

Maintenance Group Chairman Factual Report

Attachment 9 - Helicopter Services of Nevada Work Order, M-518

WPR10FA371

HELICOPTER SERVICES OF NEVADA, LLC

1411 Airport Rd. Boulder City Airport, Nevada

PH. 702-953-8809 FX. 702-968-8639 FAA CRS KBMR477F

WORKORDER # M-518

DATE OPENED	26-Jul-10
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DATE CLOSED	July 27 10
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COMPANY	AIR METHODS
CONTACT	
PHONE	
PHONE	

MAKE/MODEL
SERIAL NUMBER
AC TOTAL TIME
RIN'S
HOBBS

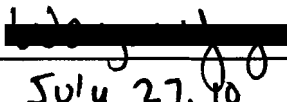
N/A

Cust PO
REGISTRATION: N581AM
ENG. S/N
ENG T. TIME
ENG NG CYC
ENG NP CYC

VERBAL
-23266- wj
46268

ITEM#	INSPECTION AND/OR REPAIRS TO BE COMPLETED	OPENED BY
1	INJECTION MANIFOLD CHANGE	W YOUNG

I CERTIFY THAT THE WORK PERFORMED ABOVE WAS ACCOMPLISHED IN ACCORDANCE WITH CURRENT FAA AIRWORTHINESS REGULATIONS AND IN RESPECT TO THE WORK PERFORMED, THE AIRCRAFT OR COMPONENT(S) IS RETURNED TO SERVICE.

NAME	W YOUNG	SIG		FAA CRS KBMR477F
TITLE	INSPECTOR	DATE	July 27, 10	

STATEMENT: FOR ANY FACTORY NEW (FN) PARTS INSTALLED ON THIS WORK ORDER; PARTS IDENTIFIED ABOVE WERE OBTAINED FROM THE MANUFACTURER AND MEET REQUIREMENTS OF FAA PART 21 PRODUCTION CERTIFICATE 100. ALL SERVICES PERFORMED ARE REQUIRED TO CONFORM TO THE MANUFACTURER APPROVED STANDARDS AND CURRENT MANUFACTURER PUBLICATIONS AND FAA REQUIREMENTS.

STATEMENT: FOR ANY FAA APPROVED NON MANUFACTURER SUPPLIED PARTS USED ON THIS WORK ORDER (SV),(OH),(NS), : PARTS IDENTIFIED ARE FAA APPROVED BUT MAY NOT HAVE BEEN PRODUCED UNDER THE MANUFACTURER'S FAA PRODUCTION CERTIFICATE AND HAVE NOT BEEN SUBJECTED TO THE MANUFACTURER'S PROCESS CONTROLS AND/OR TYPE INSPECTIONS. THE MANUFACTURER DOES NOT WARRANT THESE PARTS AND THE USE OF PARTS MAY NEGATE THE MANUFACTURER'S WARRANTY.

I, THE CUSTOMER HEREBY AUTHORIZE THE ABOVE WORK TO BE PERFORMED AND UNDERSTAND HSN IS NOT RESPONSIBLE FOR LOSS OR DAMAGE TO AIRCRAFT OR ARTICLES IN CASE OF FIRE, THEFT OR ANY OTHER CAUSE BEYOND HSN'S CONTROL. AN EXPRESS MECHANICS LIEN IS ALSO ACKNOWLEDGED ON THE ABOVE AIRCRAFT OR COMPONENT TO SECURE THE AMOUNT OF REPAIRS THERETO.

CUSTOMER APPROVAL SIGNATURE: _____

HELICOPTER SERVICES OF NEVADA WORK ORDER

<u>CUSTOMER</u> AIR METHODS	<u>SERIAL NUMBER</u> 46268	<u>WO NUMBER</u> M-547 M-518
<u>COMPONENT</u>	<u>ENGINE SERIAL #</u>	<u>AIRCRAFT TOTAL TIME</u> <u>ENGINE TOTAL TIME</u>

<p>1 DISCREPANCY/TASK DATE: 7.24.10 Preliminary Inspection.</p>	<p>CORRECTIVE ACTION/WORK COMPLETED DATE: 7.24.10 Preliminary evaluation and investigation. Axial Compressor is rough to turn.</p> <p>SIG: [Redacted] FAA CRS KBMR477F</p>
<p>2 DISCREPANCY/TASK DATE: 7.24.10 Investigate fuel manifold coking. Engine will not turn.</p>	<p>CORRECTIVE ACTION/WORK COMPLETED DATE: 7.24.10 Disassembled engine 46268 to access no 3 s/n 9853. Removed fuel manifold p/n 0292217030 s/n ANR 2451 and installed 0292217030 s/n 861B. Referencing MTI No X 292.M13032 update no.4 Jan 30, 2008.</p> <p>SIG: [Redacted] FAA CRS KBMR477F</p>
<p>3 DISCREPANCY/TASK DATE: 7.24.10 Post Maintenance Inspections.</p>	<p>CORRECTIVE ACTION/WORK COMPLETED DATE: 7.25.10 Reassembled engine 46268 referencing Arriel 2B1 M.M. X 292 N5 4502. revision 19 March 30, 2009. Ground runs, oil pressure vibration and leak check flight were all acceptable.</p> <p>SIG: [Redacted] FAA CRS KBMR477F</p>
<p>4 DISCREPANCY/TASK DATE:</p>	<p>CORRECTIVE ACTION/WORK COMPLETED DATE:</p> <p>SIG: [Redacted] FAA CRS KBMR477F</p>
<p>5 DISCREPANCY/TASK DATE:</p>	<p>CORRECTIVE ACTION/WORK COMPLETED DATE:</p> <p>SIG: [Redacted] FAA CRS KBMR477F</p>
<p>6 DISCREPANCY/TASK DATE:</p>	<p>CORRECTIVE ACTION/WORK COMPLETED DATE:</p> <p>SIG: [Redacted] FAA CRS KBMR477F</p>

HELICOPTER SERVICES OF NEVADA

PARTS REQUEST SHEET

CUSTOMER: AIR METHODS

WORK ORDER: M-518

QTY	PART NUMBER	DESCRIPTION	LOC	SERIAL NUMBER	ISSUED
1	0292217030X	MANIFOLD			
1	AR2TECKIT3	SHIP KIT			

REQUESTED BY: [Signature]

APPROVED BY: [Signature]

COMPLETED BY: _____

DATE ISSUED: _____

Site – TSC/ext	Year	Field Rep ID	FTEC/TSC Time
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TECHNICAL MAINTENANCE REPORT

LEVEL			
1	<input type="checkbox"/>	2	<input type="checkbox"/>
		3	<input checked="" type="checkbox"/>

NAME of operator Air Methods

Maintenance date from 07/25/2010 to 07/27/2010

TYPE OF ENGINE / VARIANT 2B1

Maintenance on

- Engine Serial no. 23366
- (*) Module Designation 70BMO32020 Serial no. 2007
- Module Designation Serial no.
- Accessory Designation

Airframe / Variant AS350B3	No. unknown
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Customer Air Methods
Name of technical contact Jeff Carey
Maintenance carried out at Marana, AZ
Tel.
Country USA

Reference documentation and issue number: MTI X292M13082 Revision no4 Jan 30 2008 and Arriel 2B1 MTI Maintenance manual X292N54502 Revision 19 march 30 2009.

Reason for removal code:
Reason for removal description: Suspected fuel coking at injection manifold
Purpose of maintenance: To investigate reason of engine not rotating freely and repair as needed.

(*) put a cross in the relevant box(es).

Site - TSC/ext	Year	Field Rep ID	FTEC/TSC Time
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TECHNICAL MAINTENANCE REPORT

Comments concerning work carried out:
<p><u>Preliminary findings:</u></p> <p>Axial compressor is real hard to turn.</p>
<p><u>Findings at disassembly:</u></p> <p>Removal of module 3 from engine and after disassembly of the module 3 I found that the injection manifold had signs of fuel carbon in the labyrinth and injection wheel port.</p>
<p><u>Work carried out:</u></p> <p>Removed and replaced injection manifold referencing the Arriel 2B1 Maintenance Technical Instruction X292M13032 no 4 Jan 30 2008. Removed injection manifold p/n 0292217030 s/n ANR2451 and installed 0292217030 s/n 861B. Reassembled engine 46268 referencing Arriel 2B1 Maintenance Manual no X292N54502 revision no19 march 30 2009. Engine rotates freely.</p>
<p><u>Test results:</u></p> <p>Ground run and test flight were all acceptable. vibration check and oil pressure check were good..</p>

Site – TSC/ext	Year	Field Rep ID	FTEC/TSC Time
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TECHNICAL MAINTENANCE REPORT

Engine position (*)	Serial no.	TSN Total hrs	TSO Hrs since overhaul	CSN Gas generator cycles since new	CSO Gas generator cycles since overhaul
single	23366	1653	n/a	2535.22	n/a

(*) Specify the position of the engine (right, left, single engine)

BEFORE MAINTENANCE

MODULAR COMPOSITION						
Designation	Part Number	Serial no.	Hrs since new	Hrs since overhaul	Gas generator cycles since overhaul	PT cycles since overhaul
M 01	70BMO12010	01969	N/A	N/A	N/A	N/A
M 02	70BMO22010	1988	N/A	N/A	N/A	N/A
M 03	70BMO32020	2007	N/A	N/A	N/A	N/A
M 04	70BMO41720	1978	N/A	N/A	N/A	N/A
M 05	70BMO52000	01968	N/A	N/A	N/A	N/A
(*)		N/A	N/A	N/A	N/A	N/A
(*)		MODULE	TIMES	UNKNOWN	N/A	N/A
(*)		CUSTOMER	DOES NOT	HAVE	ENGINE LOGS	AVAILABLE

AFTER MAINTENANCE

IF MODULE REPLACEMENT (module replaced and/or life-limited part)						
Designation	Part Number	Serial no.	Hrs since new	Hrs since overhaul	Gas generator cycles since overhaul	PT cycles since overhaul
M 01						
M 02						
M 03	SAME	AS	ABOVE			
M 04						
M 05						
(*)						
(*)						
(*)						

Site – TSC/ext	Year	Field Rep ID	FTEC/TSC Time
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(*) Line reserved for life-limited parts.

Site – TSC/ext	Year	Field Rep ID	FTEC/TSC Time
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TECHNICAL MAINTENANCE REPORT

- If replacement of accessories and/or parts

Description		Part Number	Serial no.	Operating hrs	Reasons for removal
INJECTION MANIFOLD	Installation	0292217030	1956B	TSO 0.0	N/A
INJECTION MANIFOLD	Removal	0292217030	ANR544SO	1653	FUEL COKING
	Installation				
	Removal				
	Installation				
	Removal				
	Installation				
	Removal				
	Installation				
	Removal				

INCORPORATION OF MODIFICATIONS - SL - SB

TU	N/A								
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Service Letter / Service Bulletin

I certify that the engine, module, accessory identified in this technical maintenance report has been checked in accordance with the reference documentation.

Name of operator	Date	Signature	Stamp
WAYNE YOUNG	07-25-2010		
Name of Company	Authorization Card no.		Expiry date
HELICOPTER SERVICES OF NEVADA	200100907		FEB 11 2016

Copies of the following documents must be attached to this report:

- Release certificate (EASA Form1, FAA Form1, statement of conformity or other)
- Test realization request (ENR0495)

The TECHNICAL MAINTENANCE REPORT shall be sent to your TM technical correspondent within 8 days of completion of maintenance work.

1. Approving National Aviation Authority / Country FAA / UNITED STATES	2. AUTHORIZED RELEASE CERTIFICATE FAA FORM 8130-3, AIRWORTHINESS APPROVAL TAG	3. Form Tracking Number : W.O. : R10062318000 CUSTOMER : TURBOMECA USA
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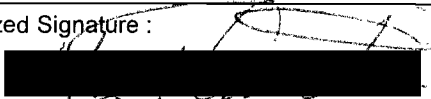
4. Organization Name and Address : Propulsion Technologies International, LLC 15301 SW 29th Street Miramar, FL 33027 USA #XZ4R084M	 Propulsion Technologies International <small>A Tenneco and Allison company</small>	5. Work Order / Contract / Invoice Number: MU40980 No. Attachments 1 EA
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6. Item	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial / Batch Number:	12. Status/Work:
1	FUEL INJECTION MANIFOLD	0292217030	N/A	1	1956B	REPAIRED

13. Remarks
 Inspections : Per ATA 72-43-20 (Overhaul Criteria)
 Repairs : RP-01-150/RP-01, and RP-01-150/RP-02.

Per : TURBOMECA ARRIEL2 Engine Manual No. X 292 M1 500 2, Reference 72-43-20 Revision 29, Dated 11/30/09
 Notes : Records Of Work Performed Are On File At Propulsion Technologies International.

This certifies that the work specified in Block 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.145.4791

14. Certifies the items identified above were manufactured in conformity to: <input type="checkbox"/> Approved design data and are in a condition for safe operation. <input checked="" type="checkbox"/> Non-approved design data specified in Block 13.	19. <input checked="" type="checkbox"/> FAR 43.9 Return to Service <input checked="" type="checkbox"/> 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. #XZ4R084M	20. Authorized Signature :  PTI 1351	21. Approval / Certificate No : #XZ4R084M
17. Name (Typed or Printed)	18. Date (m/d/y) Jul / 13 / 2010	22. Name (Typed or Printed) : MAURY CARDONA		23. Date (m/d/y): Jul / 13 / 2010

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 any aircraft may be flown.

Arriel 2 Fuel Injection Manifold Flow Calculator		
1956B		
	Limit	Limits
	320 ml/30 sec - 361 ml/30 sec for Q Average	93 - 107
Container	Q each	H = Q each / Q average
1	350	1.04
2	325	0.97
3	325	0.97
4	340	1.01
5	335	1.00
6	335	1.00
*Q Total	2010	
Q Average	335.0	
*Total Q limits are: 1920ml/30 sec. Min. and 2166 ml/30sec. Max.		
Q is calculated after 30 seconds of flow into the beaker		

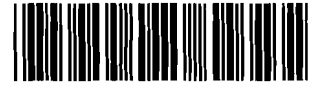
Instructions: Input individual flows in yellow cells

Inspected by: Maury Cardona

13-Jul-10

ATTACHMENT #: 1

PICK LIST



PICK LIST 194347

SHIP TO	HELICOPTER SERVICES NEVADA C/O AIR METHODS COUNTER TO COUNTER TUSCON AZ US	03	Contact: WAYNE YOUNG [REDACTED]	PAGE	1
	COMMENTS	STANDARD EXCHANGE FOR DOMESTIC USE CORE DUE 8/9/10 AA	AOG		ORDER
		DATE/TIME			7/24/10 13:10:25
		SALES REP			AAVERILL
		SHIPPING PAID BY			CUSTOMER
			ACCT #		PP&ADD

CUST NO.	CUSTOMER NAME	CUST PO	SHIP VIA	WH
10337470	HELICOPTER SERVICES OF NEVADA,	A/C 4311	COUNTER 24-JUL-10 5PM	03

ITEM NO.	DESCRIPTION	LINE	ITEM	QUANTITY	U/M
AR2TECKIT3 ✓	ARRIEL 2 MODULE 2/3 INSTALL KT	200		1.000	EA
Available	Location 104A01	Batch/Lot 1007230139	FIFO date 7/23/10	Quantity 3.000	Picked qty
				Total picked . . .	/
0292217030X ✓	INJECTION MANIFOLD	100		1.000	EA
Available	Location 116G02	Batch/Lot 1007200108	FIFO date 7/20/10	Quantity 1.000	Picked qty
Serial Number(s)	1956B				/
Serial Number(s)	119A05	1007060023	7/06/10	1.000	
Serial Number(s)	861B				
Serial Number(s)	120D05	1007210035	7/21/10	1.000	
Serial Number(s)	1520B				
Serial Number(s)	300A02	1007200053	7/20/10	1.000	
Serial Number(s)	349SO				
				Total picked . . .	/

** END OF REPORT **

Pulled by: [REDACTED] Verified by: [REDACTED]

Pack by: [REDACTED] Ship by: [REDACTED]

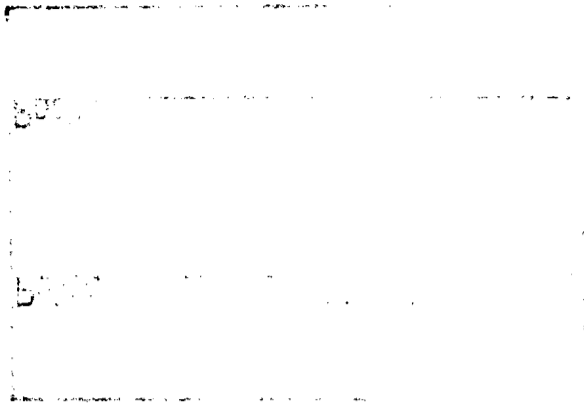
All items detailed above are certified to have been tested, inspected, and declared airworthy in accordance with current standards and regulations. Items with part numbers containing an "X", "Y", or "Z" suffix have been inspected/repaired/overhauled and will be accompanied by additional certification. All other parts represent new parts.

Goods are being sold in accordance with Turbomeca Sales Terms and Conditions as provided for in the Turbomeca Price Catalog. Buyer's Purchase Terms and Conditions are hereby rejected in full by Turbomeca. If seal on bag is broken, item cannot be returned for credit.

Turbomeca USA, Inc.
1 Drive
Arling, TX 75052

ORIGINAL

Tel : 972.606.7600
Fax : 972.606.7692
www.turbomeca-usa.com



979666

815.W

Age
22

Moteur Engine
ARRIEL 2B1 N° 23366

UTILISATION, ENTRETIEN, REVISION - OPERATION, MAINTENANCE OVERHAUL

Date	FONCTIONNEMENT MOTEUR : ENGINE RUN HOUR										Observations - Travaux effectués - Signature Observations - Works carried out - Signature	
	Journalier Daily			Total depuis neuf Total since new			Total depuis état de disp. Total since stat. of life			Calculateur EECU		
	H	Cycles		H	Cycles		H	Cycles		Cycles		
		GEN.	T.L. P.T.		GEN.	T.L. P.T.		GEN.	T.L. P.T.	GEN.		T.L. P.T.
7/25/10	-	-	-	1653	2535.2	1067.40	-	-	-	-	-	Removed and Replaced injection manifold referencing Arriel 2 MTI No X 292M13032 Update No. 4: January 30, 2008. Part removed 0292217030 S/N ANR 54450 and installed part 0292217030 S/N 1956 B. Reassembly of engine referencing Arriel 2 B1 MM X 292 N5 4502. Revision 19: March 30, 2009. Ground runs performed and were acceptable. All work performed and recorded under WO # MS18 @ FAACRS KBMR 477F.
												HELIUM SERVICES of Nevada

TYPE D'AERONEF ET N° AIRCRAFT TYPE AND SERIAL No _____

UTILISATEUR / OPERATOR _____

IMATRICULATION REGISTRATION _____

POSITION MOTEUR : ENGINE POSITION _____

Lors de chaque changement d'utilisateur, d'aéronef ou de position moteur, passer à la page suivante