)	3.5	128.5
25-18	LB53311403	✓	Aural Warning Switch	0.6	73.0
25-19	LB53344901	✓	Carbon Monoxide Detector	0.22	68.19
26-01	LA53254800	✓	Fire Extinguisher Unit	3.56	88.0
26-02	LA53254800	✓	Fire Extinguisher Mounting Bracket	0.32	89.8
27-01	LA53271000	✓	Pilot's Control Stick	1.59	91.4
27-02	LA53274001	✓	Pilot's Rudder Pedals (2) (Each)	1.0	71.6
27-03	LA53272000	✓	Copilot's Control Stick	1.59	91.4
27-04	LA53274001	✓	Copilot's Rudder Pedals (2) (Each)	1.0	71.6
31-01	LA53310018	✓	Flight Hour Meter	0.13	78.0
31-02	LA57314000		OAT Probe	0.03	79.0
32-01	LA53321100	✓	Main Wheel, Brake and Tire 6.00-6 (6-Ply)/Side	18.4	122.1
32-02	LA53322101 LA53322105	✓	Main Gear Fairings (2) (Each)	2.4	131.7
32-03	LA53322109 LA53322113	✓	Main Wheel Fairings (2) (Each)	3.9	122.1
32-04	LA53321123	✓	Main Wheel Fairings Mounting Plate (Each)	0.4	122.1
32-05	LC71324000	✓	Nose Strut Fairing	0.76	40.89
32-06	LC71320000	✓	Nose Gear Strut	12.0	40.89
32-07	LA71322000	✓	Nose Wheel, Tire, and Tube 5.00-5 (10-ply)	14.8	40.89
33-01	LB53330000	✓	Flip Lights (2) (Each)	.02	116.0
33-02	LA53570005	✓	Step Lights (2) (Each)	0.05	150.0
33-03	LA53330000	✓	Overhead Reading Lights (4) (Each)	0.12	102.62
33-04	LA57332000	✓	Strobe Lights/ Position Lights	0.54	135.9
33-05	LA57331000	✓	Landing Light	0.29	102.4

INSTALLED EQUIPMENT LIST (IEL)

Equipment List N611RJ – S/N 41044 – Date A/C was weighed – December 1, 2004

Item No	Drawing Reference Number	Installed	Item	Weight	Arm
33-06	LA57331007	✓	Taxi Light	0.29	102.4
34-01	LB53312000	✓	Garmin GNS 430 GPS/Nav/Com (2) (Each)	6.5	79.0
34-02	LB53342000	✓	Garmin GPS/Nav/Com Antenna (2) (Each)	0.36	226.4
34-03	LA57317000	✓	Marker Beacon Antenna	0.45	120.5
34-04	LA53243000	✓	SSD120 Blind Encoder/Digitizer	0.63	79.0
34-05	LA53342000	✓	COMM 1 Antenna	0.56	164.0
34-06	LA53342000	✓	COMM 2 Antenna	0.56	199.0
34-07	LA53342000	✓	NAV Antenna	0.41	276.5
34-08	LB53344500	✓	Garmin GTX 327 Transponder Unit[1]	3.1	75.0
34-09	LB53344500		Garmin GTX 330 Transponder Unit[1]	3.4	75.0
34-10	LA57317000	✓	Transponder Antenna	0.3	111.5
34-11	LB53340005	✓	Turn Coordinator	1.96	149.0
34-12	LB53220000	✓	S-TEC 55X Autopilot Flight Guidance Computer	2.8	75.0
34-13	LB53220000	✓	Roll Servo	2.9	133.0
34-14	LB53220000	✓	Pitch Servo	2.9	206.0
34-15	LB53220000	✓	Pressure Transducer	0.2	75.0
34-16	LC53311400	✓	Attitude Indicator	2.7	81.0
34-17	LC53311400	✓	Airspeed Indicator	0.77	78.0
34-18	LC53311400	✓	Altimeter	0.9	75.0
34-19	LB53255400	✓	Magnetic Compass	0.75	76.0
34-20	LC53311500	✓	Fuel Quantity Indicator Gauge	0.76	78.0
34-21	LC53311500	✓	Tachometer	0.76	78.0
34-22	LA57313000	✓	Stall Warning Lift Transducer	0.24	99.5
34-23	LB53330000	✓	Stall Warning Horn	0.19	129.74
34-24	LA57312000	✓	Heated Pitot Tube	0.39	117.7
34-25	LB57100000	✓	Precise Flight SpeedBrake™ 2000 System - Wing Units (2) (Each)	4.0	124.0
34-26	LB53345011	✓	Precise Flight SpeedBrake™ 2000 System – Computer	0.5	147.0
34-27	LC53311400	✓	Avidyne EX5000 FlightMax MFD	6.75	81.0
34-28	LC53311400	✓	Avidyne EX5000 PFD	12.0	81.0

1 Either the Garmin GTX 327 or the Garmin GTX 330 transponder will be installed.

INSTALLED EQUIPMENT LIST (IEL)

Equipment List N611RJ — S/N 41044 — Date A/C was weighed — December 1, 2004

Item No	Drawing Reference Number	Installed	Item	Weight	Arm
34-29	LB53342207	✓	Magnetometer	0.53	75.0
34-30	LC53344807	✓	Data Acquisition Unit	1.4	75.0
34-31	LB53345100		XM Weather (Wx) Receiver	1.4	148.7
34-32	LB53345107		XM Weather (Wx) Antenna	0.26	77.47
34-33	LC53342605		ORBCOMM Antenna	0.52	188.0
34-34	LC53345205		TCAD Processor	6.8	153.42
34-35	LB53345209		TCAD Transponder Coupler	0.5	75.0
34-36	LB53345207		TCAD Top Antenna	0.66	142.87
34-36	LB53345207		TCAD Bottom Antenna	0.75	129.74
35-1	LB53350000	✓	Regulator Valve Assembly	2.07	119.0
35-2	LB53350000	✓	Display	0.56	76.0
35-3	LB53350000	✓	Cabin Distribution Manifold Assembly	0.54	130.6
35-4	LB53350000	✓	Face Mask (Rear Passengers) (2)	0.23	140.0
35-5	LB53350000	✓	Face Mask with Microphone (1)	0.58	140.0
35-6	LB53350000	✓	Face Mask (Front Passenger) (1)	0.12	140.0
35-7	LB53350000	✓	Bottle 1 (Fwd) with Manifold	7.2	111.0
35-8	LB53350000	✓	Bottle 2 (Center) with Manifold	7.1	116.5
35-9	LB53350000	✓	Bottle 3 (Aft) with Manifold	7.2	122.0
53-01	LA53325100	✓	Cabin Entry Step (2) (Each)	2.15	160.2
53-02	LC53600000	✓	Cabin Entry Handle (2) (Each)	.05	162.0
61-01	LC71820000	✓	Propeller	70.0	15.0
61-02	LC71820000	✓	Propeller Spinner	7.3	14.0
61-03	LA71841000	✓	Propeller Governor	2.80	28.0
71-01	LC71510000	✓	Starter Motor	6.4	58.0
71-02	LC71844100	✓	Engine Intake Filter	0.80	28.0
77-01	LC71000000	✓	TSIO-550-C TCM Engine Complete	565.5	44.45
77-02	LC53311500	✓	Oil Pressure/Temperature Gauge	0.76	78.0
77-03	LC53311500	✓	Fuel Flow/Manifold Pressure Gauge	0.79	78.0
77-04	LC53311500	✓	Cylinder Head/Turbine Inlet Temperature Gauge	0.78	78.0

The use of this page is optional and is provided for listing items that were added to the airplane via a Supplemental Type Certificate (STC) or other FAA approved procedures. This page is included in this section as a convenience to provide consistency in presentation. The page does <u>not</u> replace or amend any required documentation attendant with the after-market installation and/or modification.

TABULATED AFTER-MARKET EQUIPMENT LIST (TAMEL)

Lancair Columbia 400

Item No.	Serial/Part No.	ATA Chapter	Item	Weight (lbs.)	Arm (ins.)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

TABULATED AFTER-MARKET EQUIPMENT LIST (TAMEL)

Lancair Columbia 400

Item No.	Serial/Part No.	ATA Chapter	Item	Weight (lbs.)	Arm (ins.)
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
31.					
32.					
33.					
34.					
35.					
36.					
37.					
38.					
39.					

WEIGHT & BALANCE RECORD

(Continuing History of Changes in Structure or Equipment Affecting Weight and Balance)

AIRPLANE MODEL: COLUMBIA 400 (LC41-550FG)	SERIAL NUMBER: 41044 Date Airplane Weighed – December 1, 2004 (Initial)	PAGE NO. 1

DATE MOVED	ITEM MOVED		DESCRIPTION OF ARTICLE OR MODIFICATION	WEIGHT /MOMENT CHANGE						RUNNING TOTALS	
				WEIGHT ADDED			WEIGHT REMOVED				
	IN	OUT		(Lbs.)	(Inches)	(Lbs. – in.)	(Lbs.)	(Inches)	(Lbs. – in.)	(Lbs.)	(Lbs. – in.)
	N/A	N/A	BASIC AIRPLANE AS DELIVERED	N/A	N/A	N/A	N/A	N/A	N/A	**2,524.32**	**264,103.93**

WEIGHT & BALANCE RECORD

(Continuing History of Changes in Structure or Equipment Affecting Weight and Balance)

AIRPLANE MODEL: COLUMBIA 400 (LC41-550FG)	SERIAL NUMBER: 41044 Date Airplane Weighed – December 1, 2004 (Initial)	PAGE NO. 2

DATE MOVED	ITEM MOVED		DESCRIPTION OF ARTICLE OR MODIFICATION	WEIGHT /MOMENT CHANGE						RUNNING TOTALS	
				WEIGHT ADDED			WEIGHT REMOVED				
	IN	OUT		(Lbs.)	(Inches)	(Lbs. – in.)	(Lbs.)	(Inches)	(Lbs. – in.)	(Lbs.)	(Lbs. – in.)

THE 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
LANCAIR	SB04-003A		6-6-05	FUEL SELECTOR KNOB	7-13-05, 131.9	—
"	SB 05-005A		~~6-6-05~~	Rudder/Elevator Torque tubes	6-23-05	
"	SB 05-006 A			Heat shield rivet replacement	6-25-05	
"	SB 06-004			Mixture Lever	3-24-06	
	SB05-012			THROTTLE LEVER	12-20-06	
	SB06-006			J7-P7 PIN RELOCATION	12-20-06	
	SB06-002C			ELEVATOR TORQUE TUBE REPLACEMENT	12-20-06	
	SB-06-003			Aileron Mass Balance		
	SB-07-007			Linear Bearing Inspection		
	SB07-21-01		12/14/09	N/A NO Air installed	8/2/10	
	SB10-73-01		1/18/10	N/A by date	8/2/10	

Service Bulletin Compliance

MANU-FACTURER	BULLETIN NUMBER	REVISION NUMBER	BULLETIN DATE	SUBJECT	COMPLIANCE ACCOMPLISHED: Date, Time or Cycles	ADDITIONAL COMPLIANCE REQUIRED AT: Date, Time or Cycles

AIRCRAFT REGISTRATION NO.

AIRCRAFT SERIAL NO.

TYPE AIRCRAFT

adNote

2007-26-9 N/M

AD NUMBER

Hartzell Propeller

If multi-engine: ☐ Left ☐ Right ☐ Front ☐ Rear Propeller Model:_____ Serial No.:_____

COMPLIANCE DATE	TOTAL TIME AT COMPLIANCE	TACH OR RECORDING METER TIME AT COMPLIANCE	METHOD OF COMPLIANCE	AUTHORIZED SIGNATURE & NUMBER

Amendment 39-15311. Docket No. FAA-2007-28876; Directorate Identifier 2000-NE-08-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective January 30, 2008.

Affected ADs

(b) This AD supersedes AD 2002-09-08, Amendment 39-12741.

Applicability

(c) This AD applies to all Hartzell Propeller Inc. models ( )HC- ( )( )Y( )-( )( )( ) compact series constant speed or feathering propellers with Hartzell manufactured "Y" shank aluminum blades. These propellers are used on, but not limited to, the following airplanes:

Manufacturer	Airplane Model
Aermacchi S.pA. (formerly Siai-Marchetti)	S-208
Aero Commander	200B and 200D
Aerostar	600
Beech	24, 35, 36, 45, 55, 56TC, 58, 60, and 95
Bellanca	14 and 17 series
Cessna	182 and 188
Embraer	EMB-200A
Maule	M5
Mooney	M20 and M22
Pilatus Britten Norman, or Britten Norman	BN-2, BN-2A, and BN-2A-6
Piper	PA-23, PA-24, PA-28, PA-30, PA-31, PA-32, PA-34, PA-36, and PA-39
Pitts	S-1T and S-2A
Rockwell	112, 114, 200, 500, and 685 series

(d) The parentheses appearing in the propeller model number indicates the presence or absence of an additional letter(s) that varies the basic propeller model. This AD applies regardless of whether these letters are present or absent in the propeller model designation.

Unsafe Condition

(e) This AD results from operators requesting clarification of certain portions of AD 2002-09-08. We are issuing this AD to prevent failure of the propeller blade from fatigue cracks in the aluminum blade shank radius, which can result in damage to the airplane and loss of airplane control.

Compliance

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

(g) If the propeller maintenance records show compliance with AD 77-12-06R2, then compliance was previously done and no further action is required.

(h) Propellers are considered in compliance with the one-time inspection and rework requirements only, of this AD if:

(1) All blades are serial number D47534 and above, or

(2) All blades are identified with the letters "PR" or "R" which are ink-stamped on the camber side, or the letters "RD" which are metal-stamped on the blade butt.

Models ( )HC-( )( )Y( ) Compact Series "Y" Shank Propellers

(i) If propeller models ( )HC-( )( )Y( ) have not been inspected and reworked in accordance with AD 77-12-06R2, then before further flight, do a one-time action to remove, inspect, rework, or replace blades if necessary using Hartzell Service Bulletin (SB) No. 118A, dated February 15, 1977.

Propeller Blade Shank Cold Rolling

(j) One requirement in Hartzell SB No. 118A is the cold rolling of the propeller blade shank.

(1) Cold rolling is a critical requirement in the prevention of cracks in the blade. Propeller repair shops must obtain and maintain proper certification to perform the cold rolling procedure.

(Over)➔

(2) For a current list of propeller overhaul facilities approved to perform the blade shank cold rolling procedure, contact Hartzell Product Support, telephone (937) 778-4200.

(3) Not all propeller repair facilities have the equipment to properly perform a cold roll of the blade shanks.

(4) In addition, any rework in the blade shank area will also necessitate the cold rolling of the blade shank area, apart from the one-time cold rolling requirement of this AD.

Instrument Panel Modifications

(k) If airplanes with propeller models ( )HC-C2YK-( )( )( )/( )( )7666A-( ), installed on (undampered) 200 or more horsepower Lycoming IO-360 series engines, have not been modified using AD 77- 12-06R2, then modify the airplane instrument panel according to the following subparagraphs before further flight. Airplanes include, but are not limited to, Mooney M20E and M20F (normal category), Piper PA-28R-200 (normal category), and Pitts S-1T and S-2A (acrobatic category).

(1) For normal category airplanes, before further flight, remove the present vibration placard and affix a new placard near the engine tachometer that states:

"Avoid continuous operation:
Between 2,000 and 2,350 rpm."

(2) For utility and acrobatic category airplanes, before further flight, remove the present vibration placard and affix a new placard near the engine tachometer that states:

"Avoid continuous operation:
Between 2,000 and 2,350 rpm.
Above 2,600 rpm in acrobatic flight."

(3) For normal category airplanes, re-mark the engine tachometer face or bezel with a red arc for the restricted engine speed range, between 2,000 and 2,350 rpm.

(4) For acrobatic and utility airplanes, re-mark the engine tachometer face or bezel with a red arc for each restricted engine speed range, i.e., between 2,000 and 2,350 rpm and between 2,600 and 2,700 rpm (red line).

Models ( )HC-C2YK-( )( )( )/( )( )8475( )-( ) or ( )( )8477( )-( ) Propellers

(l) If propeller models ( )HC-C2YK-( )( )( )/( )( )8475( )-( ) or ( )( )8477( )-( ) have not been inspected and reworked in accordance with AD 74-15-02, then do the following maintenance before further flight.

(1) Remove propeller from airplane.

(2) Modify pitch change mechanism, and replace blades with equivalent model blades prefixed with letter "F" using Hartzell Service Letter No. 69, dated November 30, 1971 and Hartzell SB No. 101D, dated December 19, 1974.

(3) Inspect and repair or replace, if necessary, using Hartzell SB No. 118A, dated February 15, 1977.

Alternative Methods of Compliance

(m) The Manager, Chicago 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.

(n) Alternative methods of compliance for Hartzell SB No. 118A, dated February 15, 1977, are: Hartzell SB No. 118B, November 28, 1977; SB No. 118C, May 13, 1983; SB No. 118D, March 25, 1991; SB No. HC-SB-61-118E, December 14, 2001; SB No. HC-SB-61-118 revision F, dated August 15, 2002, and Hartzell Manual 133C.

(o) An alternative method of compliance to Hartzell SB No. 101D, dated December 19, 1974, is Hartzell Manual 133C.

(p) No adjustment in the compliance time is allowed.

Related Information

(q) Contact Tim Smyth, Senior Aerospace Engineer, Chicago Aircraft Certification Office, FAA, Small Airplane Directorate, 2300 East Devon Avenue, Des Plaines, IL 60018-4696; e-mail: timothy.smyth@faa.gov; telephone (847) 294-7132; fax (847) 294-7834, for more information about this AD.

Material Incorporated by Reference

(r) You must use the service information specified in Table 1 of this AD to perform the actions required by this AD. The Director of the Federal Register previously approved the incorporation by reference of the documents listed in Table 1 of this AD in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 on June 13, 2002. Contact Hartzell Propeller Inc. Technical Publications Department, One Propeller Place, Piqua, OH 45356; telephone (937) 778-4200; fax (937) 778-4391, for a copy of this service information. You may review service information copies at the FAA, New England Region, 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/cfr/ibr-locations.html.

Table 1.--Incorporation by Reference

Hartzell Service Information	Page	Revision	Date
SB No. 101D	All	D	December 19, 1974
SB No. 118A	All	A	February 15, 1977
SL No. 69	All	1	November 30, 1971

Issued in Burlington, Massachusetts, on December 17, 2007.

Peter A. White, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

Single
Engine

OWNER ADVISORY

Cessna
A Textron Company

SEB-28-02

TITLE

FUEL - LOW FUEL PRESSURE SWITCH SEALING

TO:

Cessna Corvalis and TTx Owners

REASON

This owner advisory is to inform you that SEB-28-02 has been issued to improve the reliability of the low fuel pressure indication and the operation of the auxiliary boost pump, as applicable.

DESCRIPTION

SEB-28-02 provides instructions to do an inspection to see if sealant is installed on the terminals of the low fuel pressure switch and the wire bundle assembly that attaches to it with silicone sealant. If sealant is not installed, instructions are provided to install the sealant.

COMPLIANCE

MANDATORY. This service bulletin must be accomplished at the next 100-hour or 12-month (annual-type) inspection.

LABOR HOURS

Inspection man hours are negligible.

0.2 man-hour to install the sealant.

WARRANTY

For airplanes in warranty and identified within the serial effectivity:

If necessary, applicable parts credit and a labor allowance credit of 0.2 man-hour per airplane will be provided to install the sealant.

To receive credit, the work must be completed and a warranty claim submitted by a Cessna Authorized Service Facility within 30 calendar days of service bulletin compliance before the credit expiration dates shown below.

Domestic ..... April 8, 2015
International ..... April 8, 2015

Please contact a Cessna Authorized Service Facility for detailed information and arrange to have Cessna service bulletin SEB-28-02 accomplished on your airplane.

Access the QR code for the instructional video link that follows or use the URL address:

Select this link:

http://textron.vo.llnwd.net/o25/CES/CustomerService/SEB-28-02/SEB-28-02.html

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 Support Login" link at www.Cessna.com to register.

Cessna Aircraft Company, Cessna Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

Cessna
A Textron Company

Owner Advisory

June 21, 2011

SB11-24-01A

Dear Corvalis Owner:

This Owner Advisory is to inform you that SB11-24-01 14 and 28 Volt Power Grid Modification for Battery Charging from the Ground Power Unit in the Event of a Dead Battery has been issued.

This Service Bulletin accomplishes a modification to the aircraft power grid to incorporate battery relay actuation via the ground power unit.

Compliance is Optional: May be accomplished if desired.

NOTE: This Modification Kit supercedes Service Letter SL-07-013 28 Volt Power Grid Modification for Battery Charging from the Ground Power Unit in the Event of a Dead Battery.

NOTE: If Service Letter SL-07-013 28 Volt Power Grid Modification for Battery Charging from the Ground Power Unit in the Event of a Dead Battery has been complied with, no further compliance is required.

The information contained in the referenced Cessna Service Bulletin must be considered an amendment to the Cessna Manufacturer's Service/Maintenance Manual.

Please contact a Cessna Single Engine Authorized Service Facility for detailed information and arrange to have Cessna Service Bulletin SB11-24-01 accomplished on your airplane.

Cessna Aircraft Company, Customer Service, P.O. Box 7706, Wichita, Kansas 67277, U.S.A. (316) 517-5800, Facsimile (316) 517-7271

www.cessnasupport.com

Cessna
A Textron Company

Owner Advisory

August 25, 2008 SB-07-018A OA1

Dear Cessna Owner:

A. On June 20, 2008 the following Owner Advisory message was sent to applicable owners of record in SB-07-018 OA.

Dear Cessna Owner:

This Owner Advisory is to inform you that Cessna Service Bulletin SB-07-018: Linear Bearing Access Panel Installation has been issued.

SB-07-018 provides the parts and procedures necessary to install access panels at wing station WS 86 of the left and right wings. The access panels are designed to help facilitate maintenance/debris removal of the aileron control tube linear bearings for foreign object debris (FOD) as required by Section 5 of the latest revision to the Airplane Maintenance Manual.

Compliance:

Mandatory, prior to flight if any of the following conditions are found during accomplishment of the aileron linear bearing inspection in accordance with SB-07-002 (any revision) or Section 5 of the Airplane Maintenance Manual: aileron linear bearing damage, attached adhesive, or irretrievable foreign object debris (FOD).

Otherwise

Optional: may be accomplished if desired.

NOTE: If wing access panels have already been installed at wing station WS 86 by another Cessna approved method, compliance with this Service Bulletin is not applicable.

The initial release of SB-07-018 is approved by the FAA Seattle Aircraft Certification Office, by letter 100S-GA-08-21, as an alternative method of compliance with FAA Airworthiness Directive AD 2007-07-06 and a copy of the letter is attached to Owner Advisory. Compliance with SB-07-018 is considered as a terminating action for AD 2007-07-06.

Credit Information:

Credit will be applicable for airplanes in warranty only as stated below.

Credit will be provided only if aileron linear bearing damage, attached adhesive, or irretrievable foreign object debris (FOD) is found as described in the Compliance section.

Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, Kansas 67277, U.S.A. (316) 517-5800 Facsimile (316) 942-9006

Include a copy of the logbook entries with the Warranty Claim that show compliance with Service Bulletin SB-07-002 (or later revision) and findings of aileron linear bearing damage, attached adhesive, or irretrievable foreign object debris (FOD).

Applicable parts credit and a labor allowance credit of 10.8 man-hours per airplane will be provided to accomplish SB-07-018.

If the color of the access panel joggle assemblies and access panels do not match the surrounding color of the lower wing area, up to 3.0 man-hours and a miscellaneous parts credit of $50.00 per airplane will be provided to paint the access panel joggle assemblies and access panels.

To receive credit, the work must be completed and a Warranty Claim submitted by a Cessna Single Engine Service Station within 30 calendar days of Service Bulletin compliance before the credit expiration dates shown below.

Domestic . . . . . May 30, 2009
International . . . . . May 30, 2009

Please contact a Cessna Single Engine Service Station for detailed information and arrange to have Cessna Service Bulletin SB-07-018 accomplished on your airplane.

B. On August 25, 2008 the following Owner Advisory message will be sent to applicable owners of record in SB-07-018A OA1.

Dear Cessna Owner:

This Owner Advisory is to inform you that Cessna Service Bulletin SB-07-018A: Linear Bearing Access Panel Installation has been issued.

SB-07-018 Revision **A** was issued because the FAA has provided notification that their original letter of June 11, 2008 approving SB-07-018 as an Alternate Method of Compliance (AMOC) with FAA Airworthiness Directive AD 2007-07-06 was issued in error. FAA AMOC letter 100S-GA-08-67 dated July 16, 2008 has been issued and supersedes the original AMOC letter. A copy of the new AMOC letter is attached to this Owner Advisory.

All other content aspects of SB-07-018A remain the same as the original issue of SB-07-018.

If your airplane is in compliance with the original issue of SB-07-018 then compliance with SB-07-018A is not required.

If SB-07-018 has not been accomplished on your airplane, please contact a Cessna Single Engine Service Station for detailed information and arrange to have Cessna Service Bulletin SB-07-018A accomplished on your airplane.

* * * * * * *

Cessna
A Textron Company

Owner Advisory

August 4, 2008

SB08-74-02A

Dear Cessna Owner:

On August 4, 2008 the following Owner Advisory message will be sent to applicable owners of record in SB08-74-02A.

Dear Cessna Owner:

This Owner Advisory is to inform you that SB08-74-02: Unison Industries/Slick 4300/6300 Magnetos Inspection has been issued to transmit Teledyne Continental Service Bulletin SB08-8 and Critical Service Bulletin CSB08-9: Slick Service Bulletin Nos. SB2-08 and SB3-08.

The magnetos on your airplane may be affected as summarized below.

Unison Industries/Slick Service Bulletin SB2-08 concerns premature wear of the breaker point cam. Premature cam wear can cause excessive timing drift, causing low magneto output power. SB2-08 affects Unison Industries/Slick 4300/6300 magnetos with serial numbers 0610XXXX through 0804XXXX. Also affected are Unison Industries/Slick 4300/6300 magnetos that have had the cam, or the cam as part of the contact point assembly kit, replaced after October 1, 2006.

Compliance is mandatory: affected magnetos shall be inspected within the next 50 hours of operation as of May 2, 2008. Then, inspect every 100 hours thereafter or annual inspection, whichever comes first.

Unison Industries/Slick Service Bulletin SB3-08 concerns premature wear of the carbon brush. Premature brush wear can lead to failure of the magneto to provide consistent spark and possible loss of engine power. SB3-08 affects Unison Industries/Slick 4300/6300 magnetos with serial numbers 0409XXXX and UP. Also affected are magnetos that have had the carbon brush or distributor block replaced after September 1, 2004.

Compliance is mandatory; affected magnetos shall be inspected as follows:

Magneto serials numbers 0409XXXX – 0611XXXX and all magnetos that have had a carbon brush or distributor block replaced between September 1, 2004 and November 30, 2006 perform Compliance Steps 2 and 3 only.

For all magneto serials 0612XXXX and UP, and all magnetos that have had a carbon brush or distributor block replaced on or after December 1, 2006, perform Compliance Steps 1 through 3.

Compliance Steps:

Note: Total magneto operating time is defined as magneto engine operating time since new or since carbon brush replacement, whichever is less.

Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, Kansas 67277, U.S.A. (316) 517-5800, Facsimile (316) 942-9006

1. For magnetos with some engine operating time, but less than 50 hours of total magneto operating time, inspect within the next 5 hours of operation. Re-inspect the magneto every 15-20 hours of operating time until the total magneto operating time exceeds 50 hours.

2. For magnetos with greater than 50 hours to 250 hours of total magneto operating time, or last inspected at 50 hours or less of total magneto operating time, inspect at 250 hours plus or minus 10 hours of total magneto operating time.

3. For magnetos with greater than 250 hours of total magneto operating time that have not yet been inspected pursuant to SB3-08, inspect the magneto within the next 50 hours or at the next annual inspection, whichever occurs first.

NOTE: Refer to the **latest revision** of the specific Service Bulletin for detailed requirements and information. The documents concerning the magnetos can be viewed at the following Internet website: http://www.tcmlink.com/servicebulletins/index.cfm

If applicable, refer to the warranty information section of Teledyne Continental Service Bulletin SB08-8 and Critical Service Bulletin CSB08-9 (or later revisions), and Unison Industries/Slick Service Bulletin Nos. SB2-08 and SB3-08 (or later revisions).

Please contact a Cessna Single Engine Service Station for detailed information and arrange to have Cessna Service Bulletin SB08-74-02 accomplished on your airplane.

* * * * * * *

Lancair N611RJ
Rudy Englishman

CW 7-13-05
131.9 Hrs
SEE LOG ENTRY

THE LANCAIR COMPANY
Certified Aircraft

SERVICE BULLETIN

SB-04-003A

Mandatory

July 6, 2005

Model 300/350/400

Fuel Selector Knob

EFFECTIVITY

Lancair LC40-550FG serial number 40079, Lancair LC41-550FG aircraft serial numbers 41002 through 41096 and LC42-550FG aircraft serial numbers 42003 through 42075.

PURPOSE

To apply thread lock adhesive to the fuel selector knob retainer screw and apply red paint to the "OFF" engraving of the fuel selector plate. This Mandatory Service Bulletin supersedes SB-04-003 unless previously complied with.

COMPLIANCE

Initial inspection shall be complied with before further flight; if defects are noted permanent compliance will be required before further flight. If no defects are noted initial inspection must be complied with prior to each flight and not to exceed the next 10 hours time in service at which time permanent compliance must be accomplished.

APPROVAL

FAA approval has been obtained on all technical data in this Mandatory Service Bulletin that affects type design.

RESOURCES

One (1) hour of labor required for permanent compliance with this Mandatory Service Bulletin.

MATERIAL INFORMATION

The following materials are required for compliance with this Mandatory Service Bulletin. Parts can be obtained from The Lancair Company.

ITEM NO.	DESCRIPTION	P/N OR SPEC.	SUPPLIER	QUANTITY
1	Mandatory Service Bulletin	SB-04-003A	TLC	1
2	Compliance kit (paint and brush)	CK-003	TLC	1
3	Thread lock adhesive	Loctite® 242	Loctite®	AR

INSTRUCTIONS FOR COMPLIANCE

Initial Inspection

The Lancair Company
22550 Nelson Road
Bend, OR 97701
1-888-599-8660
E-mail: Product_Support@Lancair.com

NOTE: Compliance with the **Initial Inspection** can be accomplished by the owner operator in accordance with 14 CFR 43.3(g); however, accomplishment of the **Permanent Compliance Instructions** must be performed by an appropriately rated mechanic.

1. For aircraft model LC42-550FG serial numbers 42002 through 42062 inspect aircraft log book for previous compliance with SB-04-003. If found previously complied with no further action is required. If previous compliance is not found follow remaining steps in this Mandatory Service Bulletin, SB-04-003A.
2. Remove the co-pilot seat cushion and center console access panel per the Lancair 350/400 AMM Ch.25.
3. With one hand grab the fuel selector shaft through the access panel hole and push on the shaft. With the shaft pushed up rotate the fuel selector knob with the opposite hand checking for security of the knob assembly to the shaft. Reference **Figure 1** and **Figure 2**.
4. Visually inspect the under side of the fuel selector knob assembly to insure that the three (3) retaining screws are installed securely, evidenced by the presence of three screw head protrusions with no protrusion of the screw shank.
5. If any evidence of looseness is noted proceed to the **Permanent Compliance Instructions** before further flight.
6. If no defects are noted reinstall center console access panel and co-pilot seat bottom cushion; **Initial Inspection** must occur prior to each flight, total time in service not to exceed 10 hours from receipt of this Mandatory Service Bulletin at which time the **Permanent Compliance Instructions** must be accomplished.

Permanent Compliance Instructions

1. Remove the co-pilot seat cushion and center console access panel per the Lancair 350/400 AMM Ch.25.
2. Remove the fuel selector knob by inserting a Phillips screwdriver up through the inside of the center console through the access hole in the fuel selector plate and remove the three knob retaining screws, rotating the knob to gain access to each screw. Reference **Figure 3**.
3. Remove the fuel selector retaining plate Allen head attach screw. Reference **Figure 3**.
4. Apply Loctite® 242 thread lock adhesive to the threads of the fuel selector retaining plate screw and reinstall hand tightening snug.
5. If "OFF" engravings on the fuel selector plate are not red, apply red paint, supplied in Compliance Kit CK-003, to the "OFF" markings (2) and let dry. Reference **Figure 3**.
6. Inspect knob screw holes for evidence of stripping, if stripped contact the factory for a replacement fuel selector knob. If knob screw holes are not damaged, reinstall knob to plate in reverse order of disassembly, tightening knob retaining screws (3) snug.
7. Reinstall center console access panel and seat bottom cushion per the Lancair 350/400 AMM Ch.25.
8. Make log entry stating compliance with this Mandatory Service Bulletin, SB-04-003A. A copy of this log entry must accompany the Warranty Claim Form for warranty reimbursement.

The Lancair Company
22550 Nelson Road
Bend, OR 97701
1-888-599-8660
E-mail: Product_Support@Lancair.com

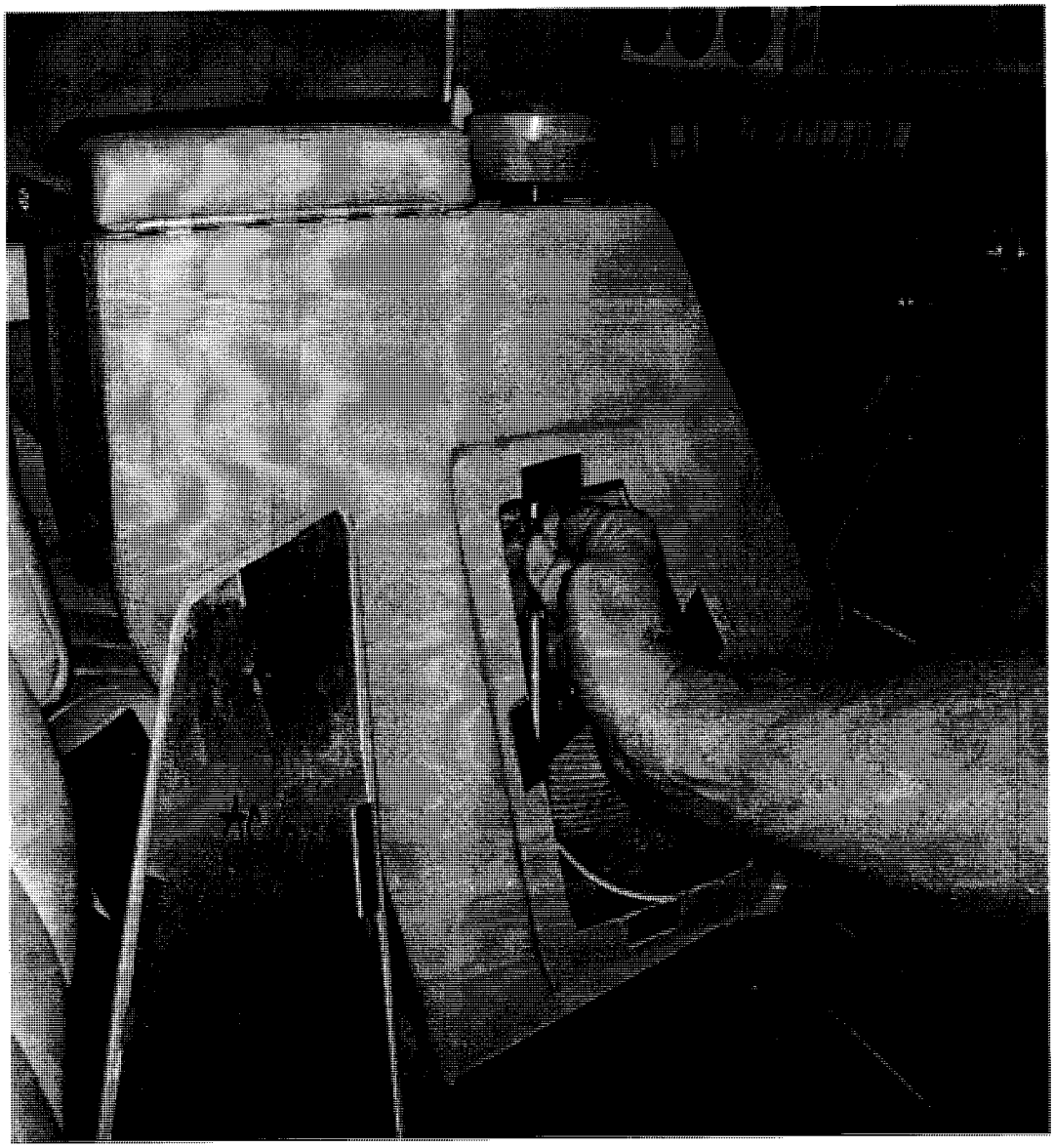


Figure 1
Pushing shaft up

The Lancair Company
22550 Nelson Road
Bend, OR 97701
1-888-599-8660
E-mail: Product_Support@Lancair.com

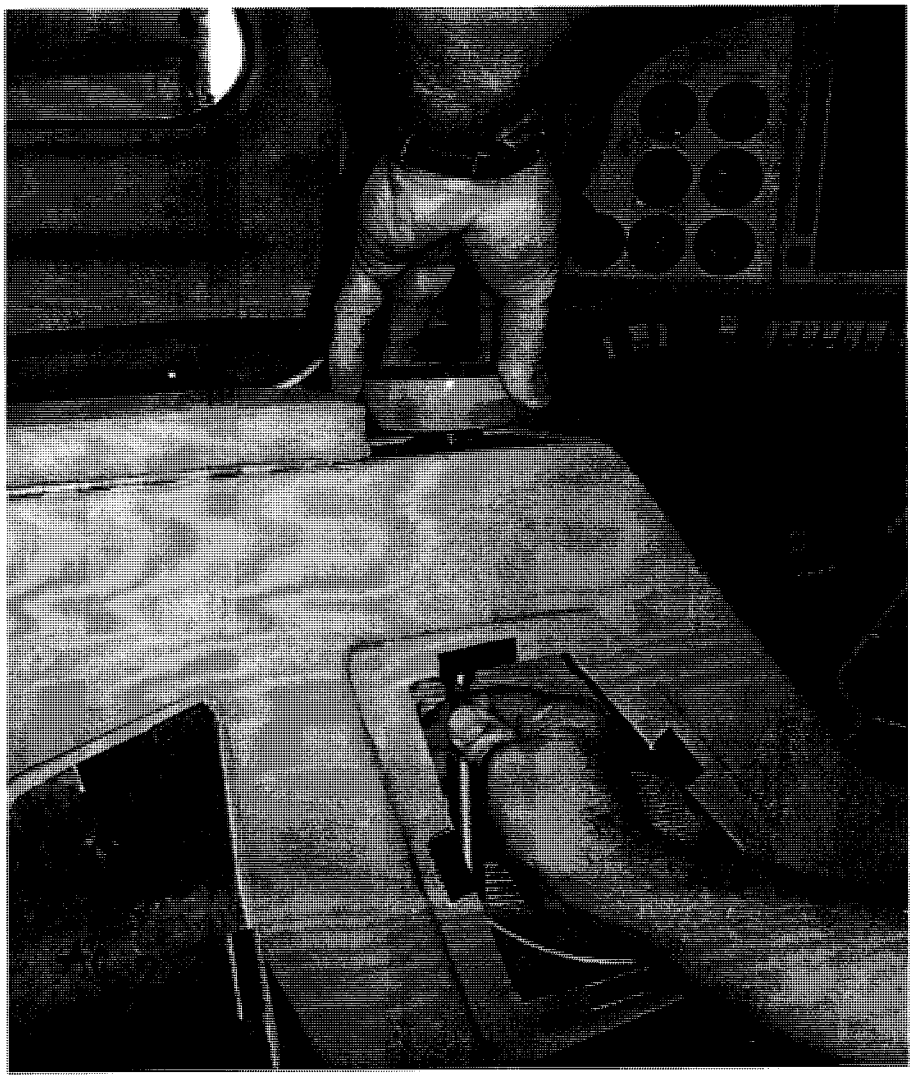


Figure 2
Pushing shaft up and rotating knob

The Lancair Company
22550 Nelson Road
Bend, OR 97701
1-888-599-8660
E-mail: Product_Support@Lancair.com

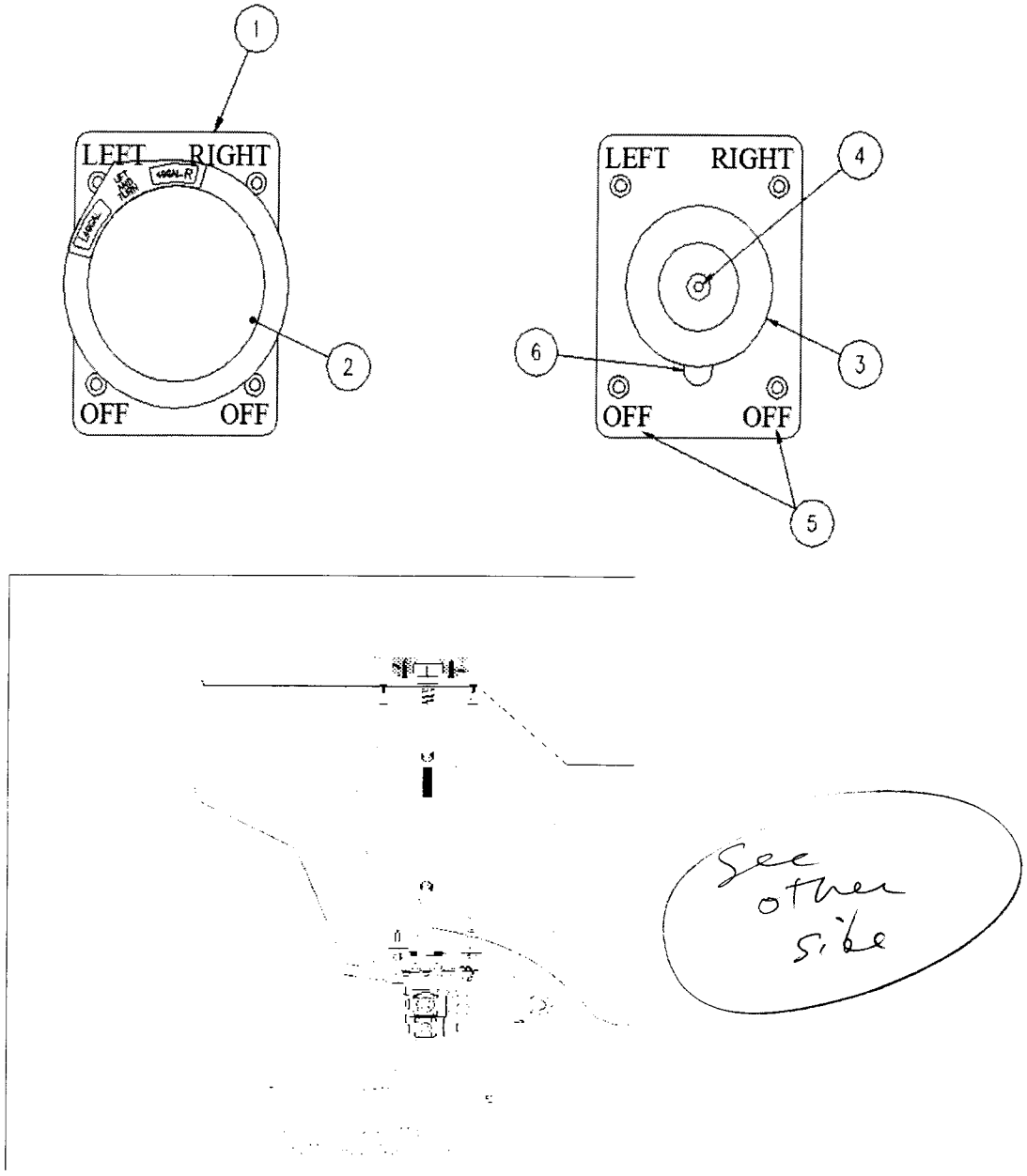
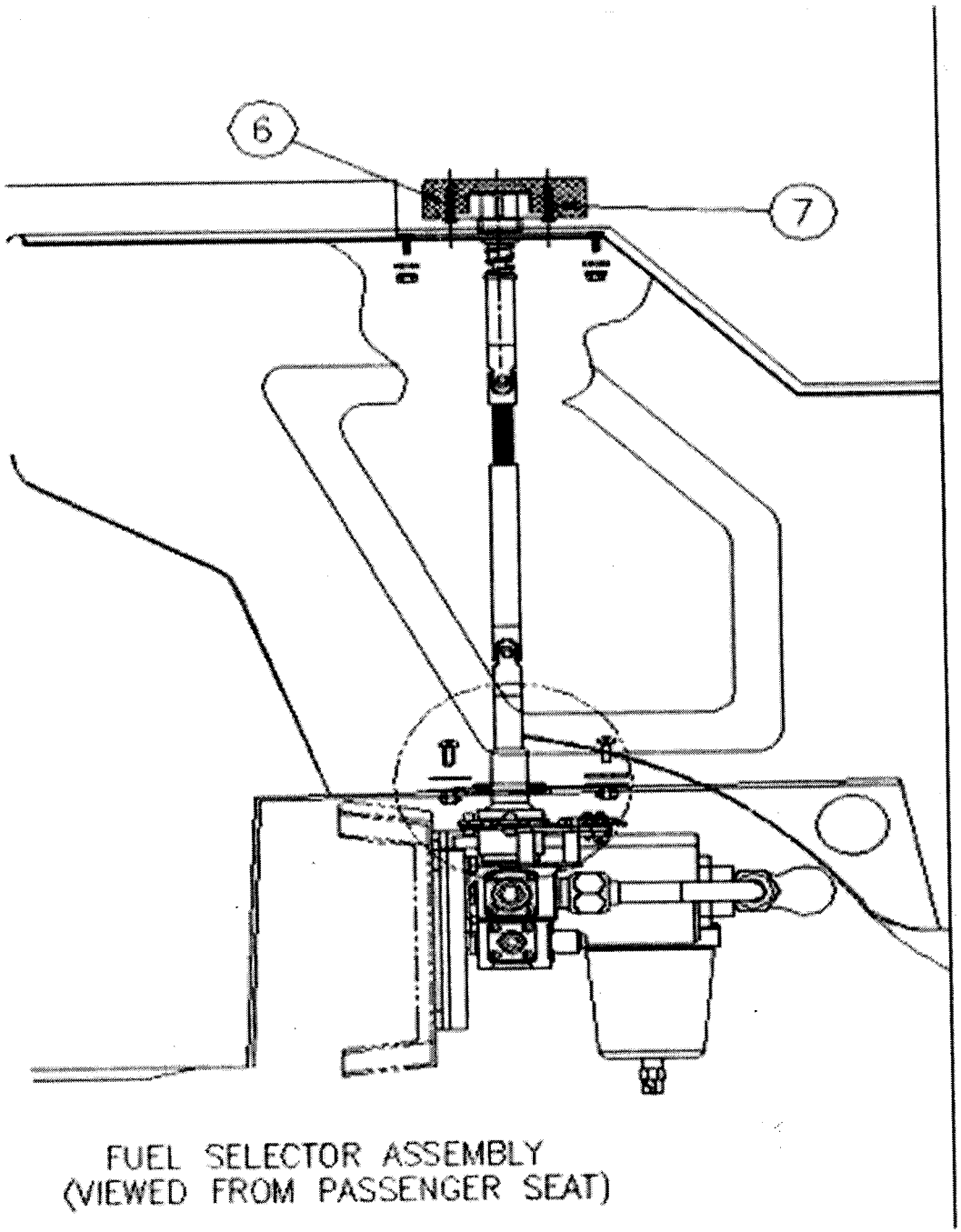


Figure 3

1. Fuel selector plate
2. Fuel selector knob
3. Fuel selector retaining plate
4. Fuel selector retaining plate attach screw
5. "OFF" markings, to be marked in red
6. Fuel selector plate access hole
7. Selector knob attach screws

The Lancair Company
22550 Nelson Road
Bend, OR 97701
1-888-599-8660
E-mail: Product_Support@Lancair.com



FUEL SELECTOR ASSEMBLY
(VIEWED FROM PASSENGER SEAT)

Figure 3

OWNER ADVISORY

SEL-28-04

TITLE

FUEL - TRANSMITTAL OF CONTINENTAL MOTORS AIRCRAFT ENGINE SERVICE BULLETIN SB13-4A

TO:

Cessna R172 (T-41), FR172, R172, A185, A188, T188, A-A188, 206, U206, U206/TU206, P206, P206/TP206, 207/T207, 210, 210/T210, P210, T210, 300 (LC40–550FG), 350 (LC42-550FG), 400 (LC41–550FG), and T240 Owner

REASON

This owner advisory is to inform you that SEL-28-04 has been issued.

The purpose of SEL-28-04 is to transmit the attached Continental Motors Aircraft Engines SB13-4A, Aneroid Equipped Fuel Pumps.

DESCRIPTION

Continental Motors has discovered that there are a limited number of bellows used in their aneroid equipped fuel pumps which, though they pass acceptance testing, exhibit a potential for reduced service life.

A bellows that does not operate correctly will not react to differential pressure as designed, and this can cause the fuel mixture, especially at higher power settings, to run leaner than design specifications.

COMPLIANCE

MANDATORY. This service letter must be accomplished within the next 50 hours of operation or at the next oil change, whichever occurs first.

LABOR HOURS

Refer to Continental Motors Aircraft Engines SB13-4A (or latest revision)

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 Support Login" link at www.Cessna.com to register.

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