

**Maintenance Group Chairman Factual Report**

**Attachment 10 - Turbomeca Technician Report N108LN**

**WPR10FA371**



TSC Field Paper Work check list

- 1.) Customer name    AIR METHODS

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- 2.) Technician name    JUSTIN H. STOVALL
- 3.) Field work order number    MF11400
- 4.) Engine or module S/N            ESN 23366 MODULE 3 S/N 2007
- 5.) Customer AOG?    YES
- 6.) Mechanic departure date    31-Jul-10
- 7.) Intervention beginning date                   1-Aug-10
- 8.) Intervention ending date                   3-Aug-10
- 9.) Mechanic return date           4-Aug-10
- 8.) Type of intervention that was required and what level of maintenance           LEVEL 3
- 9.) What was rejected and returned to TM-USA           MODULE 3 P/N 70BMO32020 S/N 2007
- 9.) Engine information is correct. (TSN,CSN)
- 10.) Work order is filled out correctly with NO discrepancies.
- 11.) All SB's, CoC's, TI's, Section E entries and logcards are filled out correctly. (No missing data)
- 12.) Copies of all applicable documentation are with Work Order. (TI's, CoC's, TI report, Field build schedule, log book entry, 8130 or EASA, etc.)



Date:    5 AUG 10   

Delegate  
stamp


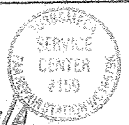

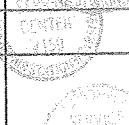


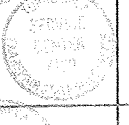


## TURBOSUPPORT FIELD MAINTENANCE ENGINE BUILD SCHEDULE

### ARRIEL ENGINE

ENGINE S/N 23366

Customer Air Methods

FIELD W/O # MF11400

SUBJECT	Chapter	Mechanic	Date
MO2/MO3 COUPLING AXIAL SCREW TORQUE <u>10,300</u> KPA  Axial stretch recorded <u>0.53 mm</u>	72-00-32		03 AUG 2010
ENSURE PROPER ORIENTATION OF RI (CHAMFER DOWN)			
MO2/MO3 COUPLING CONCENTRICITY <u>N/A</u> (Only if Axial was replaced)	ARI MTI # X292A93192 AR2 MTI # X292M13022	 <i>N/A</i>	03 AUG 2010
Installation of 2/3 onto MO1 Verify installation of O'ring and Torque of 4 Engine mount bolts	72-00-61		03 AUG 2010
Installation of MO4	72-00-54		03 AUG 2010
Installation of module 5 including Muff coupling and P2 tube ENSURE CORRECT ORIENTATION OF MUFF COUPLING. ARRIEL 1 VERIFY 8 O'rings ARRIEL 2 VERIFY 9 O'rings	72-00-15		03 AUG 2010
Single engine variant Install FWS bearing and Circlip	ARI-72-01-10 AR2-83-12-00		03 AUG 2010
Installation and torque of pipes  Note: Pipe Torque I.A.W Maintenance Manual.	70-40-02		03 AUG 2010
REPLACE ALL BROKEN SAFETY WIRE	70-42-00		03 AUG 2010
Torque seal all non-locking Unions , Bolts and Pipes	CTB 70-00-30		03 AUG 2010

Mechanic stamp 

Date 03 AUG 2010

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 JUSTIN H. STOVALL

Maintenance date from 01/AUG/2010 to 03/AUG/2010

**TYPE OF ENGINE / VARIANT** ARRIEL 2B1

Maintenance on

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

Airframe / Variant AS 350 B3	No. N 108LN S/N 3959
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<p>Customer AIR METHODS</p> <p>Name of technical contact JEFF</p> <p style="text-align: right;">Tel. 602-980-2700</p> <p>Maintenance carried out at AIR METHODS 11700 AVRA VALLEY RD. MARANA, AZ. 85653 Country U.S.A.</p>
<p>Reference documentation and issue number:</p> <p>ARRIEL 2B1 MAINTENANCE MANUAL XX292N54502 UPDATE NO: 20 NOV 30TH 2008, AND MAINTENANCE TECHNICAL INSTRUCTION X292M13032 UPDATE NO:04 JAN 30<sup>TH</sup> 2008.</p>

<p>Reason for removal code:</p> <p>Reason for removal description:</p> <p>CONTAINMENT ON FIELD MAINTENANCE.</p> <p>Purpose of maintenance:</p> <p>CONTAINMENT ON FIELD MAINTENANCE.</p>
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(\*) 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

<b>Comments concerning work carried out:</b>
<u>Preliminary findings:</u>
NONE FOUND
<u>Findings at disassembly:</u>
DURING DISASSEMBLY FLEXIBLE PIPE P/N 9560162070 HAD 16 MM HARDWARE INSTALLED ON THE MODULE 4 SIDE INSTEAD OF 14 MM. THIS ALLOWED THE BOLTS TO APPEAR TORQUED BUT HARDWARE WAS TOO LONG, SO THE FLANGE ON PIPE WAS LOOSE..... MODULE 3 HAD AN UNACCEPTABLE CRACK ON INNER HUB OF THE P.T. NOZZLE. MODULE 3 HAD ONE UNACCEPTABLE CRACK ON SWIRL PLATE .
<u>Work carried out:</u>
DISASSEMBLED ENGINE S/N 23366 TO COMPLY WITH INJECTION MANIFOLD CHANGE. DISASSEMBLED MODULE 3 P/N 70BMO32020 S/N 2007. DURING INSPECTION OF MODULE 3 S/N 2007 UNACCEPTABLE CRACKS FOUND ON P.T. NOZZLE, AND SWIRL PLATE. MODULE 3 S/N 2007 REMOVED FROM ESN 23366 TO SEND FOR REPAIR. INSTALLED REPAIRED MODULE 3 P/N 70BMO32020 S/N 00378. REASSEMBLED ESN 23366.
<u>Test results:</u>
CUSTOMER INFORMED OF ALL POST MAINTENANCE INSPECTIONS, AND CHECKS REQUIRED PRIOR TO REALEASE TO SERVICE.

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	1660.12	N/A	N/A	1931.01

(\*) 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	N/A	N/A	N/A	N/A	N/A	N/A
M 02	N/A	N/A	N/A	N/A	N/A	N/A
M 03	70BMO32020	2007	1660.12	N/A	N/A	N/A
M 04	N/A	N/A	N/A	N/A	N/A	N/A
M 05	N/A	N/A	N/A	N/A	N/A	N/A
(*)						
(*)						
(*)						

### 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	N/A	N/A	N/A	N/A	N/A	N/A
M 02	N/A	N/A	N/A	N/A	N/A	N/A
M 03	70BMO32020	00378	N/A	1931.01	4161.8	N/A
M 04	N/A	N/A	N/A	N/A	N/A	N/A
M 05	N/A	N/A	N/A	N/A	N/A	N/A
(*)						
(*)						
(*)						

(\*) 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


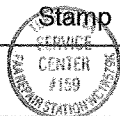
Description		Part Number	Serial no.	Operating hrs	Reasons for removal
MODULE 3	Installation	70BMO32020	00378	TSO 1931.01	N/A
MODULE 3	Removal	70BMO32020	2007	TSN 1660.12	PT NOZZLE CRACKED, SWIRL PLATE CRACKED.
	Installation				
	Removal				
	Installation				
	Removal				
	Installation				
	Removal				
	Installation				
	Removal				

#### INCORPORATION OF MODIFICATIONS - SL - SB

TU	N/A								
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Service Letter / Service Bulletin N/A

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
JUSTIN H. STOVALL	03AUG2010		
Name of Company	Authorization Card no.		Expiry date
TURBOMECA U.S.A.	200603205		25/08/10

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)

Site – TSC/ext	Year	Field Rep ID	FTEC/TSC Time
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The TECHNICAL MAINTENANCE REPORT shall be sent to your TM technical correspondent within 8 days of completion of maintenance work.



Removée

N° 1 FICHE MATRICULE DE FOURNITURE ECHANGEABLE / EXCHANGEABLE COMPONENT LOG CARD

IDENTIFICATION DE LA FOURNITURE / IDENTIFICATION OF COMPONENT	
Désignation / Identify	GENERATEUR DE GAZ GAS GENERATOR
Référence / P/N	70BM032020
N° de série / S/N	2007
Fabricant / Manufacturer	TURBOMECA
Type de moteur / Engine Type	ARRIEL 2

Cette fiche est affectée à tout module ou composant à vie-limité ou potentiel pouvant être échangé par l'utilisateur.  
Elle doit accompagner la fourniture dans tous ses mouvements et est remplacée si nécessaire lors du retour de celle-ci chez l'Industriel (ou Réparateur Agréé TURBOMECA). Elle doit être insérée dans le livret du moteur sur lequel la fourniture est installée.

This card is used for any module or item with limited life or T.B.O. which can be exchanged by the operator. It must accompany the component in all its movements, and will be replaced if necessary when the component is returned to the manufacturer (or to an Approved TURBOMECA Overhaul Facility). This card should be inserted in the engine log book on which the component is installed.

TRAVAUX EFFECTUES / WORKS CARRIED OUT	RENSEIGNEMENTS PARTICULIERS / REMARKS	STOCKAGE / STORAGE
	Boîtier jonction et conf. T4.5 S/N : 237MA Jonction box and T4.5 matching Résistances d'homogénéisation de T4.5 T4.5 homogeneity resistance T4.5	LD 25-sept-06
	Ra = 4,79100KΩ Rb = 4,45000 KΩ	
	Code binaire = 0111000 Code binaire = 0110100	

TU en base : 13A - 17A

MODIFICATIONS APPLIQUEES A LA LIVRAISON / MODIFICATIONS INCORPORATED AT TIME OF DELIVERY

TU : 22 - 33A - 44A - 51 - 63A - 71A - 87A - 103A - 104A - 107A - 127A - 138.

POTENTIEL CALENDRAIRE / CALENDAR TBO  
12/2006 + 15 ANS = 12/2021  
Lettre service / Service letter 2060 / 00 / AR 2B / 14 / Ed.5

FONCTIONNEMENT A LA LIVRAISON / LIFE USED AT TIME OF DELIVERY

Module	Total heures / Total hours	Potentiel TBO	Heures neuf Hours new	Disponibilité en heures Remaining hours		Disponibilité en cycles Remaining cycles		
	0	3500	0	3500		/		
Pièces à vie-limité Life limited parts	DESIGNATION IDENTITY	REFERENCE P/N	N° SERIE S/N	Heures de fonct. Total Total run hours	Disponibilité To be run	Cycles effectués total Cycles carried out total	Disponibilité To be run	
		ROUET CENTRIFUGE Centrifugal impeller	0292260880	403CAR	/	/	0	22000
		ROUE D'INJECTION Injection wheel	2292260210	3601AD	/	/	0	6500
		DISQUE TURBINE HP Turbine disc HP	2292260060	AZF8086UP	/	/	0	17000
Pièces à limite d'utilisation Usage limited parts	ROULEMENT Bearing	9609000493	1775	0	7000	/	/	
			N° appartement Matching number					
		PALES TURBINE HP Turbine blades HP	229226A070	M31	0	6000	0	10000

ATTESTATION DE CONTROLE / CERTIFICATE OF INSPECTION

Le signataire certifie que cette fourniture a été construite ou révisée conformément aux règles, a satisfait aux épreuves de réception et peut-être mise en service sous réserve du respect des consignes des Manuels agréés.  
SI CETTE FOURNITURE A SUBI UN ACCIDENT, ELLE DOIT ETRE INSPECTEE ET RECEPTIONNEE PAR UN CENTRE AGREE PAR TURBOMECA AVANT D'ETRE REMISE EN SERVICE.  
L'utilisateur est averti que l'utilisation en service d'un moteur - ou un composant - qui a subi un accident et n'a pas été inspecté et réceptionné par un centre agréé par TURBOMECA engage sa propre responsabilité.

The undersign certifies that the component described above has been manufactured or overhauled in accordance with applicable regulations, has completed all required acceptance testing and is approved for use in accordance with applicable operating and maintenance instructions.  
IF THIS COMPONENT HAS BEEN INVOLVED IN AN ACCIDENT, IT SHOULD BE INSPECTED AND APPROVED BY AN


L'Industriel / Réparateur agréé  
The manufacturer / Approved overhaul facility

Date - Signature  
21 September 2006



L'Autorité compétente  
The competent Authority

Agrément de Production  
FR.21G.0036  
Date - signature  
21 September 2006



**MOUVEMENTS / TRANSFERS**

Motif Reason	Moteur / Engine				Fourniture / Component Fct depuis neuf Operation since new			Utilisateur Operator	Date
	Type	S/N	H. depuis neuf H since new	Cycle depuis neuf Cycle since new	H	Cy	OEI		
POSE / Installed	ARRIEL 2	23366	0	0	0	0		TURBOMECA	21 September 2006
Removal	Arriel 2	23366	1660.12	2549.23	1660.12	2549.23		Turbomeca USA	03/06/2010

**ENTRETIEN / MAINTENANCE**

Travaux effectués / Works carried out	POSE / DEPOSE Installed/ Removal	EFFECTUES CARRIED OUT		Utilisateur Operator	Date Signature
		Heures Hours	Cycles		
Module SW 2008 not concerned by A.D.F. 2005-162: Tu 22 embodied	/	0	0	/	13/11/2006
Removed Injection manifold 0292217030 SN-2798B Ducto		852.0	1231.34		19 JAN 2007
Coking Installed NEW Injection manifold 0292217030 SN-2495B					
SAW MTE X 292 M 13032 REVISION 4 JAN 2008					
Replaced Inj manifold PR 0292217030 SN 2495B TSN 555.9 with repaired Inj manifold PR 0292217030 SN 2723B TSN 6.0 ref MTE		1487.9	2078.75		11/11/08
X292M13032 R4 Jan 2008. Details on HSN W09M1335					
Removed Inj manifold 0292217030 SN-2423B TSN-45.0		1493	2223		31 MAR 2010
Installed Inj manifold 0292213030 SN-54430 TSN-6.0 SAW MTE X292M13032 REV 4 JAN 2008					

NOTA : POUR LES PIECES A POTENTIAL, INSCRIRE LES TEMPS ET LES CYCLES DE FONCTIONNEMENT AVANT OU APRES POSE/DEPOSE.  
 FOR POTENTIAL PARTS, NOTE RUNNING HOURS AND CYCLES BEFORE OR AFTER INSTALLED / REMOVAL.

**INFORMATION DESTINEE UNIQUEMENT AUX REPARATEURS**

*Information for repairer use ONLY*

HEURES ET CYCLES REALISES AU BANC D'ESSAI MAIS NON PRIS EN COMPTE DANS L'ETAT DE DISPONIBILITE EN ACCORD AVEC LE CCT 6100  
 Hours and cycles realised at test bench but not count up into status of available, in accordance with CCT 6100

HEURES HOURS	4H 29	21 September 2006	
CYCLES	16,01		
HEURES HOURS			
CYCLES			
HEURES HOURS			
CYCLES			