NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

October 21, 2014

AIRWORTHINESS

Group Chairman's Factual Report

DCA13FA148

Attachment 2 – N169GL Maintenance Records
(28 pages)

MTW AEROSPACE, Inc.

7050 Hwy 80 West
Montgomery, AL 36108

MATERIAL CERTIFICATION

PURCHASE ORDER #:

PART NUMBER: 114-380041-9

DESCRIPTION: ACTUATOR ASSY - MLG

SERIAL NUMBER: 120A

SHIP DATE: 08/15/2011

The undersigned hereby certifies that the material shipped against the above purchase order is in AS REMOVED condition and was originally manufactured by AIRIGHT or one of their designated licensees. That it was not obtained from any U.S. Government source, was not subjected to fire and was obtained from the stock of AIRIGHT Aircraft Serial No. UE-24, P126377

This is to certify that each part covered by this packing list and invoice were produced by a Manufacturer holding an FAA Approved Production Inspection System issued under FAR 21, Sub. Part F. or by Manufacturer holding an FAA Production Certificate issued under FAR 21, sub. Part O. These parts were made by the prime manufacturer or under licensee agreement with the prime manufacturer.

SOURCE: BEECH 1900D
Serial: UE-24
Registration: N124CJ
Former Operator: COLGAN AIR SERVICES
Part: PART 121

Non-Incident Related

Authorized Signature: [redacted]
NICK SHOUPE
Title: SALES

Great Lakes Aviation, Ltd.

PURCHASE ORDER

R54914

Vendor # --> 100702

APPH WICHITA INC
1445 SIERRA DRIVE
WICHITA, KS 67209-2933

TEL: [redacted]
FAX: [redacted]

CRO# 201032
SHOP# 631010
CUST# 4116984
SHIP# 40070

Ship To

GREAT LAKES AVIATION
1022 AIRPORT PARKWAY
CHEYENNE, WYOMING 82001

TEL: [redacted]
ATTN: PARTS DEPARTMENT

Buyer: A64
Requested By: LINDA

P.O.DATE	NEEDED BY	SHIP VIA	F.O.B.	TERMS
08/15/11	08/15/11	UPS GND		

L#	QTY	UNIT	PART# / DESCRIPTION	PRICE	EX.PRICE
01	1	EA	114-380041-9 MLG ACTUATOR (AIRIGHT) Ser#: 120A J.C.#: UE-24 G.L.#: DGR INSPECT, TEST AND VERIFY FAULT INDICATED UNLESS SPECIFIED OTHERWISE. PROVIDE A DETAILED TEARDOWN REPORT WITH QUOTE. USE TECHNICAL DATA DRAWING OR BLUEPRINT BEECH-APPH 40600 AS REVISED ALL REPAIRS REQUIRE WRITTEN APPROVAL PRIOR TO ANY WORK BEING PERFORMED. COMPLY WITH ALL APPLICABLE AIRWORTHINESS DIRECTIVES, 8130-3 REQUIRED FOR ALL REPAIRS**ALL TECH DATA MUST APPEAR ON QUOTE** FOR QUESTIONS REGARDING THIS ORDER, PLEASE CONTACT LINDA STUEVE AT [redacted] FAX INFORMATION TO [redacted], OR E-MAIL IT TO [redacted] ALL REPAIR QUOTES MUST BE FAXED TO [redacted] OR	0.00 40600-8	0.00
				TOTAL	

RECEIVED
AUG 19 2011

Authorized Signature

Great Lakes Aviation, Ltd.

PURCHASE ORDER

R54914

Vendor # --> 100702

APPH WICHITA INC
1445 SIERRA DRIVE
WICHITA, KS 67209-2933

TEL: [redacted]
FAX:

Ship To

GREAT LAKES AVIATION
1022 AIRPORT PARKWAY
CHEYENNE, WYOMING 82001

TEL: [redacted]
ATTN: PARTS DEPARTMENT

Buyer: A64
Requested By: LINDA

P.O.DATE	NEEDED BY	SHIP VIA	F.O.B.	TERMS
08/15/11	08/15/11	UPS GND		

L#	QTY	UNIT	PART# / DESCRIPTION	PRICE	EX.PRICE
			EMAILED TO THE FOLLOWING ADDRESS ONLY: [redacted] BOUGHT AS REMOVED FROM MTW ON PO# S54891 REMOVED FROM UE-24 UNKNOWN TIMES PLEASE EVALUATE FOR OVERHAUL AND FUNCTION TEST SHUTTLE VALVE AS REQUIRED AND ADVISE		
				TOTAL	0.00

Authorized Signature

APPH WICHITA, Inc.

BBA Aviation

Date: 22 Aug 2011

Part #: ~~40600-10~~ 40600-12 **Description:** ACTUATOR ASSY **Serial Number:** 120A

Received From: GREAT LAKES AVIATION **PO:** R54914

Ship To: ATTN: PARTS DEPARTMENT, 1022 AIRPORT PARK **Ship Via:**

City, State, Zip: CHEYENNE, WY, 82001, US

Warranty	Overhaul	Repair	Rebuilt	Test	Inspect	Issue 8130
	X			X	X	X

Cycles Since New (CSN): Cycles Since OH (CSO): Cycles Since Repair (CSR):

Total Time (TT): Time Since OH (TSO): Time Since Repair (TSR):

Date of Approval to Proceed 9/1/11 [redacted] Date of charges Approved 9/1/11 [redacted]

Customer Purchase Order Instructions / Comments

Unit received as a 40600-8. Upgraded to -12

Work Performed

Work Performed IAW: AIRIGHT 40600 DRAWING, ISSUED 8.10 REV AC

PERFORMED A FUNCTIONAL TEST PER F.T.P 40600. NO DEFECTS NOTED AT 31 SEP 15 2011

Parts Replaced

1	40600-10	SEAL KIT		
1	40610-2	LOCK NUT		
1	40603-8	END CAP		
1	40605-3	RETAINER		
1	40602-8	HOUSING		
1	53-012-062-0560	ROLL PIN		
1	PLGA 2180010A	PLUG		
1	40601-5	BARREL		
2	MS 21240-0916	BEARING		

Disassembly	[redacted]
Clean	
Inspected	
Assembly	
Functional Test Performed	SEP 15 2011
Final Inspection Performed	
FAA Form 8130 Issued	

Work Order Number 631010

CRO Number 206032

[redacted]

Repairman's Signature

[redacted]

Inspector's Signature

apph WICHITA

BBA Aviation

APPH Wichita
1445 Sierra Drive
Wichita, KS 67209
Telephone: [redacted]
Facsimile:
Email: [redacted]

TEAR DOWN REPORT

CUSTOMER NAME AND ADDRESS: GREAT LAKES
1022 AIRPORT PARKWAY
CHEYENNE, WY 82001

DATE: 8/3011

ATTENTION: SHARI RACE

SUBJECT: ACTUATOR ASSY.

PO#: R54914

PART NUMBER: 40600-10 SERIAL NUMBER: 120A

DATE RECEIVED AT APPH: 8/19/11

SPECIAL INSTRUCTIONS FROM CUSTOMER: OVERHAUL

TEST RESULTS, IF PERFORMED, PRIOR TO DISASSEMBLY OR REPAIR: NONE PERFORMED

OBVIOUS PROBLEMS NOTED DURING TEAR DOWN: DURING TEAR DOWN WE FOUND THE UNIT TO NEED ONE (40603-8) END CAP REPLACED DUE TO DAMAGE AND ONE (PLGA2180010A) LEE PLUG TO BE INSTALLED IN THE NEW END CAP. ONE (40610-2)LOCKNUT, (40605-3) RETAINER, (40602-8) HOUSING, AND ONE (53-012-062-0568) ROLL PIN WILL ALSO BE REPLACED. ALSO BEING REPLACED WILL BE ALL SEALS AND ORINGS.

REASSEMBLY PROCEDURE: WILL BE REASSEMBLED IAW 40600 REV AC DRAWING.

TEST RESULTS FOLLOWING REPAIR OR OVERHAUL: WILL BE FUNTIONAL TESTED IAW 40600 REV AC AND 40600 F.T.B.

WORK ORDER #: 631010

INSPECTOR: JOSH BURDEN NUMBER: [redacted]

APPH WICHITA

APPH Wichita, INC
1445 SIERRA DRIVE
WICHITA, KS 67209
PH [redacted]
FAX
e-mail: [redacted]

Repair Estimate

Response required

Date: 08/31/11 Your Purchase Order: R54914

To: GREAT LAKES AVIATION APPH CRO: 256032

Attn: LINDA STUEVE APPH Shop Order: 631010 R54883

Fax: WILL EMAIL

P.N. 40600-10(114-380041-17) S.N. 120A

This unit wasreceived as 40600-8(114-380041-9) and will be overhauled and upgraded to the -10 configuration upon approval.

The above unit has been evaluated and quote approval is required prior to completion.

Standard/Contract Overhaul	$1,200.00

Parts required over and above standard overhaul:

Part Number/ARD	Description	Qty	Net Price	Ext Price
40610-2	LOCK NUT(CRACKED)	1	$65.00	$65.00
40603-8	END CAP(CORROSION)	1	$775.00	$775.00
40605-3	RETAINER(DAMAGED)	1	$50.00	$50.00
40602-8	HOUSING(CORROSION)	1	$995.00	$995.00
53-012-062-0560	ROLL PIN(REQUIRED W/ HOUSING)	1	$5.00	$5.00
PLGA2160010A	LEE PLUG(REQUIRED W/ HOUSING)	1	$10.00	$10.00
Total Excluded Parts				$1,900.00
Total Overhaul for approval:				$3,100.00

Please advise your disposition by noting and signing below and faxing to [redacted]

THIS IS ONLY AN ESTIMATE. AN INVOICE WILL BE RENDERED AT COMPLETION FOR ACTUAL TIME AND MATERIAL USED. APPH HAS DONE ITS BEST TO ENSURE THIS QUOTE IS ACCURATE, HOWEVER UNFORESEEN, ADDITIONAL CHARGES MAY APPLY.

APPH Wichita Lead Time Will Be: 30 days from the date of receipt. *Subject to delay depending upon customer quote approval.*

This order is scheduled to ship via: UPS

This order is scheduled to ship: GROUND Account:

Please advise if you would like to change the scheduled shipping carrier or method.

[redacted] 8/31/11

Quote Approved

Please Return As-Is
$150.00 Eval Fee will apply.

Thank you for your business! If you have any questions regarding this quote, please don't hesitate to contact us.

Julie Jones

This estimate is valid for 30 days.
If no response is received within 30 days, a charge equal to 15% of the standard overhaul/repair charge will be added, per month, to the final invoice amount.
If no response is received after 6 months from the date of this estimate, APPH will assume title of this product and reserves the right to sell this item on the open market as compensation for costs incurred.

Unless otherwise agreed, Standard APPH Wichita Terms and Conditions of Sale Apply. A copy can be found at our web site: www.apph.com/wichita or can be sent via fax or e-mail upon request.

Jones, Julie (APPH-WIC)

From: Jones, Julie (APPH-WIC)
Sent: Friday, September 09, 2011 2:58 PM
To: [redacted]
Subject: P/O R54914

Hello Linda,

This unit will be upgraded to the 40600-12(114-380041-21) as we do not have the housing required for the -10(-17) and no longer manufacture them. Please update your records to reflect this information. Please feel free to contact me if you have any questions.

Thank you,
Julie Hibarger
APPH Wichita
Customer Service Specialist
P: [redacted]
F:
em

MRO

apph

BBA Aviation

Shop Order	Part	Description	Quantity	BOM Rev	Rout Rev
631010 / * / *	40600-10	ACTUATOR ASSY	1	1	2

CRO Number	Customer P/N	Customer	Customer PO
206032 / 1	40600-10	GREAT LAKES AVIATION	R54914

Print Date	Raised By	Serial No.	Start Date	Required By	Page
22 Aug 2011	JULIE.JONES	120A	30 Aug 2011	16 Sep 2011	1 of 2

Router Notes

REFERENCE APPH WICHITA DWG. 40600 REVISION AC

ROUTER REV. 2 - VENDOR NAME & PROCESS, STANDARDIZE ROUTER, REVISE PRINT REV.

354863

OP No.	Due Date	Work Center	Operation	Setup	Unit Time	OP Time
11	30Aug11	AIR	DISASSEMBLE,CLEAN, INSPEC	0.00	0.55	0.55

1 DISASSEMBLE,CLEAN, INSPEC

REFERENCE AIRIGHT 40600 DRAWING CURRENT REVISION

DISASSEMBLE UNIT

CLEAN UNIT

INSPECT PIECE PARTS

Good	Scrap	Oper.	Insp.	Date
1	Ø	[redacted]	N/A	AUG 25 2011

354864

OP No.	Due Date	Work Center	Operation	Setup	Unit Time	OP Time
21	16Sep11	RONDI	AIRCAPITOL NDI SERVICE	80.00	0.00	80.00

1 OUTSIDE PROCESS

NON-DESTRUCTIVE INSPECT (MAGNAFLUX PER ASTM 1444-01) PART NUMBERS
25719-6 SLIDE
40611-1 ROD END
25720-2 WASHER
25720-3 WASHER
40604-2 PISTON
40614-1 RETAINER
NON-DESTRUCTIVE INSPECT (PENETRANT PER ASTM E-1417-99 PART NUMBERS)
40602-6 HOUSING
40603-6 END CAP
25716-1 SPRING
40601-3 BARREL

REPLACE IF REQUIRED (CHECK YES OR NO)
YES ✓ NO ____ SWITCH - 1EN51-6
YES ✓ NO ____ CONNECTOR - MS3126F12-10P
YES ____ NO ✓ SLIDE - 25719-6
*NOTE: SLIDE REPLACEMENT IS REQUIRED IF CUSTOMER IS REQUESTING AN
UPGRADE TO A -10 ACTUATOR. (Slide Lock is shoter than 1.105")

Good	Scrap	Oper.	Insp.	Date
1	Ø	[redacted]	N/A	AUG 26 2011

354865

OP No.	Due Date	Work Center	Operation	Setup	Unit Time	OP Time
22	16Sep11	INSP.	VENDOR COMPLIANCE	0.00	0.10	0.10

1 INSPECT FOR VENDOR

COMPLIANCE 8130 P126968

Good	Scrap	Oper.	Insp.	Date
1	Ø	N/A	[redacted]	AUG 30 2011

MRO	Shop Order	Part	Description	Quantity	BOM Rev	Rout Rev
	631010 / * / *	40600-10	ACTUATOR ASSY	1	1	2

354866	OP No.	Due Date	Work Center	Operation	Setup	Unit Time	OP Time
	30	16Sep11	OTEST	ASSEMBLE AND TEST	0.00	1.00	1.00

1 ASSEMBLE, TEST, PAINT

REFERENCE AIRIGHT 40600 DRAWING CURRENT REVISION

.

ASSEMBLE

.

FUNCTIONAL TEST ✓

.

PAINT

.

INSTALL ROD END AND SWITCH ASSY

.

FINAL FUNCTIONAL TEST

Good	Scrap	Oper.	Insp.	Date
1	Ø	[redacted]	N/A	9.13.11
1	Ø		N/A	SEP 14 2011
1	Ø		N/A	9.15.11
1	Ø		N/A	SEP 15 2011

354867	OP No.	Due Date	Work Center	Operation	Setup	Unit Time	OP Time
	40	16Sep11	FASSY	FINAL ASSEMBLY	0.00	1.25	1.25

1 FINAL ASSEMBLY

REFERENCE AIRIGHT 40600 DRAWING CURRENT REVISION

.

INSTALL/INSPECT SAFETY WIRE
INSTALL/INSPECT INSPECTION TORQUE SEAL
SIGN AND STAMP OFF
ISSUE 8130

Good	Scrap	Oper.	Insp.	Date
1	Ø	[redacted]	N/A	9.15.11

354868	OP No.	Due Date	Work Center	Operation	Setup	Unit Time	OP Time
	50	16Sep11	OFINS	FINAL INSPECTION	0.00	0.10	0.10

1 CUSTOMER PART NUMBER: 40600-10

ALL WORK PERFORMED PER THIS SHOP ROUTER AND IAW AIRIGHT DRAWING NUMBER 40600, CURRENT REVISION

.

.

REPAIRMAN [redacted] DATE 9.13.11

.

.

INSPECTOR [redacted]

FAA REPAIR STATION NUMBER OU2R070L / JAA.5895

Good	Scrap	Oper.	Insp.	Date
1	Ø	[redacted]	N/A	9.13.11
1	Ø	N/A	[redacted]	SEP 19 2011

1. Approving National Aviation Authority / Country:	2. **AUTHORIZED RELEASE CERTIFICATE** FAA FORM 8130-3, AIRWORTHINESS APPROVAL TAG	3. Form Tracking Number:
FAA / United States		NDI-102950

4. Organization Name and Address:		5. Work Order, Contract, or Invoice Number:
Air Capital NDI 7ANR504B **424 W. 4th Ave., Belle Plaine, KS 67013**		631010

6. Item	7. Description	8. Part Number	9. Eligibility*	10. Quantity	11. Serial/Batch Number	12. Status/Work
1	Assembly	40600-10	N/A	1 ea.	120A	NDI Inspected

13. Remarks

Fluorescent Penetrant inspected per MIL-I-6866 (ASTM E 1417-05) and Magnetic Particle inspected per MIL-I-6868 (ASTM E 1444-05) accordingly for the following parts with no defects found:
40604-2 Piston (1), 40614-1 Ball Retainer (1), 40611-1 Rod End (1), 25720-2 Washer (1), 25720-3 Washer (1), 25719-4 Slide (1), 40601-3 Barrel (1), 40602-6 Housing (0), 40603-6 Gland End (0), 25716-1 Spring (1)

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

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:
NA	NA	[redacted]	7ANR504B
17. Name *(Typed or Printed)*:	18. Date(m/d/y):	22. Name *(Typed or Printed)*	23. Date (m/d/y):
NA	NA	Derik Yunker	Aug 29, 2011

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

FAA Form 8130-3 (06-01)

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 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.

The FAA Form 8130-3 and JAA Form One are equivalent. Other countries such as Canada also have equivalent acceptable documents.

HBX Aviation

PURCHASE REQUISITION FORM

Date: AUG 25 2011

Customer: Great Lakes Aviation

Shop Order: 631010

Assembly PN: 40600-10

Assembly SN: 120A

Cycles: N/A

#	Tech Initial	Part Number	Qty	Description	Lot Number / SN	Issued by	Date	RTS Initial
1	JK	40600-10	1	100% Seal Kit				
2		40610-2	1	lock nut - cracked				
3		40603-8	1	End cap - corrosion				
4		40605-3	1	Retainer - damage				
5		40602-~~6~~ 8	1	Housing - corrosion				
6		53-012-062-0560	1	Roll pin) for new parts				
7		DLGA2180010A	1	Plug				
8		40601-5	1	BARREL				
9		MS 21240-09-16	2	SEAL WSH				
10		40619.1	WASHER	(Slide lock meets specs for -12)				
11								
12								
13								
14								
15								

FUNCTIONAL TEST BULLETIN/40600

MAIN GEAR ACTUATOR: P/N'S: 40600-2,-4,-5,-6,-8,-10,-12 / TEST SPECFICATIONS FROM DRAWING 40600 REV. AC Dated: 8/10

PART# 40600- 10
SERIAL # 120A
W/O# 631010
DATE: SEP 15 2011

1. CYCLE ACTUATOR 25 TIMES AT 3000PSI NO BINDING/LEAKAGE ALLOWED.	PASS
2. CHECK/SET STROKE(6.23+/- .03)	6.24
3. CHECK FREE PLAY IN LOCK(.020 MAX)	PASS
4. SHUTTLE VALVE OPERATION(65 TO 105 PSI)	95 PSI
5. CHECK SHUTTLE LEAKAGE @ 650PSI 10 DPM MAX(-6,-8,-10,-12) @2000PSI 20 DPM MAX(-2,-4,-5)	PASS
6. APPLY 4500PSI PROOF PRESSURE	PASS
7. CHECK UNLOCK PRESSURE(200 TO 400PSI)	225 PSI
8. SET EXTENDED LENGTH(21.98 +/- .25)	21.98
9. SET RETRACTED LENGTH(15.75 +/- .25)	15.75
10. SET SWITCH(LOCK/UNLOCK)	PASS
11. DRAIN AND CAP ACTUATOR	✓

INSPECTOR/STAMP [redacted]

6780 476 6.304

6780 540 6.240

1. Approving National Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	R54914
4. Organization Name and Address: APPH WICHITA INC. 1445 SIERRA DRIVE WICHITA KS 67209 (OU2R070L)		5. Work Order/Contract/Invoice Number: 631010

6. Item:	7. Description:	8. Part Number:	9. Eligibility:*	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1	ACTUATOR ASSY	40600-12	N/A	1	120A	OVERHAULED

13. Remarks:

Customer Part Number 114-380041-21
Work Order 631010 detailing work performed is attached and on permanent file at APPH Wichita Inc.
Overhauled IAW 40600 Rev AC drawing dated August 2010.

"CERTIFIES THAT WORK SPECIFIED IN BLOCKS 12/13 WAS CARRIED OUT IN ACCORDANCE WITH EASA.145 AND WITH RESPECT TO THAT WORK THE AIRCRAFT COMPONENT IS CONSIDERED READY FOR RELEASE TO SERVICE UNDER EASA ACCEPTANCE CERTIFICATE NUMBER EASA 145.5895."

14. Certifies the items identified above were manufactured in conformity to:	19. ☒ 14 CFR 43.9 Return to Service ☒ Other regulation specified in Block 13	
☒ Approved design data and are in condition for safe operation. ☐ Non-approved design data 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: [redacted]	21. Approval/Certificate No.: OU2R070L / EASA.145.5895
17. Name (Typed or Printed): / 18. Date:	22. Name (Typed or Printed): JOSHUA BURDEN	23. Date (MMM/DD/YYYY): Sep. 19, 2011

User/Installer Responsibilities

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

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

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

GREAT LAKES AIRLINES
CERT. # GLAA031A

GREAT LAKES AVIATION, Ltd.

ATA 32-10

SERVICEABLE PARTS TAG

TASK CARD REQUIRED

Name MLG ACTUATOR
Date 26SEP11
WO# 631010/R54914
Insp. [redacted]

PN 114-380041-21
SN 120A TSO
O/H/Agency APPH WICHITA
Shelf Life N/A

☐ New ☒ O/H ☐ Repaired ☐ Bench ☐ Removed
Time. rem.
Ck. C 398650
Remarks: 31823.5

Installation Data
Date 03-15-2002
A/C 169GL
TAT 31818.9
Position LH
Log Page 096024
Mech [redacted]
OFF S/N 0316A

M2-5
114-380041-15

GREAT LAKES AVIATION, Ltd.
Aircraft Log

Form MM-10

Log No.: 046024	AIRCRAFT "N" No.: 169CL	DATE: 3-14-12

Maintenance Due	Engine Trend Check	Torque	LH:	RH:
TAT:	Flight No.:	Prop. RPM	LH:	RH:
Date:	IOAT:	N 1% (NH/NL)	LH:	RH:
	Press Alt.:	ITT/T6	LH:	RH:
	IAS:	Fuel Flow	LH:	RH:

Capt Emp #	FO Emp #	FA Emp #	Flt Code	Flt No.	From	To	Time Out	Time Off	Time On	Time In	Block Time	Hobbs	Starts 1	Starts 2	Oil 1	Oil 2	Oil APU

THIS AIRCRAFT IS APPROVED FOR RETURN TO SERVICE		
STATION:	DATE:	TIME:
SIGNATURE:	EMP #:	

Total Block		2730.7	← Ending
			← Beginning

FLT Code: C- Charter F- Ferry P - Position T- Training
CK - Check Ride M - Maintenance R- Revenue

1 CM/P Emp # 2861 STN: CYS TIME: 1850
Control # SCH MX Discrepancy:
FCD 61-00-00 Rev 3 Dmg R/H (HJ1290)

1 STN: CYS TIME: 2045 Date: 03-14-2012 RII: Yes ☐ No ☒
Corrective Action: Performed FCD 1900-61-00-00 ATA: 61
Rev 3 IAW given instructions. Found one debonded spot on #4 blade trailing edge between b/s 51.153. Spot measured 3/4" long TWAS mapped on FCD pg 5. No additional discrepancies noted.
Signature: [redacted] Emp #: [redacted]

2 CM/P Emp # 11581 STN: CYS TIME: 00.30
Control # 98994 Discrepancy: FD CCU BACKLIGHTING ID
INOP.

2 STN: CYS TIME: 0315 Date: 15MAR12 RII: Yes ☐ No ☒
Corrective Action: TRANSFERRED TO DML # 98994 ATA: 34
AS PER MEL # 33-2A ALL MX PROCEDURES C/W AS PER MARK OPERATIONS CAT D. PLACARDS INSTALLED.
Signature: [redacted] Emp #: [redacted]

3 CM/P Emp # 10397 STN: CYS TIME: 5:30
Control # SCH MX Discrepancy
L/H MLG Actuator Switch Bad

3 STN: CYS TIME: 0350 Date: 08-15-12 RII: Yes ☒ No ☐
Corrective Action: R&R L/H MLG actuator ATA: 32
IAW TC 1900-5230.10 Rev 1. P/N off 119-380091-15
P/N on: 119-380091-21 S/N off 0816A
S/N on 120A ops checks & R/S check good
Signature: [redacted] Emp #: [redacted]

4 CM/P Emp # 12978 STN: CYS TIME: 0550
Control # SCH MX Discrepancy: IP RIF TO A/C LOG
046024/3: RII REQUIRED FOR L/H MLG ACTUATOR R&R REF TC 1900-3230.10 REV 1

4 STN: CYS TIME: 0750 Date: 3-15-12 RII: Yes ☐ No ☒
Corrective Action: C/W RII FOR L/H MLG ACTUATOR R&R REF: TC 1900-3230.10 REV 1 & TC 4.3.7 SECTION 2.
ATA: 97
Signature: [redacted] Emp #: [redacted]

CORRECTED COPY

Revision 05/2009

MAIN LANDING GEAR ACTUATOR REMOVAL AND INSTALLATION

CARD: 1900-3230.10
REVISION: 1
REVISION DATE: 15 FEB 12

AIRCRAFT N#: 169GL	TAT: 31818.9	DATE: 3-15-12
LOGBOOK/MTX LOG REFERENCE #: 04602473		POSITION: LH
P/N OFF 114-38004-15	S/N OFF 0316A	
P/N ON 114-38004-15-21	S/N ON [redacted] 120A	

INSTRUCTIONS:	Fill in above information completely. The MECH/INSP sign-off blocks below must be signed or marked N/A, with employee's initials and employee number. Shaded blocks require no employee number or initials.
REFERENCE MATERIAL:	1900D MM 32-30-10
TOOLS REQUIRED:	N/A
PARTS REQUIRED:	N/A

NOTE: **While performing this Task Card, all discrepancies found must be recorded in either the Aircraft Logbook or on a Maintenance Log Sheet.**

TASK	MAIN GEAR ACTUATOR REMOVAL	MECH	INSP
1	Pull the stall warning circuit breaker and the 2-ampere control circuit breaker on the pilot's inboard subpanel. Place the airplane on jacks and remove gear pins. All tires must be clear of the ground. **Refer to 1900D MM 7-10-00.**	[redacted]	[redacted]
2	Disconnect the door actuating cams (7) from the doors (1) by removing the cotter pin (2), nut (3), bolt (4) and washer (5) from the upper end of the link assembly (6). Secure doors out of the way to provide better access to the gear assembly, if needed. **Refer to Fig. 3.**		
3	Disconnect the three hydraulic hoses (14) from the actuator (1), cap and identify each hose.		
4	Remove the nut (5), bolt (3) and washers (4) attaching the actuator rod to the upper drag leg arm (2).		
5	Disconnect the actuator down-position switch wiring at the receptacle plug located in the upper rear of the wheel well.		
6	**NOTE: Identify and note the position and thickness of all washers during removal to facilitate correct washer installation and maintain main gear alignment.** Remove the nuts (10), bolts (9), bushings (8) and washers (6 and 7) attaching the actuator (1) to the support structure. Remove the actuator (1) from the aircraft.		
7	If a different actuator is being installed, remove the hydraulic fittings (11 and 15) from the actuator. Immediately cap all open lines and fittings to prevent contamination.		

AIRCRAFT N#: 1696L | DATE: 03-15-2012

TASK	MAIN GEAR ACTUATOR INSTALLATION	MECH	INSP
8	Install new o-rings onto hydraulic fittings (11 and 15), install fittings onto actuator and tighten.	[redacted]	
9	Position the actuator in the wheel well and install the bushings (8), washers (6 and 7), bolts (9) and nuts (10) to secure the actuator (1) to the support structure. Install the same number of AN960-716L washers on each side of the actuator that were removed in step 6. Torque nut to 100 inch-pounds.		
10	Connect the hydraulic hoses (14) to the actuator (1).		
11	Connect the actuator down-position switch wiring to the plug located in the upper aft corner of the wheel well.		
12	With the actuator (1) fully retracted and the landing gear fully extended, check the alignment with the upper drag leg arm (2). The actuator rod end must slip into the upper drag arm without causing any side loads on the actuator piston rod.		RII [redacted]
13	Access landing gear service valve in LH inboard wing and pull up on valve. Connect an 18 PSI air supply to hydraulic pack.		
14	With the other 2 main landing gear pins installed, pull the landing gear control circuit breaker next to the handle, place the landing gear handle in the UP position, then use emergency landing gear hand pump to place the actuator (1) in the extended position.		
15	Manually push the landing gear to the retracted position and again check for any side loads on the actuator piston rod. If any misalignment is found in either position, shift the AN960-716L washers, as required to correct the misalignment. A minimum of one AN960-716L washer is required between the actuator (1) and the support structure.		RII [redacted]
16	With landing gear in the extended position, push the service valve in the down position, place landing gear handle in the down position and pump emergency landing gear handle until the actuator (1) is fully retracted.		
17	Check alignment of the actuator rod end with the attaching hole in the upper drag leg arm (2). If the holes do not align: a. Cut the safety wire and loosen the jam nut on the actuator rod end. b. Adjust the actuator rod end to align with the attaching hole. c. Tighten jam nut and install safety wire. With the holes aligned, lubricate bolt (1) with Molykote G-n and install with washers and nut. Torque nut to 290-410 inch-pounds.		RII [redacted]
18	Remove all gear pins and operate the landing gear through one cycle.		

AIRCRAFT N#: 1696L | DATE: 03-05-2012

TASK	MAIN GEAR ACTUATOR INSTALLATION (cont'd)	MECH	INSP
19	With the landing gear fully extended, apply moderate pressure to the drag brace assembly as shown in **Fig. 2** to bottom out end play in the actuator. Measure the amount of clearance between the upper drag leg and the rig plate. If a clearance of 0.001 and 0.010, at the closest point does not exist, loosen the jam nut and extend the rod end to the next keying position by rotating the actuator piston rod. Tighten the jam nut and install safety wire (MS20995C32) to key washer. Cycle the landing gear through one cycle and verify clearance.	[redacted]	RII
20	Retract the landing gear fully and measure the clearance between the landing gear piston and the main spar. If the clearance is not 2.28" +0.25/-0.09", remove the actuator from the aircraft and adjust the stroke as follows. a. Remove the safety wire and loosen the end cap jam nut. b. Rotate the end cap one full turn until proper clearance is achieved, each full turn of the actuator will change the stroke by 0.06 inch. c. After proper clearance is achieved, tighten the jam nut and install safety wire (MS20995C32) and reinstall the actuator. **NOTE: To ensure proper alignment of the hydraulic plumbing to the shuttle valve located in the end cap, the end cap must be rotated in 360° rotations only.** **CAUTION: IF MORE THAN TWO (2) COMPLETE ROTATIONS OF THE END CAP ARE REQUIRED TO OBTAIN PROPER STROKE ADJUSTMENT, STRUCTURAL DAMAGE IS INDICATED AND AIRPLANE STRUCTURE INSPECTION IS REQUIRED.**	[redacted]	RII
21	With all gear pins removed, supply 18 PSI head pressure and cycle the landing gear with the power pack to check for proper operation of the in-transit and gear-down lights.	[redacted]	RII [redacted]
22	Perform leak check of landing gear actuator (1).	[redacted]	[redacted]
[redacted]	**CAUTION: TO PREVENT SERIOUS DAMAGE TO THE PUMP, NEVER OPERATE THE POWER PACK WHEN THE ENGINES ARE NOT RUNNING WITHOUT SUPPLYING 18 PSI OF REGULATED DRY AIR TO THE MANUAL BLEED VALVE TO PRESSURIZE THE RESERVOIR. WHEN CYCLING THE LANDING GEAR WITH THE POWER PACK, DO NOT EXCEED THREE (3) CYCLES IN THE FIRST SIX (6) MINUTES OF OPERATION WITH APPROXIMATELY A TWO-MINUTE COOLING PERIOD BETWEEN CYCLES, THEN WITH A FIVE-MINUTE COOLING INTERVAL BETWEEN EACH CYCLE.**	[redacted]	
23	If disconnected in task 2, reconnect the door actuating cams (7) to the doors (1) by installing the bolt (4), washer (5), nut (3) and cotter pin (2) in the upper end of the link assembly (6). **Refer to Fig. 3.**	[redacted]	
24	Cycle the main landing gear with the power pack and inspect gear doors for proper fit and operation during the retraction cycle.	[redacted]	

AIRCRAFT N#: 1696L | DATE: 03-15-2012

TASK	MAIN GEAR ACTUATOR INSTALLATION (cont'd)	MECH	INSP
	WARNING: BEFORE REMOVING THE AIRPLANE FROM JACKS, MAKE SURE THE LANDING GEAR EMERGENCY EXTEND HAND PUMP HANDLE IS IN THE STOWED POSITION, THE PLUNGER ON THE SERVICE VALVE IS PUSHED DOWN WITH THE HINGED RETAINER IN PLACE, THE LANDING GEAR CONTROL HANDLE IS IN THE DOWN POSITION, THE LANDING GEAR IS DOWN AND LOCKED AND THE ACCUMULATOR IS CHARGED TO 800 +/- 50 PSI.		
25	Service hydraulic fluid reservoir as required.		
26	Remove air source, secure service valve and reinstall panel.		
27	Install gear pins. Remove the aircraft from the jacks and reset the stall warning circuit breaker and the 2-ampere control circuit breaker on the pilot's inboard subpanel.		
28	Remove gear pins or ensure a gear pins installed entry is made in the aircraft logbook.		

INSTALLATION OF LANDING GEAR ACTUATOR ASSEMBLY

CARD: 4.3.7
REVISION; 4
DATE: 15 OCT 11

Aircraft N#: 169GL	TAT: 31818.9	Date: 3-15-12
Logbook/Mtx Log Reference #: 046024/GMM03 3		Position: L/H
Instructions:	Fill in above information in applicable blocks. Insp. blocks, both initials and employee number are required. No action is required for shaded blocks.	

NOTE: **While performing this Task Card, all discrepancies found must be recorded in either the Aircraft Logbook or on a Maintenance Log Sheet.**

TASK	DESCRIPTION	RII
	The Inspector completing this inspection will ensure all maintenance is performed by qualified personnel, that correct part numbers are installed and that appropriate calibrated tooling and maintenance manual procedures and techniques are followed as per GMM, Ch. 16, 16.2.0,D.	
1	Physically verify S/N and part number of any components installed to ensure it matches the serviceable tag and that it is applicable to that aircraft.	
2	Inspect attach points for condition, wear and cracks.	
3	Inspect all removed and reinstalled clamps for security.	
4	Inspect all attach bolts for tightness and safeties.	
5	Inspect hydraulic lines for wear, condition, and proper tightness.	
6	Inspect actuator for proper alignment and rigging.	
7	Inspect gear doors for proper fit and operation during retraction cycle, and for proper tightness and safeties.	
8	Inspect actuator and hydraulic lines for leaks.	
9	Ensure sealant is applied. (EMB-120)	
10	Inspect for proper installation of all access panels.	
11	Perform an inspection of the work area and the surrounding areas for any other defects related or not related to the RII task at hand.	

Landing Gear Hydraulic Line Filter
Inspection/Cleaning

Task Card: 1900-1200
Revision: 1
Revision Date: 15 Jul 04

Aircraft N#: 169 GL	**TAT:** 32636.1	**Date:** 7-17-12
Man Hours: 2½		

Instructions: Fill in above information completely. In man hours block, fill in actual time to perform task.
In the mech/insp blocks: initials and employee number are required.
Shaded blocks—require no action or initials.

Manual reference: MM 5-20-02, MM 32-30-00
Oil to be used: MIL 5606
Parts required: 3 ea. 20666-6-10 In-line filter

Tools required: Aircraft jacks

Task Number	Task Description	Mech	Insp
1	Place jacks under aircraft jack locations and lift aircraft off of ground until all wheels are clear of the floor.	[redacted]	[redacted]
2	Remove all electrical power and disconnect battery. Tag cockpit with safety indicating gear work in progress.		
3	Gain access to the nose gear hydraulic line filter. Refer to figure 1, item A. Remove filter. Clean or replace. Tag filter for cleaning if replaced.		
4	Install filter in nose gear hydraulic line.		
5	Gain access to left main landing gear hydraulic line filter. Refer to figure 1, item B. Remove filter. Clean or replace. Tag filter for cleaning if replaced.		
6	Install filter in left main landing gear hydraulic line.		
7	Gain access to right main landing gear hydraulic line filter. Refer to figure 1, item C. Remove filter. Clean or replace. Tag filter for cleaning if replaced.		
8	Install filter in right main landing gear hydraulic line.		
9	Connect battery, remove warning tag from cockpit.		
10	Apply external power to aircraft and perform landing gear retraction and extension check. Perform leak check of nose, left and right landing gear hydraulic line filters during the test.		[redacted]
11	Ensure all landing gear are down and locked (3 green indicator lights illuminated). Lower aircraft from jacks.		[redacted]

GREAT LAKES AVIATION, Ltd.
Aircraft Log

Form MM-10

Log No.: 085794 | AIRCRAFT "N" No.: 169 | DATE: 7/4/13

Maintenance Due	Engine Trend Check	Torque	LH:	RH:
TAT:	Flight No.:	Prop. RPM	LH:	RH:
Date:	IOAT:	N 1% (NH/NL)	LH:	RH:
	Press Alt.:	ITT/T6	LH:	RH:
	IAS:	Fuel Flow	LH:	RH:

Capt Emp #	FO Emp #	FA Emp #	Flt Code	Flt No.	From	To	Time Out	Time Off	Time On	Time In	Block Time	Hobbs	Starts 1	Starts 2	Oil 1	Oil 2	Oil APU

MX only

THIS AIRCRAFT IS APPROVED FOR RETURN TO SERVICE

STATION: | DATE: | TIME:

SIGNATURE: | EMP #:

Total Block | ← Ending | ← Beginning

FLT Code: C- Charter F- Ferry P - Position T- Training
CK - Check Ride M - Maintenance R- Revenue

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1 | M / P | Emp # | STN: | TIME:

Control # | Discrepancy:

X

1 | STN: Cont from Block | TIME: | Date: Pg 0 95793 | RII: Yes ☐ No ☒

Corrective Action: no defects noted @ this Time | ATA: 24

Signature: [redacted] | Emp #: [redacted]

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2 | M / P | Emp # 1310 | STN: DEN | TIME: 2036

Control # 119679 | Discrepancy: Upon T/O landing handle was moved to Up Position, ~~No Intransit Light Came~~ No Intransit Light Came on. Gear Did not move & Green Deployed Annunciator Remained Illuminated.

2 | STN: Ocn | TIME: 21:43 | Date 7/4/13 | RII: Yes ☐ No ☒

Corrective Action: Found micro switch @ service valve Sticking Cleaned Switch & inspected wires Ref AIM 1420 no defects noted performed landing gear Retraction multiple Times ops ✓ Ref AIM 10-32-01 no defects noted @ this Time | ATA: 27 32

Signature: [redacted] | Emp #: [redacted]

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3 | M / P | Emp # | STN: | TIME:

Control # | Discrepancy

3 | STN: | TIME: | Date | RII: Yes ☐ No ☐

Corrective Action: | ATA:

Signature: | Emp #:

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4 | M / P | Emp # | STN: | TIME:

Control # | Discrepancy:

4 | STN: | TIME: | Date | RII: Yes ☐ No ☐

Corrective Action: | ATA:

Signature: | Emp #:

GREAT LAKES AVIATION, Ltd.

Aircraft Log

Form MM-10

Log No.: 085795	AIRCRAFT "N" No.: 1696L	DATE: 7-5-13

Maintenance Due	Engine Trend Check		Torque	LH: 2450	RH: 242
TAT:	Flight No.:	7316	Prop. RPM	LH: 1550	RH: 1550
Date:	IOAT:	-8°C	N 1% (NH/NL)	LH: 95.0	RH: 93.5
	Press Alt.:	23000	ITT/T6	LH: 700	RH: 680
	IAS:	178	Fuel Flow	LH: 330	RH: 350

Capt Emp #	FO Emp #	FA Emp #	Flt Code	Flt No.	From	To	Time Out	Time Off	Time On	Time In	Block Time	Hobbs	Starts 1	Starts 2	Oil 1	Oil 2	Oil APU
13101	12310	—	R	7316	DEN	PIR	09 18	09 32	10 56	11 02	1.04	5760.6	1	1	0	0	—
13103	14054	—	R	7316	PIR	HON	1117	1122	1145	1150	.33	5761.0	1	1			
13103	14054	—	R	7316	HON	MSP	1155	1201	1302	1309	.74	5762.1	1	0			
13491	13934	—	R	7289	MSP	MSP	2040	2045	2104	2108	.28	5762.9	1	1			
												5.2					

THIS AIRCRAFT IS APPROVED FOR RETURN TO SERVICE			Total Block	2.97	5762.9	← Ending
STATION:	DATE:	TIME:			5759.2	← Beginning
SIGNATURE:	EMP #:		FLT Code: C- Charter F- Ferry P - Position T- Training CK - Check Ride M - Maintenance R- Revenue			

1	M/P	Emp # 11669	STN: DEN	TIME: 530
Control # Sch mx	Discrepancy:			
mx Ron check				

1	STN: DEN	TIME: 615	Date 7-5-13	RII: Yes ☐ No ☒
Corrective Action:			ATA: 12	
c/w Daily 1900 ex Remain over Night checks, Ref Aim Task card 1900-Ron				
Signature: [redacted]			Emp #: [redacted]	

2	M/P	Emp # 13103	STN: MSP	TIME: 1409
Control # 119697	Discrepancy: upon T/O Landing handle was moved to UP position no Intransit light came on, Gear did not move, ALL 3 green annunciator remained Illuminated			

2	STN: MSP	TIME: 2062	Date 7-5-13	RII: Yes ☐ No ☒
Corrective Action: T/S system Confirmed Good Power and continuity on SERVICE VALVE micro switch, inspected wires from micro switch for chafeing None Found, SLAVED in and checked for Power at GEAR handle			ATA: 32	
Signature: continue on Item 4			Emp #:	

3	M/P	Emp # 10249	STN: MSP	TIME: 1510
Control # Sch MX	Discrepancy: LH C exit removed from			

3	STN: MSP	TIME: 1830	Date 7/5/13	RII: Yes ☐ No ☒
Corrective Action: Re installed 4C exit Pan 52-20100. lights check good.			ATA: 52	
Signature: [redacted]			Emp #: [redacted]	

4	M/P	Emp #	STN:	TIME:
Control #	Discrepancy:			

4	STN:	TIME:	Date	RII: Yes ☐ No ☒
Corrective Action: Continued From Item 2 Confirmed good Power GEAR Handle did not FIX, CHECKED POWER TO PCB A316, REPLACED, ALSO VERIFIED POWER TO P/U squat switch, JACKED and [redacted] PREFORMED GEAR SWING SEVERAL TIMES			ATA: 32	
Signature: Continue on log Page 085796 Item 1			Emp #:	

Revision 05/2009

GREAT LAKES AVIATION, Ltd.

Aircraft Log

Form MM-10

Log No.: 085796	AIRCRAFT "N" No.: 169GL	DATE: 7/5/13

Maintenance Due	Engine Trend Check	Torque	LH:	RH:
TAT:	Flight No.:	Prop. RPM	LH:	RH:
Date:	IOAT:	N 1% (NH/NL)	LH:	RH:
	Press Alt.:	ITT/T6	LH:	RH:
	IAS:	Fuel Flow	LH:	RH:

Capt Emp #	FO Emp #	FA Emp #	Flt Code	Flt No.	From	To	Time Out	Time Off	Time On	Time In	Block Time	Hobbs	Starts 1	Starts 2	Oil 1	Oil 2	Oil APU

MX CONA

THIS AIRCRAFT IS APPROVED FOR RETURN TO SERVICE			Total Block		← Ending
STATION:	DATE:	TIME:			← Beginning
SIGNATURE:	EMP #:		FLT Code: C- Charter F- Ferry P - Position T- Training CK - Check Ride M - Maintenance R- Revenue		

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1 M P | Emp # 13842 | STN: MSP | TIME: 1958

Control # SCH MX | Discrepancy: REF log PAGE 085795 ITEM 2

X

4 | STN: MSP | TIME: 20:00 | Date 7-5-13 | RII: Yes ☐ No ☒

Corrective Action: I/A/W ~~AIM~~ AIM MX | ATA: 32

32-01 OPS CHECK NORMAL EVERY TIME, CLEANED CANNON PLUG ON PRESSURE SWITCH AND ON MICRO SWITCH ON SERVICE VALVE,

Signature: [redacted] | Emp #: [redacted]

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2 M P | Emp # 13411 | STN: MSP | TIME: 2115

Control # 119714 | Discrepancy: UPON T/O LANDING GEAR HANDLE WAS MOVED TO UP POSITION + GEAR DID NOT RETRACT GREEN ANNUNCIATORS REMAINED ILLUMINATED.

X

2 | STN: MSP | TIME: 14:30 | Date 7-6-13 | RII: Yes ☒ No ☐

Corrective Action: T/S SYSTEM TO R/H SQUAT SAFETY SWITCH, ADJUSTED AND CHECKED RIGGING I/A/W AIM TC 1900-3260.05 ITEMS 7-17 AND 23-26 OPS CHECK GOOD RII INSPECTION REQUIRED

ATA: 32

Signature: [redacted] | Emp #: [redacted]

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3 M P | Emp # 13842 | STN: MSP | TIME: 1431

Control # SCH MX | Discrepancy: RII INSPECTION REQUIRED FOR R/H SAFETY SWITCH RIGGING

Y

3 | STN: MSP | TIME: 14:32 | Date 7-6-13 | RII: Yes ☐ No ☒

Corrective Action: C/W RII INSPECTION I/A/W AIM TC 1900-3260.05 ITEMS 7-17 AND 23

ATA: 32

Signature: [redacted] | Emp #: [redacted]

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4 M P | Emp # 13842 | STN: MSP | TIME: 1436

Control # 119739 | Discrepancy: ~~OPS~~ RII OPS CHECK FLIGHT REQUIRED DUE TO LANDING GEAR MAINTENANCE

X

4 | STN: MSP | TIME: 1745 | Date 7/6/13 | RII: Yes ☐ No ☒

Corrective Action: OPS CHECK FLIGHT SATISFACTORY.

ATA: 32

~~ATA CODE 32~~

Signature: [redacted] | Emp #: [redacted]

MAIN GEAR SAFETY SWITCH and DOWN POSITION SWITCH R & R

CARD: 1900-3260.05
REVISION: 1
REVISION DATE: 25 APR 11

Aircraft N#: 169GL	TAT: 34851.2	Date: 7-6-13
Logbook/Mtx Log Reference #: 085796		Position: R/H

INSTRUCTIONS:	Fill in above information in applicable blocks. For MECH/INSP blocks, both initials and employee number are required. No action is required for shaded blocks.
REFERENCE MATERIAL:	Beech MM 32-60-05, MM 32-60-02, WM 91-15-01, WM 91-14-01, WM 32-61-01, WM 32-61-02
TOOLS REQUIRED:	N/A
PARTS REQUIRED:	N/A

NOTE: **While performing this Task Card, all discrepancies found must be recorded in either the Aircraft Logbook or on a Maintenance Log Sheet.**

TASK	DESCRIPTION	MECH	INSP
NOTE:	**MLG Down Position and Safety Switch will be replaced as an entire harness assembly. The landing gear break out box must be utilized. The unserviceable harness will be returned to the Parts Department.**		
	Removal of Safety Switch and Down Position Switch (Ref. Figure 1)		
1	Place aircraft on jacks. All tires must be clear of the floor.	[redacted]	
2	Remove the safety switch actuator rod (1) from the attaching bracket on the upper torque knee, and then remove the retaining nut (2).		
3	Remove nut (6) from switch (7).		
4	Use a gear-type puller (obtain locally) to remove the switch arm (3) from the switch shaft to prevent damage to the internal mechanism of the switch.		
5	Remove down position actuator pin from drag brace. Remove safety wire from down position switch jam nuts, then remove lower jam nut and remove switch.		
6	Remove adel clamps securing down position harness, upper strut bracket and oil vent line. Disconnect canon plug.		
	Installation and Rigging of Safety Switch (Ref. Figure 1)		
7	Install Switch (7) ensure that positioning prong is in the aliment hole on the back of the main gear assembly. Then install nut (6) and safety.	[redacted]	
8	Jack the landing gear so the shock strut is compressed to .50 inch from the fully extended position.		
NOTE:	Test box lights indicate Red: in air, Green: on ground for safety switch. Red: not locked, Green: locked for down lock switch.		
9	Connect the test box to the wiring plug A107P1 (LH) A108P1(RH).	[redacted]	
10	Rotate the switch shaft clockwise until test box red lights illuminate.		[redacted]

Aircraft N#:	1896L	Date:	7-6-13

TASK	DESCRIPTION	MECH	INSP
11	Remove the safety wire from the lock screw (4) on the switch arm (3) and back off the lock screw.		
12	Install the switch arm (3) on the switch shaft in a position that is parallel to the upper torque knee and adjust the actuating rod (1) to align with the attaching bracket on the torque knee. Install the actuation rod connecting bolt.		
13	Position the shock strut so that it is 2 inches from the fully extended position, and adjust the switch shaft at the adjusting screw (5) until the test box green lights illuminate and the red lights extinguish.		
14	When satisfactory adjustment is reached, tighten the lock screw (4) and retaining nut (2).		
NOTE:	Before safety wiring the lock screw (4) to the switch arm, recheck the safety switch rigging as follows:		
15	Compress the strut. The green lights of the test box will illuminate and the red lights will extinguish when the shock strut reaches a position 0.38 to 2 inches from the fully extended position. The green test lights will remain illuminated indicating the open circuit as shock strut is fully compressed.		
16	As the shock strut is extended from the fully compressed position, the green test lights will remain illuminated until the shock strut reaches a position 0.38 to 0.62 inch from the fully extended position. At this point, the red test lights will illuminate and the green test lights will extinguish up to and including the fully extended position.		
17	Safety wire the lock screw (4) to the switch arm. Ensure cotter key is installed on actuation rod connection bolt.		
	Installation and Rigging of Down Position Switch		
18	Install down position switch into down position plate, ensuring that lock tab engages plate and temporarily install actuating pin.		
19	Adjust switch until green light illuminates on test box adjust the switch an additional 2 turns beyond the actuation point. Remove actuating pin.		
20	Tighten jam nuts then safety wire jam nuts and attach harness to drag brace with adel clamps.		
NOTE:	Avoid excessive bottoming out of the switch		
21	Install and safety down position switch actuating pin.		
22	Disconnect test box from switches' wiring and reinstall switches', wiring and adel clamps securing down position harness to the upper strut bracket and oil vent line.		

Aircraft N#:	1696L	Date:	7-6-13

TASK	DESCRIPTION	MECH	INSP
	Final Steps		
23	Perform gear extension and retraction. Check for proper operation of the landing gear downlock lights on the pilot's inboard subpanel and the landing gear warning horn.	[redacted]	[redacted]
24	Remove forward top cowling of either LH or RH engine, verify that low pitch solenoids are in the de-energized position.		
25	Take airplane off of jacks.		
26	Verify that low pitch solenoids are in the energized position, reinstall top forward cowling.		

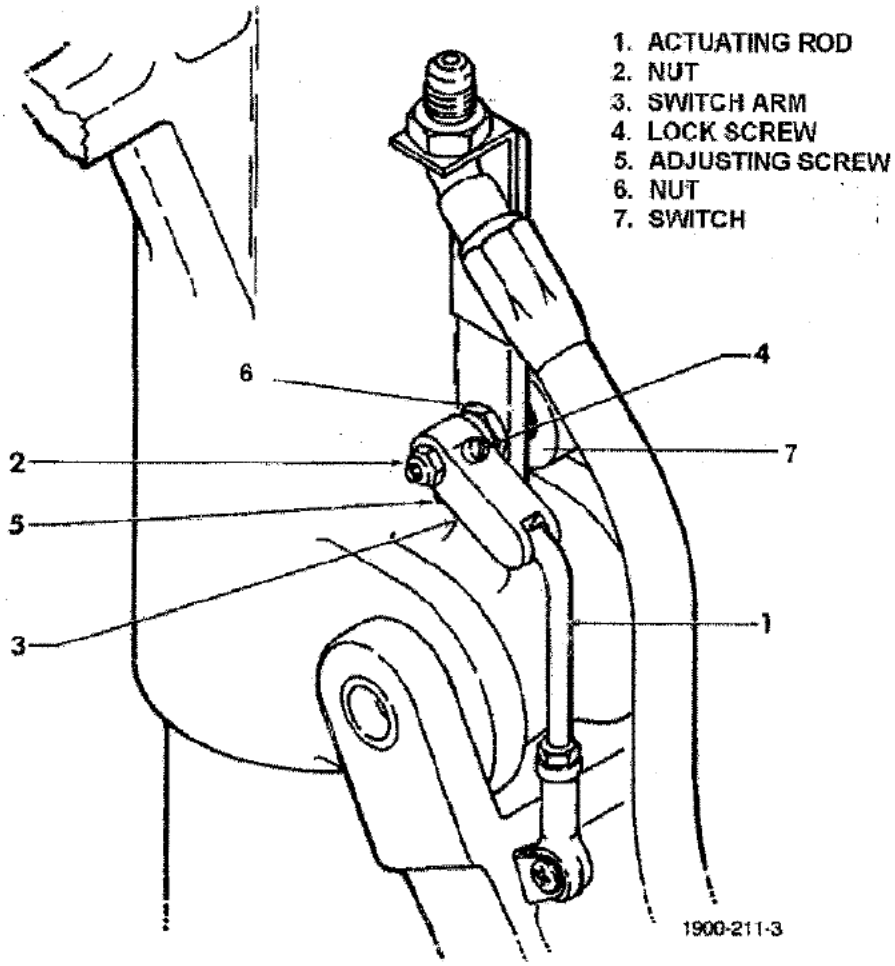

Figure 1