GalaxyAerospace maintenance . repair . overhaul	Continuing Airworthiness Notice (CAN)	
	CAN No. / Rev No.	CAN 28 / R2
	Date	14-Apr-2022

To : GAM CAMO Tech Record Personnel

CC : GAM Accountable Manager, GAM Quality Assurance Manager

From : Continuing Airworthiness Management (CAM) Manager

Subject : Fill-in Instructions and Guidelines for OEM Component/Equipment Log Cards

1. REFERENCE

a. GAM Continuing Airworthiness Management Exposition (CAME) GAM/CAAM/CAME Issue 2 Revision 7 Date 14 February 2022 or later approved revision.

b. GAM Continuing Airworthiness Management Procedure (CAMP) GAM/CAMO/CAMP Issue 2 Revision 0 Date 17 February 2022 or later approved revision.

2. APPLICABILITY

a. OEM Component Log Cards

3. INTRODUCTION

a. Component/Equipment Log Cards issued/published by OEM are considered as part of continuing airworthiness records as stated in CAME Part 1.3.2 and shall be updated as per the procedures stated in CAMP Part 2.5.2

b. This notice is raised to provide instruction and guidelines issued by the OEM to fill these log cards. Any additional instruction and guidelines will be released from time to time with the revisions to this notice.

4. REQUIREMENT

a. The instructions and guidelines for the OEM Component/Equipment log cards listed below are attached together with this notice for reference:

NO	OEM	REFERENCE	INSTRUCTIONS AND GUIDELINES
1.	Leonardo S.p.A (previously Agusta Westland)	IL-GEN-16-055	CPR.073.15 F01 Annex A
2.	Airbus Helicopters	IN-2957-I-00	MTC Work Card 20.08.05.101
3.	Safran	GSL 3059/20	GUIDE 008264 (U441) GUIDE 008175 (U015)
4.	Pratt & Whitney Canada	P&WC JR3-6834-E [6834] (2012-10)	Instruction for Completing Form P&WC JR3-6834-E [6834] (2012-10)

Kindly be informed and adhere to the requirement.

Thank you.

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FINMECCANICA
HELICOPTER DIVISION

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AgustaWestland Products

INFORMATION LETTER

DATE: **February 24th, 2016**

No.: **GEN-16-055**

To: All Owners / Operators Finmeccanica Helicopter Division helicopters

SUBJECT: **New Log Card Template**

Helicopters Affected: All Finmeccanica Helicopter Division helicopters

Dear Customer / Operator,

With the present Information Letter Finmeccanica Helicopter Division would like to inform all Customers/Operators/Service Centres about the new issue of the Finmeccanica Helicopter Division Log Card template, in order to add additional fields/boxes and to ease the recording of all of the necessary data in accordance with the latest information included in the aircraft maintenance planning manuals.

The necessity of the new template was highlighted by a selected group of AW139 Customers during the AW139 Maintenance Improvement Team (MIT) and Finmeccanica Helicopter Division is glad to propose the closure of such important action with the final issuance of the new quality documentation.

Starting from January 2016 the new log card will be effective for use by Finmeccanica Helicopter Division and all Operators.

NEW LOG CARD HIGHLIGHTS

In the attached presentation you can find a summary of the modification introduced with the new Log Card template with respect to the old one, however please find below some highlights:

Considering that AMPI/MPM is a live document in continuous evolution due to design improvements and additional testing on current configuration aimed to extend limits (either related to life limits or inspection intervals), it is very important that the component Log Cards are duly filled by Customers/Operators/Service Centres recording all the necessary data to track the component service life and history when the part is returned to OEM for any maintenance activity.

In particular, it is necessary to record not only to the component Flight Hours (FH) but also the Landings (L) or the Cycles/Lifts (C/Lf) as some component requirements are driven by these parameters.

In addition, it is also necessary for all the components affected by Penalty Factors to clearly record the related penalties separately from the usage life (either in FH and L); this information is also useful in case of Penalty Factors value modification to correctly recalculate the component life with the new values.

Finmeccanica Helicopter Division would like to highlight the importance to properly record on the components Log Cards all the necessary data according to the latest Air Vehicle Maintenance Planning Information (AMPI) or Maintenance Planning Manual (MPM) requirements, in particular for components subject also to Penalty Factors (PF) applicable to specific Operations (i.e. AW139 MTOW above 6400 Kg, Cat A Training, etc.).

DOWNLOAD OF THE NEW LOG CARD TEMPLATE AND IMPLEMENTATION

Please be informed that the new Log Card template (completed with the filling instructions) is available for download through the Leonardo AW Customer Portal, accessible from Finmeccanica website.

The new template is going to be implemented throughout all Finmeccanica Helicopter Division production plants and Centres of Excellence on new delivered parts; for in service components the old Log Card can be used provided that all the necessary information are recorded whenever a component is returned to OEM for any maintenance activity.

Customers may use the new template also for in service component copying the current Log Card content in the new template if this can help recording the proper service life.

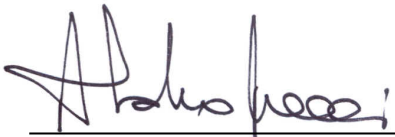
SPECIFIC NOTE FOR LOGISTICS MANAGEMENT

Please be informed that components that will be returned to OEM without all the appropriate information will not be accepted until such data will be made available.

Should you need any additional information, do not hesitate to refer to the point of contact provided with the Customer Support & Training Worldwide Directory available on the Finmeccanica website at this link:

http://www.finmeccanica.com/customer-support/elicotteri-helicopter/support/directory?WT.ac=Customer Support Directory

Yours Sincerely,



Alessandro Baricci
Finmeccanica Helicopter Division
Vice President
Customer Support & Services Italy

LEONARDO HELICOPTERS

LOG CARD

NOTICE:THIS FORM, DULY UPDATED, MUST FOLLOW THE ASSY

Section 1

ATA Chapter .....

DESCRIPTION (1)	P/N (2)	S/N (3)	MANUFACTURER NAME (4)	ASSEMBLY/MANUFACTURING DATE (5)	RETIREMENT LIFE / TIME LIMITS (6)
	P/N (7)	S/N (8)	MANUFACTURER NAME (9)	DATE OF CHANGE (10)	RETIREMENT LIFE / TIME LIMITS (11)
	P/N (7)	S/N (8)	MANUFACTURER NAME (9)	DATE OF CHANGE (10)	RETIREMENT LIFE / TIME LIMITS (11)

NOTES

ASSEMBLY HISTORICAL RECORD

INSTALLATION

DATE (12)	A/C		ASSY		ORGANIZATION, STAMP AND SIGNATURE (18)
	R. MARKS (13)	TOTAL FLIGHT HOURS (15)	TOTAL HOURS (16)	TIME SINCE OH (17)	
		TOTAL LANDINGS (15)	TOTAL LANDINGS (16)	LANDINGS SINCE OH (17)	
	S/N (14)	TOTAL LIFTS/CYCLES (15)	TOTAL LIFTS/CYCLES (16)	LIFTS/CYCLES SINCE OH (17)	

REMOVAL

DATE (19)	A/C	ASSY			REASON FOR REMOVAL (24)	ORGANIZATION, STAMP AND SIGNATURE (25)
	TOTAL FLIGHT HOURS (20)	ACTUAL TOTAL HOURS (21)	TOTAL HOURS WITH PENALTY FACTOR (22)	TIME SINCE OH (23)		
	TOTAL LANDINGS (20)	ACTUAL TOTAL LANDINGS (21)	TOTAL LANDINGS. WITH PENALTY FACTOR (22)	LANDINGS SINCE OH (23)		
	TOTAL LIFTS/CYCLES (20)	ACTUAL TOTAL LIFTS/CYCLES (21)		LIFTS/CYCLES SINCE OH (23)		

LEONARDO HELICOPTERS	**LOG CARD** NOTICE:THIS FORM, DULY UPDATED, MUST FOLLOW THE ASSY	Section 2 **ATA Chapter** ....

COMPONENTS INSTALLED ON ASSY

ASSY P/N (26)		ASSY S/N (27)	

COMPONENT DATA			INSTALLATION				REMOVAL				
			ASSY	COMPONENT			ASSY	COMPONENT			
DESCRIPTION (28)	P/N (29)	MANUFACTURING DATE (31)	TOTAL HOURS (33)	TOTAL HOURS (34)	TIME SINCE OH (35)	DATE (36)	TOTAL HOURS (38)	TOTAL HOURS (39)	TOTAL HOURS WITH PENALTY FACTOR (40)	TIME SINCE OH (41)	DATE (42)
			TOTAL LANDINGS (33)	TOTAL LANDINGS (34)	LANDINGS SINCE OH (35)	STAMP AND SIGNATURE (37)	TOTAL LANDINGS (38)	TOTAL LANDINGS (39)	TOTAL LANDINGS WITH PENALTY FACTOR (40)	LANDINGS SINCE OH (41)	STAMP AND SIGNATURE (43)
	S/N (30)	RETIREMENT LIFE / TIME LIMITS (32)	TOTAL LIFTS/CYCLES (33)	TOTAL LIFTS/CYCLES (34)	LIFTS/CYCLES SINCE OH (35)		TOTAL LIFTS/CYCLES (38)	TOTAL LIFTS/CYCLES (39)		LIFTS/CYCLES SINCE OH (41)	

LEONARDO HELICOPTERS	**LOG CARD** NOTICE:THIS FORM, DULY UPDATED, MUST FOLLOW THE ASSY	Section 3 **ATA Chapter** .....

ASSEMBLY ACTIVITY HISTORY

ASSY P/N (44)		ASSY S/N (45)	

DATE (46)	TOTAL HOURS (47) TOTAL LANDINGS (47) TOTAL LIFTS/CYCLES (47)	TASKS (48)	ACTIVITIES (49)	ORGANIZATION (50)	STAMP AND SIGNATURE (51)

AIRWORTHINESS DIRECTIVES AND BULLETINS COMPLIANCE

ASSY P/N (52)		ASSY S/N (53)	

AIRWORTHINESS DIRECTIVES AND MANDATORY BULLETINS

AIRWORTHINESS DIRECTIVE/ MANDATORY BULLETIN NUMBER (54)		ASSY TOTAL HOURS (57)	ORGANIZATION (58)	STAMP AND SIGNATURE (59)
ISSUE / REVISION (55)	DATE OF COMPLIANCE (56)	ASSY TOTAL LANDINGS (57) ASSY TOTAL LIFTS/CYCLES (57)		

OPTIONAL BULLETINS

OPTIONAL BULLETIN NUMBER (59)		ASSY TOTAL HOURS (57)	ORGANIZATION (58)	STAMP AND SIGNATURE (59)
ISSUE / REVISION (55)	DATE OF COMPLIANCE (56)	ASSY TOTAL LANDINGS (57) ASSY TOTAL LIFTS/CYCLES (57)		

LEONARDO HELICOPTERS

LOG CARD

NOTICE:THIS FORM, DULY UPDATED, MUST FOLLOW THE ASSY

Annex A

ATA Chapter .....

PENALTY FACTORS RECORD

ASSY/COMPONENT DESCRIPTION (60)		ASSY/COMPONENT P/N (61)		ASSY/COMPONENT S/N (62)	

FLIGHT ID / # (63)	DATE (64)	HOURS (65)	APPLICABLE PENALTY FACTOR											
			(66)		(68)		(70)		(72)		(74)			
		LANDINGS (65)	HOURS (67)	LANDINGS (67)	HOURS (69)	LANDINGS (69)	HOURS (71)	LANDINGS (71)	HOURS (73)	LANDINGS (73)	HOURS (75)	LANDINGS (75)		

LOG CARD - FILLING INSTRUCTIONS

GENERAL

Cross out all the log card boxes where required data are not applicable to the assy/component.

SECTION 1 - HEADER

1. P/N description
2. P/N
3. S/N
4. Manufacturer name (Vendor / LH plant)
5. Assembly or manufacturing date
6. Approved data applicable time limits description: “RL”: Retirement Life, “DT”: Discard Time, “OH”: Overhaul or “N/A”: Not Applicable
7. New P/N replacing previous P/N
8. New S/N replacing previous S/N
9. New manufacturer name (Vendor / LH plant)
10. Modification date
11. Approved data applicable time limits description: “RL”: Retirement Life, “DT”: Discard Time, “OH”: Overhaul or “N/A”: Not Applicable

SECTION 1 - NOTES

SECTION 1 - ASSEMBLY HISTORICAL RECORD

12. Assy installation date
13. Helicopter registration
14. Helicopter S/N
15. Helicopter total flight hours / landings / lifts/cycles at the assy installation date
16. Assy total hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles at the installation date (hours / landings / lifts at the date of the last removal + penallty factors, if applicable)
17. Assy hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles since last overhaul at the installation date
18. Organization that performed the installation, Stamp and signature of the technician that performed the installation
19. Assy removal date
20. Helicopter total flight hours / landings / lifts/cycles at the assy removal date
21. Assy total hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles at the removal date
22. Total flight hours / landings calculated applying Penalty Factors, if applicable (refer also to Log Card Annex A for Penalty Factors data)

LOG CARD - FILLING INSTRUCTIONS

23. Assy hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles since last overhaul at the removal date
24. Reason for assy removal from the helicopter
25. Organization that performed the removal, Stamp and signature of the technician that performed the removal

SECTION 2 - COMPONENTS INSTALLED ON ASSY

26. Assy P/N (refer to box 2 or 7)
27. Assy S/N (refer to box 3 or 8)
28. Component description
29. Component P/N subject to time limits
30. Component S/N or batch number (**mark with * S/N with a dedicated Log Card**)
31. Manufacturing date for components with a calendar time limit
32. Approved data applicable time limits description: “RL”: Retirement Life, “DT”: Discard Time, “OH”: Overhaul or “N/A”: Not Applicable
33. Assy total hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles at the component installation date
34. Component total hours (flight hours, operating hours, running hours, rotor hours, rotor hours) / landings / lifts/cycles at the installation date on the assy
35. Component hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles since last overhaul at the installation date
36. Component installation date
37. Stamp and signature of the technician that performed the installation
38. Assy total hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles at the component removal date
39. Component total hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles at the removal date from the assy
40. Total flight hours / landings calculated applying Penalty Factors, if applicable (refer also to Log Card Annex A for Penalty Factors data)
41. Component hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles since last overhaul at the removal date
42. Component removal date
43. Stamp and signature of the technician that performed the removal

SECTION 3 - ACTIVITY HISTORY

44. Assy P/N (refer to box 2 or 7)
45. Assy S/N (refer to box 3 or 8)
46. Activity date
47. Assy total hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles at the date fo the activity
48. Specify the type of the activity (repair, overhaul, modification, test, inspection,…) to be performed on the assy or on components listed in Section 2
49. Detailed description of the activity
50. Organization that performed the installation
51. Stamp and signature of the technician that performed the activity

LOG CARD - FILLING INSTRUCTIONS

SECTION 4 - AIRWORTHINESS DIRECTIVES AND BULLETINS COMPLIANCE

52. Assy P/N (refer to box 2 or 7)
53. Assy S/N (refer to box 3 or 8)
54. Identification number of the applicable document (Airworthiness Directive, Bollettino Tecnico, Service Bulletin,...)
55. Document issue / revision index; in case of document composed of multiple sections applied separately, record compliance with each section on different rows
56. Document compliance date
57. Helicopter/assy total hours (flight hours, operating hours, running hours, rotor hours) / landings / lifts/cycles at the date fo the directive compliance
58. Organization that performed the installation
59. Stamp and signature of the technician that performed the activity

ANNEX A - PENALTY FACTORS RECORD

The use of Annex A is not mandatory. Any other method to track and record penalty factors data is acceptable.

60. Assy/Component description (if penalty factors are applicable to component installed on assy)
61. Assy/Component P/N (if penalty factors are applicable to component installed on assy)
62. Assy/Component S/N (if penalty factors are applicable to component installed on assy)
63. Identification of the flight affected by penalty factors
64. Date of the flight affected by penalty factors
65. Flight duration (hours) and number of landings performed during flight
66. Specify the applicable Penalty Factor
67. Flight hours / landings calculated applying penalty factor defined as per note (66)
68. Specify the applicable Penalty Factor
69. Flight hours / landings calculated applying penalty factor defined as per note (68)
70. Specify the applicable Penalty Factor
71. Flight hours / landings calculated applying penalty factor defined as per note (70)
72. Specify the applicable Penalty Factor
73. Flight hours / landings calculated applying penalty factor defined as per note (72)
74. Specify the applicable Penalty Factor
75. Flight hours / landings calculated applying penalty factor defined as per note (74)

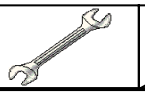
No. 2957-I-00

Information Notice

SUBJECT: GENERAL

Reminder of the rules for completing Log Cards

For the attention of



AIRCRAFT CONCERNED	Version(s)	
	Civil	Military
EC120	B	
AS350	B, BA, BB, B1, B2, B3, D	L1
AS550		A2, C2, C3, U2
AS355	E, F, F1, F2, N, NP	
AS555		AF, AN, SN, UF, UN, AP
EC130	B4, T2	
SA365 / AS365	C1, C2, C3, N, N1, N2, N3	F, Fs, Fi, K, K2
AS565		MA, MB, SA, SB, UB, MBe
SA366		GA
EC155	B, B1	
SA330	J	Ba, Ca, Ea, L, Jm, S1, Sm
SA341	G	B, C, D, E, F, H
SA342	J	L, L1, M, M1, Ma
ALOUETTE II	313B, 3130, 318B, 318C, 3180, 3180B, 3180C	
ALOUETTE III	316B, 316C, 3160, 319B	
EC225	LP	
EC725		AP
AS332	C, C1, L, L1, L2	B, B1, F1, M, M1
AS532		A2, U2, AC, AL, SC, UE, UL
EC175	B	
EC339		KUH/Surion
H160	B	
BO105	C (C23, CB, CB-4, CB-5), D (DB, DBS, DB-4, DBS-4, DBS-5), S (CS, CBS, CBS-4, CBS-5), LS A-3	CBS-5 KLH, E-4
MBB-BK117	A-1, A-3, A-4, B-1, B-2, C-1, C-2, C-2e, D-2, D-2m, D-3, D-3m	D-2m, D-3m
EC135	T1, T2, T2+, T3, P1, P2, P2+, P3, EC635 T1, EC635 T2+, EC635 T3, EC635 P2+, EC635 P3, T3H, P3H, EC635 T3H, EC635 P3H	

Reason for Revision 1: This Revision reminds operators to complete Equipment Log Cards according to the requirements given in the respective MTC. Moreover the range of affected H/C is extended.

This Information Notice is intended for airworthiness departments (CAMO), in order to facilitate and clarify the airworthiness state of parts which are subject to maintenance monitoring. This traceability is even more important if these parts are sent to a maintenance and repair organization or subject to a standard exchange (change of ownership), and in particular for customers with a PBH contract.

The applicable general rules in the aeronautics industry for drafting and updating Equipment Log Cards are specified in MTC Work Card 20-08-05-101.
All the successive positions, maintenance and minor or major repair operations must be recorded in figure 2, table 7 of the Equipment Log Card (FME).
We remind you that the "On Condition" (OC) and "Perform Once" (PO) operations specified in the maintenance program (PRE/MSM) are part of the maintenance and must be recorded in table 7 of the Log Card.

Airbus Helicopters is observing deviations in the quality of the information recorded in the Equipment Log Cards. As a complement to the rules indicated in the MTC, we remind you that it is mandatory to record the following information (non-exhaustive list):

- Operating hours for all components, MTC 20-08-05-101 E.(9) Boxes 3 and 4.
- Cycles for parts monitored in cycles, MTC 20-08-05-101 E.(9) Boxes 5 and 6.
- Corrective multiplication factors for hours and cycles, if applicable, as per MSM, ALS, PRE, MDE and ASB/EASB.
- If a Log Card exists at Higher Assembly level, it is mandatory to create a Follow-Up Sheet as per the rule in MTC 20-08-05-101 C (14): Monitoring of components with a "FOLLOW-UP SHEET".
- Reason for removal recorded at least in English (except for specific contracts).
- Sufficient description of the reason for removal, mainly for unscheduled removals, in order to give sufficient information to the repair station. Any information complementing the Equipment Log Card (TE number, accompanying photos) is appreciated.
- Record the maintenance operations performed on the assemblies in the Equipment Log Card (see dedicated paragraph).
- The format of the Equipment Log Card to be used is the one described in the Airbus Helicopters documentation (except for specific contracts), MTC 20-08-05-101 E.(9) figures 1 to 5.

Maintenance operations:
All these maintenance operations are systematically recorded in the helicopter operator's airworthiness management software. However, once the equipment is removed from the helicopter, traceability is no longer ensured.
Data extractions from this airworthiness management software cannot replace the updating of Equipment Log Cards, because the information contained in these extracts is often incomplete and difficult to read for the new owner or organization responsible for this equipment.
The regulations require that all necessary information is provided to the new owner or organization, so that they are able to analyze the part's airworthiness and to schedule the future maintenance intervals.

Equipment items are sometimes sent to Airbus Helicopters for maintenance or repair without their Log Card. The Log Card has either been lost or is sent by mail subsequently. We remind you that equipment items must always be accompanied by their Equipment Log Cards, unless they are installed on the helicopter. This is especially important during the transportation phase.

These basic rules applicable to aircraft must be complied with in order to avoid wasting time researching information and to prevent unavailability of the helicopter and extra maintenance cost.
If these obligations are not complied with, Airbus Helicopters reserves the right to enforce the terms of the contract or, failing that, the general terms and conditions, i.e.:
- within the scope of a repair: return of the part as is, at the customer's expense,
- within the scope of a standard exchange (including PBH): scrapping and replacement of the part, at the customer's expense.

General rules applicable to aircraft

101. Drafting and updating the log card (FM)

A. Purpose

This card defines the methods for drafting, distributing and using equipment Log Cards for the programs and products of Airbus commercial helicopters.

B. Definitions

(1) Product: equipment, part, assembly or subassembly which has a reference.

(2) Log Card: document which contains all the data related to the life cycle of a part (e.g.: maintenance operations, service life limit, etc.).

For equipment with TBO:

the documents must allow the user to track the history of the items:

- since their manufacture for new equipment,
- since the last overhaul for revised assemblies.

For equipment without TBO:

the documents must allow the user to track the history of the products, or at least from when traceability is required, up to their removal from service.

C. Process description

(1) Drafting of Log Cards

General requirement criteria for Log Cards.

- Applicable AMPP / MSM documents for the airworthiness limits in compliance with the ATA 100 specification: 04-10-00 MSM, for the Service Life Limits (SLL).
- Applicable documents AMPP / MSM for the operating time limits / maintenance inspections in compliance with the ATA 100 specification: 05-10-00 MSM, for the OTL and TBO limits.

All equipment complying with the following criteria must be the subject of a Log Card to be monitored in service as from the initial manufacturing stage or from an overhaul:

- any part which includes sub-components that have a service life limit or operating time limit or that undergo "on condition" maintenance (when contractually required), and that affect airworthiness, i.e. any part which is not affected by AMPP / MSM chapter 4 and / or chapter 5 but which includes sub-components which are affected by AMPP / MSM chapter 4 and / or chapter 5,
- any part which affects airworthiness and has a service life limit or an operating time limit or undergoes "on condition" maintenance, but which is not part of an assembly with a "TBO" (Time Between Overhauls) i.e. any part which is affected by AMPP / MSM chapter 4 and / or chapter 5,
- any part defined by the Design Office (e.g.: Applicable design data, Statement of performance, etc.),
- any part which can be modified by a loadable software,
- any part which is the subject of a request from the Quality Department.

Log Cards must always be with the equipment item as long as it is not installed on the helicopter. When the equipment item is installed, the Log Card must be included in the helicopter documentation.

NOTE

The traceability of equipment complying with the above criteria must at least be provided by the Log Card of the assembly.

In addition, the Log Card is assigned to a part / assembly and does not specify the AIRWORTHINESS.

Specific requests from customers.

Any specific request from the customer, indicated in the contract and out of the scope of Airbus criteria and which requires additional Log Cards to be drafted, must obtain approval. These Log Cards must be supplied before delivery of the helicopter or spare parts.

(2) Model

- The Log Card model to be used is the latest issue of the appropriate form, in compliance with the indications below, unless differently indicated in the contract.
- The Log Cards must be made of stiff paper with a weight of at least 160 g/m^2, in A4 format and a LH margin of 21 mm (e.g.: XEROX Symphony Gold, Salmon Rainbow Colored Paper, or equivalent A4, 160 g/m^2; TAHOMA font; size 8 or 10 recommended).

(3) Completing the Log Cards

(*Figure 5*)

The operations performed on the equipment item are continuously recorded as per the instructions until the said equipment item is delivered to the customer or the Log Card is archived at the end of the equipment item life.

Dates must be indicated in the following format: DD/MM/YYYY. A dash instead of the slash is permitted (DD-MM-YYYY). The format for the month with 3 letters [mmm] is also accepted. The date of manufacture MM/YYYY can be accepted.

(4) List of components

(*Figure 4*)

An inventory list at SRU level must be added to the Log Card. It lists:

- all the SRUs (Shop Replaceable Units) for equipment to be monitored in service,
- all the SRUs / equipment items which can be replaced by the operator during the service life,
- all the SRUs / equipment items which have an Operating Time Limit "OTL" and for which monitoring is associated with an individual number,
- all the software versions installed.

The equipment monitoring process can differ for different versions of a same helicopter type. When a component must be listed for at least one version, that component is listed for the same helicopter type, regardless of the version.

The number of any recordable concession associated with a component must be recorded in the inventory and Table 4 *Figure 4* of the Log Card. If this component is different from the support, the concession number in Table 4 must be deleted.

(5) Specific information

Table 4 or its appendix allows the customer to better understand some additional information required for component monitoring, that is to say:

- the recordable concession numbers, the corresponding storage instructions, specific information related to adjustments, etc.,
- the identification numbers and descriptions of any components with Operating Life Limits (OTL) that are not included in the inventory list,
- if necessary, the RDAS (Repair Design Approval Sheet) number,
- when there is an SCS (Storage and Condition Sheet), it is recommended to indicate that there is one, if operations are necessary during storage.

(6) Special Log Cards requested by the customer

(*Figure 1*)

If a Log Card is specially requested by the customer, the following information must be provided:

- identification (Table 1),
- drafting date of the Log Card (Table 5).

(7) Approval of the Log Card

All information in the Log Card and its appendices must be confirmed and stamped by qualified staff.

(8) Providing customers with Log Cards

- The Log Cards must provide the customers with all the necessary information for the maintenance of their helicopters and their components. The log cards must also provide all the necessary data for maintaining the continued airworthiness of the product.
- The customer Log Card is a Log Card issued by Airbus at delivery of the helicopter and any spare parts, to record all the necessary information for the maintenance of the helicopter and its components and also to provide all the necessary data for airworthiness and maintainability.
- The first customer Log Card is delivered at issue 1 and includes the following data:
  . the date of manufacture (or installation) of the equipment item,
  . aging (flight hours, cycles),
  . the date of first installation (only for products with a TSI (Time Since first Installation) indicated in the maintenance documentation and only for new helicopters, not for repaired / removed products),
  . the latest installation after final operations by Airbus,
  . the latest status of maintenance performed and the latest compliance with each SB,
  . the last reference if there was a retrofit.

(9) New issue of the Log Cards

The Log Cards must be issued again each time the original card cannot be supplied as is to the customer.

The card is thus drafted again: its content is written again in full and confirmed by the qualified staff as per paragraph "Confirmation of the Log Card".

After a Log Card is issued again, it must be certified by the qualified staff.

(10) Duplicate of the Log Cards

- When the original Log Card is lost or its condition means that it is no longer readable, it is possible to issue a duplicate, depending on the availability of the necessary history data for maintaining the continued airworthiness of the product (including the data required for operation and maintenance monitoring).
- In addition to the rules related to new Log Cards, the Log Card must indicate in the header of the first page:
  "Log Card DUPLICATE by XXX (name or end user) ON date XXX (refer to § (3) Filling of Log Cards for date format) - ORIGINAL Log Card MISSING, "THE INFORMATION IS VALIDATED BY XXX" ".

(a) Management of duplicates

1 If the product comes from the customer, the duplicate request must be recorded and managed in compliance with the commercial provisions between the two parties.

Airbus must obtain a written request (as per the example given in *Figure 6*), with all the information about the identification of the product, from the customer. The request can be rejected if there is a doubt or with respect to airworthiness.

Airbus uses this process for duplicate requests to remind the customers:

- that they must update the duplicate of the Log Card with all product history data from its latest delivery by Airbus,
- of their liability when they transfer information in their possession for the monitoring of the product airworthiness.

When supplying the Log Card duplicate, Airbus only certifies the information transferred up to the delivery of the product.

(b) Products with operation / maintenance monitoring

In addition to the above rules, a duplicate is only issued if all the history data related to the continued airworthiness of the product (date of manufacture, flight hours, cycles, modification, first installation date, etc.) is available.

If not, the product will be sent to the organization which delivered it, for decision.

(11) Log Card corrections

Any correction made to a Log Card will be correctly certified by qualified staff. The qualified staff will enter the correction manually and apply their stamp to it.

The information must not be deleted or hidden (with correction tape / fluid, for example).

Any incorrect information will be deleted and replaced by the correct information which will be confirmed by qualified staff.

(12) Overhauled, repaired or returned equipment

Any overhauls, repairs or returns must be specified on the original copy of the Log Card

by the qualified staff (Airbus approved staff, supplier, customer MRO organization).

NOTE

For a product returned to Airbus as part of the RMA (Return Material Authorization) process and which does not have its original Log Card, a process was established to obtain the customer responsibility and all the information required to make a decision (as per the example in Figure 6). If the process is not conclusive:

- *when the part has a TBO (Time Between Overhauls) only, the overhaul maintenance operation is systematically performed,*
- *when the part has a service life limit, it cannot be maintained if there is no information and it must be removed from service.*

(13) "Supplied" equipment

The equipment Log Card must be supplied by the vendor or final operator. The vendor or final operator is responsible for completing the Log Card as per the contractual procedure.

(14) Monitoring of components with a "FOLLOW-UP SHEET"

- A follow-up sheet must be issued when a monitored component (integrated in an assembly with a Log Card) without a Log Card is separated from its support assembly.
- The follow-up sheet is based on the current Log Card model which uses a "FOLLOW-UP SHEET" (Refer to *Figure 1*).
- This follow-up sheet is used to record the history of the component before and during the period in which it is separated from its support assembly.
- It is possible to destroy the follow-up sheet when the component is installed again on the support assembly and all relevant information is transferred to the monitoring documentation of the support assembly (e.g. assembly Log Card).
- The document must indicate clearly whether it is a "LOG CARD" or a "FOLLOW-UP SHEET" (the unwanted title is deleted).

D. Rules

1. Equipment items that are transferred from a monitored version to a non-monitored version must be monitored (recording units) and the "To be monitored in service" stamp must appear in the "Special information" column of the list of components.
2. The requirements related to the supply of Log Cards are defined in the identification file of the equipment item which is updated as per the Technical Department instructions, the Master Servicing Manual (MSM) and the contractual requirements.
3. Equipment Log Cards must always be with the equipment item as long as it is not installed in the helicopter. When overhauls or repairs of the equipment item are outsourced, the equipment Log Card must be supplied to the sub-contractor.
4. All operations performed on the said equipment item must systematically be indicated on the Log Card.
5. Any added or modified information must be confirmed and stamped by qualified staff.
6. When a supplied equipment item (new equipment item without a history at Airbus or at the customer's premises) is sent by a supplier without the Log Card, the Airbus staff can exceptionally draft the Log Card (which is usually drafted by the supplier).

7. When an equipment item is discarded or becomes unusable, the Log Card must be crossed with a red line and indicate "FORBIDDEN TO FLY".
8. Unless differently agreed (e.g. contractual agreement), the Log Cards delivered to the customer with the equipment item must be drafted in English.
9. When a Log Card requirement changes from NO to YES or from YES to NO, in the follow-up file, the scope concerns all new parts which are the property of Airbus along with those which are already held in storage and those delivered by suppliers. Information about this change is given by the "DO data administration" department or automatically to the Logistic and Procurement sector managers, for compliance with the process of corrective and preventive actions.

   If this change to the Log Card requirement applies to our customers, it will be specified through a Service Bulletin.

E. Drafting of the Log Cards

(*Figure 1* and *Figure 2*)

(1) Methods for filling the Log Cards

TECHNICAL SHEET No. - Log card No.:

number 1 for the first technical sheet,

numbers 2, 3, etc. for each additional technical sheet created (e.g.: as the component reference is modified, each time a table is full, etc.).

Each time a new technical sheet n+1 is used:

- delete Tables 5 and 6 in the technical sheet n and add "Refer to technical sheet n+1",
- fill each table in the technical sheet n+1 and staple the technical sheet n as an appendix to the technical sheet n+1,
- in Table 5 of the technical sheet n+1, record the number of operating hours already recorded in the technical sheet n and add the "Total number of hours transferred from sheet n to sheet n+1".

(2) Equipment identification (Table 1)

- Designation:
  To be indicated for information purposes. This designation must be engraved on the equipment item identification plate, if possible.
  The designation on the Log Card is provided for information purposes only.
- Reference:
  The equipment reference and the serial number constitute the minimum data required to identify a single part.
- NATO stock number.

1. (NATO) stock number of the equipment item for joint forces.
2. This stock number must be systematically provided to governmental customers in compliance with the contract specifications applicable to other customers.
3. This stock number must be indicated before delivery to the customer as per the data available in the file of the equipment item.

- Design definition reference / Airbus reference:
  definition of reference allocated by Airbus.
- If the reference changes, a Log Card 2 must be created.
  In this case, Log Card No. 2 refers to the new reference number and the former

Log Card No. 1 refers to the former reference number and indicates the new Log Card and the reference number modification. The history of the equipment items must be checked to make sure that it is exhaustive and traceable, during the entire service life of the equipment. The former Log Card No. 1 must be attached to Log Card No. 2.

- Manufacturer reference:
  design definition reference allocated by the equipment manufacturer (Airbus or supplier). It is permitted that Airbus does not provide this reference as it is indicated in the "Airbus reference" box.
- Delivery configuration:
  this reference must be indicated for transmissions each time it differs from the manufacturer reference. It corresponds to the procurability reference indicated in the Illustrated Parts Catalog.
- Serial number:
  serial number of the equipment item.
- Manufacturer:
  name of the manufacturer (to be indicated for information purposes only),
  the manufacturer can be indicated in various formats (abbreviation, acronym, historical data, etc.) and can change during the industrial life cycle of an equipment item,
  the name of the manufacturer is indicated on the Log Card for information purposes only. It cannot be the subject of a non-conformity.
- NATO code:
  NATO code of the equipment manufacturer (to be indicated for information purposes only),
  the code can appear during the service life of the equipment item without being modified,
  the NATO code indicated on the Log Card is the code in force when the equipment manufacturer delivered the equipment item to Airbus. If the Log Card is issued again, the NATO code in force at this time is used,
  the NATO code of the equipment manufacturer is indicated on the Log Card for information purposes only. It cannot be the subject of a non-conformity.
- Version (optional):
  if the equipment is new, do not fill this field on the Log Card,
  if the equipment is installed, indicate the last version on which it was installed.
- Amendments:
  indicate the issues which identify the successive amendments applied to the equipment item.
- Type: if known.

(3) Contract or order (Table 2)

EQUIPMENT ITEM DELIVERED TO A CUSTOMER BY Airbus.

- reference / date:
  BLANK (section that can be left as is, whether or not it is duly filled).
- Issuing agency:
  BLANK (section that can be left as is, whether or not it is duly filled).
- Batch No.:
  BLANK (section that can be left as is, whether or not it is duly filled).
- Supplier:
  BLANK (section that can be left as is, whether or not it is duly filled).
- Address:
  BLANK.

(4) Guarantee (Table 3)

TO BE FILLED ONLY BY Airbus.

- Equipment:

1. new equipment item: BLANK,
2. overhauled or repaired equipment item: record the type of operation: INS, RE, MOD, OV (inspected, repaired, modified, overhauled).

- Date of delivery:

1. equipment item installed on the helicopter: BLANK,
2. spare parts (Government contracts only): corresponds to the date of the delivery slip or the scheduled transport date,
3. overhauled or repaired equipment item: BLANK.

- Storage guarantee period:
  government contracts only: record the storage guarantee in months.

- Service date:

1. equipment item installed on the helicopter: BLANK,
2. equipment item delivered as spare part: BLANK,
3. overhauled or repaired equipment item: BLANK.

- Operation guarantee period:
  government contracts only: record the operating life guarantee indicated by Airbus. If there is no information in the contract, refer to the general sales conditions.

NOTE

For equipment supplied by the customer, leave the section as is, whether or not it is duly filled.

If Airbus needs to provide a copy, this table must not be filled.

(5) Special information (Table 4)

The following information must be indicated respectively in this section and in this appendix, if necessary:

- numbers of recordable concessions applicable to the equipment item with Log Card and / or its components (recordable concessions must be attached to the Log Cards),
- identification number and description of the "OTL" components that are not included in the inventory list,
- specific storage conditions,
- specific adjustments if they do not already appear in the equipment item technical documents,
- RDAS No., if necessary,
- serial number of the matched items,
- there is a list of life-limited parts (with page numbers), an appendix to Table 4, a transfer Log Card in compliance with the applicable procedure, as required.

For components to be checked, the following information must be indicated in red to avoid any confusion with the standard components:

- experimental equipment - Card to be created or revised on written request from the Technical Department only,
- specific information attached to the experimental equipment (as per the applicable procedure):

1. equipment forbidden to fly,
2. equipment forbidden to turn,
3. equipment which can be used again with or without limitations.

The contents of Table 4 must be confirmed by qualified staff with respect to the latest information recorded. Any added or modified information in this table (with respect to the original information) must be confirmed by the qualified Department.

The following information must be updated:

- appendix to Table 4 (Yes / No),
- inventory of components with service life limit (Yes / No),
- transfer Log Card (Yes / No). If "Yes", indicate the number of pages.

Only completed sheets must be provided, the empty sheets must be deleted.

NOTE

If a recordable concession must be canceled, the cancellation information (e.g. "recordable concession No. xy canceled due to ... on xx/yy/zzzz) must be indicated in Table 7 and then stamped. The entry (number) related to the recordable concession in Table 4 must be deleted and an inspection stamp must be applied to this operation. The information related to the cancellation must be indicated in Table 4 next to the entry which was previously deleted ("refer to Table 7 for more information").

Operating limit / service life limit / ATA.

Not to be filled.

This information can change. This section must be filled by the customer using the information contained in the customer support documents.

(6) Operations (Table 5)

TO BE FILLED ONLY FOR NEW EQUIPMENT.

- Unit or company:
  indicate the logo of the unit, factory or company responsible for the manufacturing, acceptance, depreservation, maintenance or installation of the equipment item on its support.

- Date of manufacture:

1. this is the date of the final inspection of the part and is written on the parts and equipment items, and on the packaging labels. For elastomers, this can be the vulcanization date. On documents certifying the conformity or airworthiness, the date, identical or a later date, corresponds to when the certification was confirmed.

- Helicopter version and serial number:

identify the support on which the equipment item is installed.

- Support:
  during installation, indicate with the required unit the age of the support on which the equipment item is installed during service. This information is available in the technical documents for the support.
- Partial time:
  not to be filled.
- Total time:
  indicate the total operating time or the number of cycles since the first installation on the helicopter. For new equipment, write "0 Hrs".
- Certification:
  an inspection stamp confirming the information given in Tables 1, 2, 3, 4 and 5 during the creation of the Log Card must be applied by qualified staff.

(7) Modification and Service Bulletin checking

(*Figure 3* - Table 6)

- Number:

1. indicate (one entry per line) the modifications embodied and not integrated in the reference number in increasing order. For the Authorities, indicate the number of official modifications corresponding to the manufacturer modification number, e.g. 07 8443 - S 618,
2. indicate (one entry per line) the mandatory and recommended Service Bulletins (SB or ASB) complied with, in increasing order.

- Type of modification:

1. filling this section is only required if design modifications, here referred to as "Modifications", are embodied after delivery,

   these changes can be real Modifications with change of the reference, or Amendments with the same reference,
2. the type of modification must be described succinctly (Modification or Amendment).

- Performing unit or contractor:
  indicate the logo of the company.
- Date of embodiment and inspection stamp.
- New equipment:

1. date of modification embodiment after updating the Log Card. When there are several modifications or Service Bulletins, the whole is confirmed by a single stamp applied to the latest modification,
2. when Airbus is concerned and for equipment from a supplier, leave the section as is, whether or not it is duly filled.

- Equipment in operation:
  date of modification embodiment and inspection stamp or operator name and signature.

(8) Successive status and minor / major maintenance and overhaul operations

(*Figure 2* - Table 7)

- General:

1. any equipment item removed for minor maintenance or overhaul within the same installation unit and immediately installed on the same support again without any flight test has the status of an item that remained installed (no transfer indication must appear on the Log Card). If different, a technical work sheet must be issued (follow-up sheet) and the Log Card must be filled. Anomalies detected during technical cross-acceptance of the equipment are not recorded on the Log Card,
2. only the information required for the customer must appear on the Log Card,
3. bench tests of the equipment item and installations (removals) are not taken into account on the Log Card.

- Unit or company:
  indicate the logo of the unit, factory or company responsible for the transfer of equipment or the performance of operations.
- Date:
  indicate the transfer or operation date.
- Helicopter version and serial number:
  indicate the support on which the equipment item is installed (helicopter type, version and serial number).
- Operations / Unit:
  the person responsible for the first installation must specify the unit used for equipment monitoring. This unit is specified in the Technical Department instructions or in the Master Servicing Manual (MSM) and can be:

1. time expressed in flight hours,
2. time expressed in months / years,
3. number of cycles,
4. operation in number of maneuvers. Specify the type of use, e.g. ditching, landing, etc.

NOTE

It is possible to monitor equipment items simultaneously at two different levels:
- *calendar time plus operation (actuator),*
- *time plus cycles (gear boxes).*

- Support:
  with the required unit, specify the age of the support on which the said equipment item is installed during service. This information is included in the technical documents of the support.
- Partial time:

1. with the required unit, specify the number of flight hours on a given support between the latest intervention and the current one,
2. partial operating time is the age difference of the support between the intervention currently recorded and the latest recorded one,
3. operating hours of equipment items affected by penalty coefficients (K Factors').

- Total time:

1. indicate the number of flight hours or operating cycles for the equipment item since it was put in service (TSN - Time Since New) and add the latest partial time to the previous total time,
2. in addition, if the equipment item is equipped with an hour counter, the number of hours displayed must be recorded immediately after the TOTAL column with the indication HC (hour counter).

- Reason for transfer / movement:

1. indicate the reason for the transfer or movement,
2. when the decision to discard the equipment item is made, the Log Card must be crossed with a red line. If the equipment item is removed, the technician who draws up the transfer or refusal document groups together the Log Cards. Qualified staff can check and fill the Log Cards.

- Confirmation:

1. when the work is completed, an inspection stamp must be applied on each line,
2. the information recorded on the Log Card by other departments than the Quality Department must include, among other things:

- the name of the entity (unit or company),
- the name of the writer in capital letters,
- the signature of the writer,
- *Figure 7* is an example of table 7 filled,
- *Figure 8* is an example of the "COMPONENT INVENTORY" table with K factors filled.

(9) Inventory of components

(*Figure 5*)

The information below indicates the contents of the additional page of the Log Card entitled "Inventory of components".

DESCRIPTION	INSTALLATION (*)			
Component reference number Description of the component	Box 1 Date of the component installation on the assembly	Box 3 Number of operating hours of the component when installed on the assembly	Box 5 Number of cycles of the component when installed on the assembly	Box 7 Version
	Box 2 Component serial number	Box 4 Number of operating hours of the assembly	Box 6 Number of cycles of the assembly	

Calculation of the total number of operating hours and / or cycles of the part:

- on the component inventory (Case 3 or 5), modify and record the number of operating hours and / or cycles of the part when installed on the mechanical assembly (e.g. at latest overhaul or repair, as required):

1. number of operating hours of the part = number of hours recorded on the Log Card + number of operating hours to be added,
2. number of cycles of the part = number of cycles recorded on the Log Card + number of cycles to be added,

- calculate the total number of hours and / or cycles of the part:

1. total number of operating hours of the part = number of operating hours of the part as calculated above + number of operating hours of the mechanical assembly on the helicopter,

2. total number of cycles of the part = number of cycles of the part as calculated above + number of cycles of the mechanical assembly on the helicopter.

LOG CARD / *FICHE MATRICULE* — **Log card no** / *Fiche no*

Follow up Sheet for new equipment/ *Fiche suiveuse Matériel neuf*

1 Material identification/ *Identification du matériel*

Name / *Dénomination*	
NATO Nomenclature / *Nomenclature OTAN*	
EUROCOPTER Part number / *Référence*	
Manufacturer's Part Number / *Référence fabricant*	**NATO Manuf code** / *Code OTAN fabricant*
Delivery configuration / *Configuration de livraison*	**Version** / *Version*
Serial number / *Numéro de série*	**Amendments** / *Amendements*
Supplier / *Fabricant*	**Typ** / *Type*

2 Contract or oder/ *Marché ou commande*

Reference / *Référence*	**Date** / *Date*
Issuing agency / *Organisme émetteur*	**KIT No** / *No ou lot*
Contractor / *Fournisseur*	**Address** / *Adresse*

3 Guarantee/ *Garantie*

Equipment / *Matériel*	Date of delilvery / *Date de livraison*	Guaranteed storage period / *Durée garantie de stockage*	Service date / *Date de mise en service*	Guarantee operation period / *Durée Garantie de fonctionnement*

4 Special information / *Renseignements particuliers*

Appendix to table4 / *Annexe au tableau 4*	YES / *OUI* ☐ NO / *NON* ☐	**No of sheet** / *Nb de page*	:
Inventory of lifed components / *Inventaire des pièces à durée de vie*	YES / *OUI* ☐ NO / *NON* ☐	**No of sheet** / *Nb de page*	:
Transfer sheet / *Fiche Matricule de Transfert*	YES / *OUI* ☐ NO / *NON* ☐	**No of sheet** / *Nb de page*	:

Operating limit / *Limite de fonctionnement*	Life limit / *Limite de vie*	ATA

5

Contractor / *Unité ou société*	Date / *Date*	Aircraft Version and S/N / *Version et No Appareil*	Operation / *Fonctionnement*			Certification/ *Attestation*
			Support / *Support*	Partial / *Partiel*	Total / *Total*	
						Manuf/Receipt* / *Fab/Réception* Depreservation* / *Destockage*
						Pound.Overhaul* / *V.P* Filling* / *Montage*

6 Modification and Service Bulletin checking
Contrôle d'execution des modifications et des Services Bulletins

No. / *Numero*	Type of modification / *Nature de la modification*	Performing unit or contractor / *Unite ou société d'exécution*	Date of embodiement and inspection stamp / *Date d'exécution et tampon de contrôle*

*Delete as necessary/Rayer la mention inutile

EUROCOPTER F 1040A

Figure 1

7

Successive status and minor/major maintenance and overhaul operations

Positions successives et opérations d'entretien et de remise en état mineures et majeures

Contractor *Usine ou société*	Date *Date*	Aircraft Version and S/N *Version et N° d'appareil*	Operations / *Fonctionnement*						Reason for transfer (code and symptoms) · Accomplished work · Replaced parts *Motif du transfert (code et symptômes) · Travaux effectués · Pièces changées* **Successive status before A/C delivery** **See front page of table 5** *Opérations successives avant livraison de l'appareil* **Voir recto tableau 5**
			Unit/*Unité* : Support *Support*	Partial *Partiel*	Total *Total*	Unit/*Unité* : Support *Support*	Partial *Partiel*	Total *Total*	

Figure 2

6. MODIFICATION AND SERVICE BULLETIN CHECKING /
Contrôle d'exécution des modifications et des Services Bulletins

Log Card Page :__
Fiche page

Type *Nature*	Modification- / Bulletin No. AD / LTA *Modifications- / Bulletins No AD / LTA*	Titel *Intitulé*	**Performing unit or contractor** *Unité ou société d'exécution*	**Date of embodiement and Inspection stamp** *Date d'exécution et tampon de contrôle*

EUROCOPTER F 16-04A

Figure 3

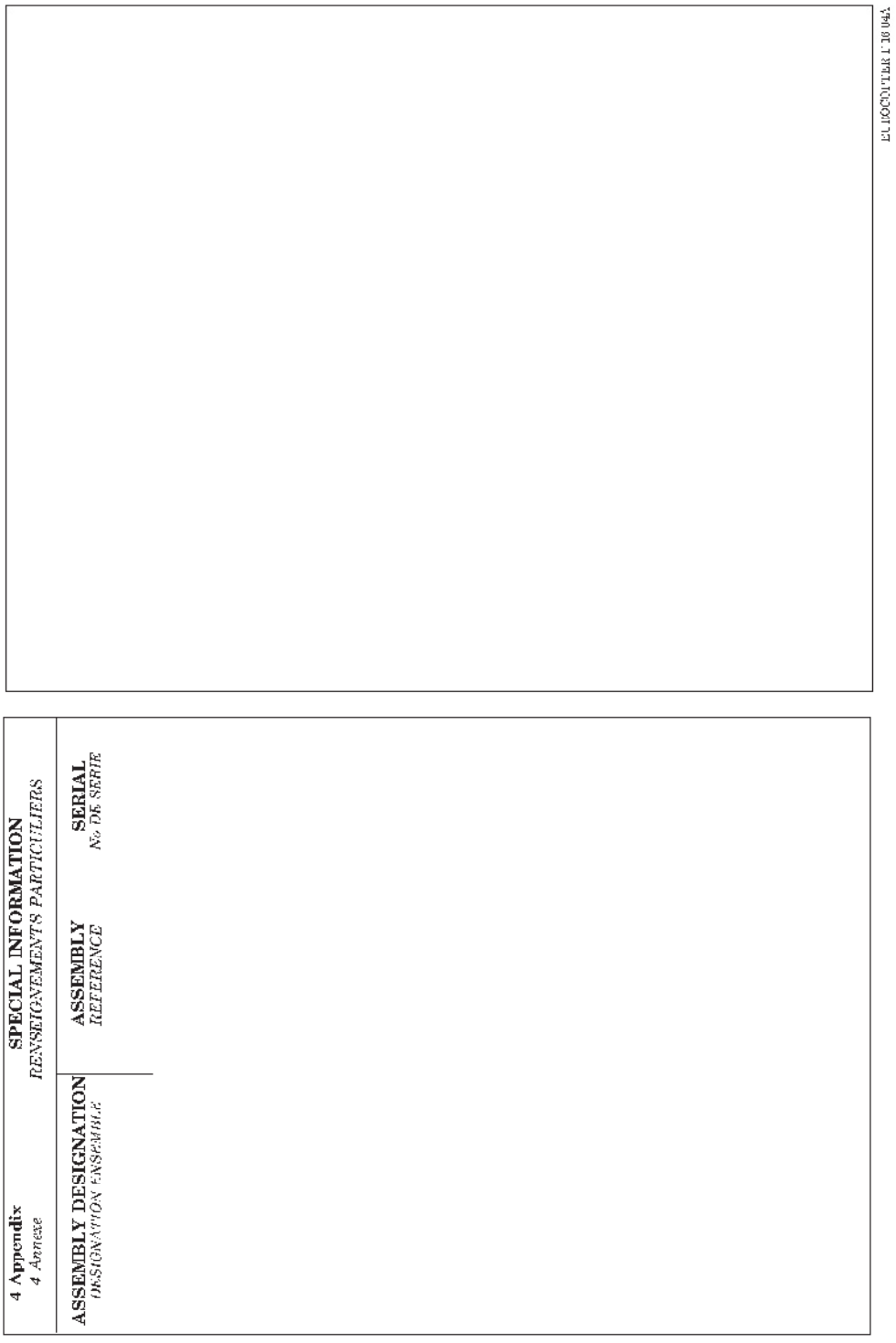

4 Appendix
4 Annexe
SPECIAL INFORMATION
RENSEIGNEMENTS PARTICULIERS
ASSEMBLY DESIGNATION
DESIGNATION ENSEMBLE
ASSEMBLY
REFERENCE
SERIAL
No DE SERIE

Figure 4

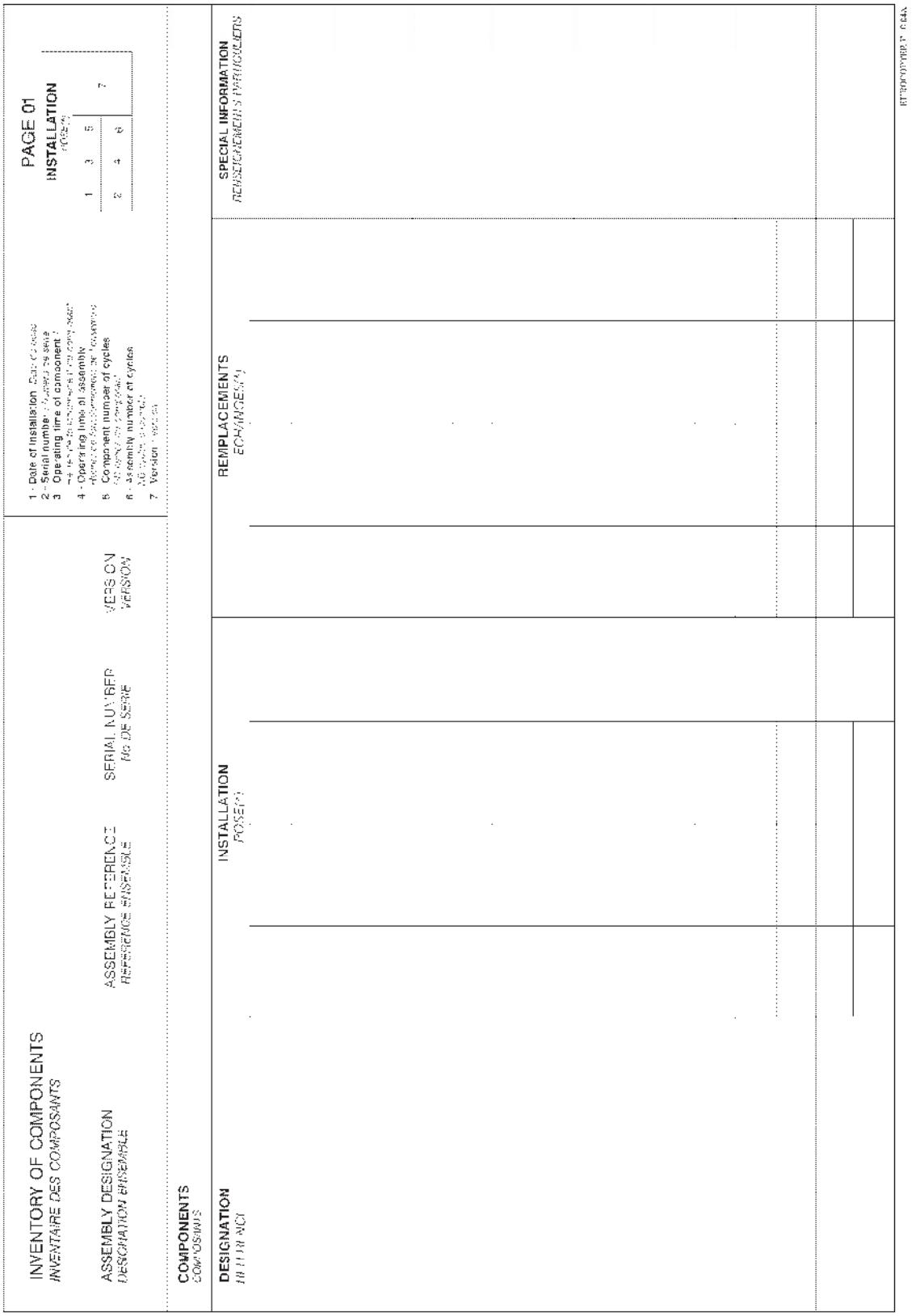

INVENTORY OF COMPONENTS
INVENTAIRE DES COMPOSANTS
PAGE 01
INSTALLATION
ASSEMBLY DESIGNATION
DESIGNATION ENSEMBLE
ASSEMBLY REFERENCE
REFERENCE ENSEMBLE
SERIAL NUMBER
NO DE SERIE
VERSION
VERSION
1 - Date of installation
2 - Serial number
3 - Operating time of component
4 - Operating time of assembly
5 - Component number of cycles
6 - Assembly number of cycles
7 - Version
COMPONENTS
COMPOSANTS
DESIGNATION
INSTALLATION
POSITION
REMPLACEMENTS
ECHANGES N°
SPECIAL INFORMATION
RENSEIGNEMENTS PARTICULIERS

Figure 5

Traitement des Fiches Matricules

Application for Log Cards duplicates

Demande de duplicata de Fiche Matricule Equipement

(1 application by product / 1 demande par produit)

Mandatory Informations / ***Renseignements obligatoires***

Requestor / *demandeur:* ..... Title / *fonction:* .....

Contact: ..... E-mail: .....

Address / *Adresse:* .....

.....

Declaration of honour / ***Attestation sur l'honneur***

I, the undersigned, *je soussigné* ..... attest to be the owner of the following part, *atteste être le propriétaire du produit suivant :*

P/N : ..... S/N : ..... ICU: ..... join copy of Airbus Helicopters Declaration of Conformity

at a present status: New ☐ In operation ☐ Unserviceable ☐

As owner I commit myself to update the log card with its history part. *En tant que propriétaire je m'engage à mettre à jour la FME avec son suivi d'historique produit.*

By providing a duplicated log card, Airbus Helicopters is not committed on the validity of the information that is reported and remain the sole responsibility of the owner. The document requested do not substitute for the overall operations to setting compliance mandatory.
Airbus Helicopters, *lors de la fourniture d'un duplicata, ne s'engage en rien sur la validité des informations qui sont à y reporter et qui restent de la seule responsabilité du propriétaire. Le document demandé ne se substitue pas à l'ensemble des opérations de mise en conformité obligatoires.*

Name, nom:	Signature:	Date:

Airbus Helicopters - **Quality Material Support & Logistics Dpt**

Service Request N°: .....

Status / statut : ☐ CLEARANCE / SOLDÉ ☐ REJECTED / REFUSÉ

If stanc by / Si en attente: .....

Name / nom:	Signature:	Validation Date / date de validation:

Log Card duplicate to be addressed by / Duplicata de la FME à adresser par ..... to / à .....

Figure 6

FILLING THE LOG CARD

RENSEIGNEMENT DE LA FME

7	Succesive status and minor/major maintenance and overhaul operations Positions successives et opérations d'entretien et de remise en état mineures et majeures									
Contractor Unité ou société	Date Date	Aircraft Version and S/N Version et No Appareil	Operations / Fonctionnement Unit / Unité : TSO Support / Support	Partial / Partiel	TSN Total / Total	Unit / Unité : Support / Support	Partial / Partiel	Total / Total	Reason for transfer (code and symptoms) – Accomplished work – Replaced parts Motif du mouve ment (code simptômes) – Travaux effectués – Pièces changées Succesive status before A/C delivery – See front page of table 5 Positions successives avant livraison avion – Voir recto tableau 5	
Goodrich	10/02/88	//							Manufactured Fabriqué	Marque EQT
HELI AIR	15/05/88	332L2 n°2622	1000h		0h				Installation Pose	
HELI AIR	10/10/95	332L2 n°2622	3550h	2550h	2550h				Removal due to leak at the distributor Dépose pour fuite au niveau du distributeur	
Goodrich	20/12/95	//			2550h				Repaired Réparé	Marque EQT
HELI AIR	12/02/96	332L2 n°2235	4550H		2550h				Installation Pose	
HELI AIR	12/01/08	332L2 n°2235	4980H	430h	2980h				Removal due to end of TBO Dépose pour limite de potentiel	
Goodrich	25/06/08	//		0h	2980h				Overhaul Révision générale	Marque EQT

Lieu d'intervention Location of the maintenance operation

Date d'intervention Date of the maintenance operation

Heures depuis dernière RG Hours since last Overhaul

Heures depuis neuf (note 1) Hours since new (note 1)

Intervention réalisée Work performed

Marque de contrôle Inspection stamp

Rajouter le trait rouge uniquement si RG demandée Add the red line only if Overhaul required

Note 1: If TSN is unknown => Indicate «unk» only if the equipment has no DDV defined in the PRE.
Nota 1: Si le TSN est inconnue => Mettre «unk» à condition que le matériel n´a pas de DDV définie dans le PRE.

Caution: This line must be filled by the repairer.
Attention: Cette ligne doit être renseignée par le réparateur.

7	Succesive status and minor/major maintenance and overhaul operations Positions successives et opérations d'entretien et de remise en état mineures et majeures								
Contractor Unité ou société	Date Date	Aircraft Version and S/N Version et No Appareil	Operations / Fonctionnement Unit / Unité : Support / Support	Partial / Partiel	Total / Total	Unit / Unité : Support / Support	Partial / Partiel	Total / Total	Reason for transfer (code and symptoms) – Accomplished work – Replaced parts Motif du mouve ment (code simptômes) – Travaux effectués – Pièces changées Succesive status before A/C delivery – See front page of table 5 Positions successives avant livraison avion – Voir recto tableau 5
NHV	01/01/19	5008	1000	--	0				Installation on 5020 Pose sur 5020
NHV	01/01/20	5008	2000	1000	1000				Removal from 5020 Dépose du 5020
NHV	01/06/20	5010	0	--	1000				Installation on 5021 Pose sur 5021
NHV	01/01/21	5010	1000	1400	2400				Removal from 5021 Dépose du 5021

- Penality factors
  Facteurs de pénalité
- Partial ≠ Support at removal – Support at installation
  Partiel ≠ Support à la dépose – Support à la pose

No need to mention the panality factor

- No penality factors
  No facteurs de pénalité
- Partial = Support at removal – Support at installation
  Partiel = Support à la dépose – Support à la pose

Figure 7

Part with sub components – Example with an epicyclic module
Pièce avec sous–composants – Exemple du module épicycloidal

INVENTORY OF COMPONENTS
INVENTAIRE DES COMPOSANTS

1 – Date of installation Date de pose
2 – Serial number Numéro de série
3 – Operating time of component / Heures de fonctionnement du composant
4 – Operating time of assembly / Heures de fonctionnement de l'ensemble
5 – Component number of cycles / NB cycles du composant
6 – Assembly number of cycles / NB cycles ensemble
7 – Version /Version

PAGE 01

INSTALLATION POSE(*)			
1	3	5	7
2	4	6	

ASSEMBLY DESIGNATION DESIGNATION ENSEMBLE	ASSEMBLY REFERENCE REFERENCE ENSEMBLE	SERIAL NUMBER No DE SERIE	VERSION VERSION

COMPONENTS
COMPOSANTS

DESIGNATION REFERENCE	INSTALLATION POSE(*)				REMPLACEMENTS ECHANGES(*)				SPECIAL INFORMATION RENSEIGNEMENTS PARTICULIERS
Conical housing Carter conique	01/01/19	1000	--						
	M121	0	--						
ROTOR ACTUATOR BRACKET Ferrue servo commande	01/01/19	1000	--		01/01/20	1900	--		Fh at assembly removal, with penality factor application Heures de vol à la dépose de l'ensemble, avec application de facteur de pénalité
	MGPA112	0	--		MGPA112	800	--		
Planet gear carrier Porte satellite	01/01/19	1000	--		01/01/20	2200	--		Fh at assembly removal, with K factor application Heures de vol à la dépose de l'ensemble, avec application de facteur K
	M321	0	--		M321	800	--		

Proposal

- Use the "replacement" area to indicate the FH with penality factors
  Indiquer les Heures de vol avec facteurs de pénalité dans la zone "Echanges"

Figure 8

GUIDE

CREATING AND UPDATING THE UNIQUE ENGINE LOG BOOK

REFERENCE-VERSION :	" OSR_008264-6 (U441) "
PROPRIETARY PROCESS :	" SRV-05-Maintain, Repair and Overhaul products""
PROPRIETARY ORGANIZATION :	" D2S/MRO/I "

PURPOSE :

This guide describes the rules to be applied to create and / or update the Safran Helicopter Engines engine log book and exchangeable components log cards (FMFE).

SCOPE :

This guide applies to any Safran Helicopter Engines log book accompanying an engine:

- being manufactured at Safran Helicopter Engines or in a Safran Helicopter Engines -approved manufacturing Center.
- returned for maintenance to a Safran Helicopter Engines -approved overhaul and / or repair Center.
- undergoing a maintenance operation performed by a Safran Helicopter Engines -approved Level 1, 2 or 3 technician.
- undergoing a Level 1 and 2 maintenance operation performed by an operator in accordance with the applicable Safran Helicopter Engines maintenance documentation.

Applicable documents required to perform tasks hereafter are linked to this document through GEODE, and by consequence are listed on the front page:

- *Output documents of the process/activity described in the document (template, list,…)*
- *Documents of lower level giving details of activities or process presented in the document (guide, instruction,…).*

The procedures for completing the electronic engine logbook are described in the guide 008389 (U797).

TABLE OF CONTENTS

Note: If a chapter is not necessary, keep it and mention “not applicable”.

LIST OF PICTURES

1. PROCESS

GENERAL

Pages should not be removed from the engine log book.

Documents shall always be completed in English or possibly in French **(Depending on the specific Protocol/Order, e.g. MCO).**

For certain engine families, boxes or columns are crossed out. They need not be completed.

No blank page is admitted. When a page is blank, write ”PAGE INTENTIONALLY LEFT BLANK”.

The back of the attached pages (Certificates of conformity, release documents, test sheets, others) must also bear this mention (printed page or stamp).

In all sections of the log book and the log cards (FMFE only), all pages containing a “U” (e.g. Page A4/U/1 or FMFE 3/U) are for use by the operator. The remaining pages are not to be modified by the operator and /or the Maintenance technician.

No sheet should be stapled or glued to another sheet.

DATES

The format dd mmm yyyy has to be used in the whole Log Book. mmm is the English abbreviation of the month.

SIGNATURES AND VISAS

All the boxes Signature and Visa have to include both the signature and the stamp.

SERIAL NUMBERS

To be entered from the identification plate. The non-significant zeros are not written. The suffix (eg TEC) makes part of the Serial Number and is written.

HOURS, CYCLES AND CREEP DAMAGE

General rule:

All notations in the Engine Logbook are in hundredths, for Hours, for Cycles and for Creep damages. Not for OEI. .

- For Hours and Hundredths
- For the cycles

For the value 0, note 0.00. The decimal separator is a dot (.).

- Rules for Hours counters:

  All notations in the Engine Logbook at delivery are in **Hours and Hundredths**.

  Operators and repairers are requested to enter meter data in the Engine LogBook and Registration LogCards with Hours and Hundredths with 2 decimal places.

  Rounding is prohibited.

  The decimal separator is a dot (.).

  Therefore, all the notations at receipt of the LMU and registration Logcards will be interpreted in hours and hundredths.

  For example, 100h49 100: 49 100.49 100_{49} and 100.49 will be interpreted as 100.49

- Rules for Cycles counters:

  All notations of Cycles in the Engine Logbook at delivery are in **Hundredths**.

  Operators and repairers are requested to enter meter data in the Engine LogBook and Registration LogCards with Hours and Hundredths with 2 decimal places.

  Rounding is prohibited.

  The decimal separator is a dot (.).

  For example: 67.80 82.00 0.00

When the cycles are not known, write “UNKNOWN” or “N/K” in the box.

CREEP DAMAGE: For creep damage, the rule applies whether it is a percentage or a gross value without a unit.

Creep Damage and hundredth of creep damage without rounding off with 2 decimal places for percentage or point counts.

OEI: see next paragraph

OEI Rating

The OEI abutment or availability are recorded:

When the abutment is more than 1 min : in minutes and seconds ; record m min ss seconds or m min ss s . ex: 10 min 03 seconds or 10 min 03 s.

When the abutment is less than 1 min : in seconds only ; record ss seconds or 05 s. ex: 05 seconds 05 s.

Note « / » for OEIs that do not exist or of which limit values do not exist (see Appendix 3 for OEI designation.)

The values run are expressed in seconds only.

The values in seconds are recorded without decimal.

CALENDAR LIMIT

The calendar limit is entered in years and months. For x years and n months, enter x y, n m. Example: For 5 years and 6 months, enter 5 y, 6 m.

THOUSANDS

The thousands are entered with no separator

DUPLICATION OF DOCUMENTS ACCOMPANYING THE ENGINE

In view of the registration of a notice of loss, theft or destruction of a document accompanying the engine (LM, EASA Form One, FMFE, FM) by a customer to its relevant Authority and with DGAC's approval, Safran Helicopter Engines, and Safran Helicopter Engines only, may issue the following documents on written request from the customer:

A photocopy of each FMFE for the last maintenance operation performed at Safran Helicopter Engines, bearing the bilingual stamp "RECOMPILED AT Safran Helicopter Engines ON……./RECONSTITUE A Safran Helicopter Engines LE …….", delivered by the authorized inspection authority. The box "Manufacturer / Approved Repairer" is signed and dated with the date on which the FMFE was recompiled, by the authorised inspection authority. The box "The relevant Authority" is signed and dated with the date on which the recompiled FMFE was released, by the inspector authorised by the competent Authority

A new engine log book.

A Safran Helicopter Engines Log Book is issued by the authorised inspection authority with the indication "DUPLICATA CONFORMING TO THE ORIGINAL, DATED … / DUPLICATA CONFORME A L'ORIGINAL, ETABLI LE …".

It is completed if necessary by the Repair Center with the maintenance pages from the maintenance work file of the last maintenance operation performed at the Repair Center. The LM completed with the maintenance pages for the last maintenance operation performed at Safran Helicopter Engines is approved by the RC who applies the bilingual stamp, "RECOMPILED AT Safran Helicopter Engines ON……./RECONSTITUE A Safran Helicopter Engines LE ……." on each page.

DOCUMENT WITH MISTAKES

This relates to a mistake found after shipment of the material by a Safran Helicopter Engines approved new production / repair or maintenance center.

The page of the Log Book or the Log Card is issued by the inspector authorized by the competent Authority, as follows:

- Ask the customer to cross in diagonal the front and the back of the old page and write : « PAGE DELETED BECAUSE OF A MISTAKE - REFER TO NEW PAGE EDITED ON /PAGE SUPPRIMEE POUR CAUSE ERREUR - VOIR NOUVELLE PAGE EDITEE LE … »
- Once the logcard has been crossed out by the customer, or an email has been received confirming this action, establish and send by paper mail, for insertion by the customer or recipient, the new page indicating the words: "PAGE RE-EDITED ON… AFTER CORRECTION / PAGE REISSUED ON… FOLLOWING CORRECTION…… ". write this notice at the bottom of the reissued page (s). If the page has a front and back, write this notice at the bottom of each page.

The two pages are scanned and recorded in the computer archive of the Engine Log.Both pages are scanned in the Log Book electronic archive.

FORMAT OF THE PAGES

Log Book :

Page P1 and P2 A4 format or Letter (8,5x11) in alternative 160 g, white color
A4 format or Letter (8,5x11) in alternative, 80 g, white color

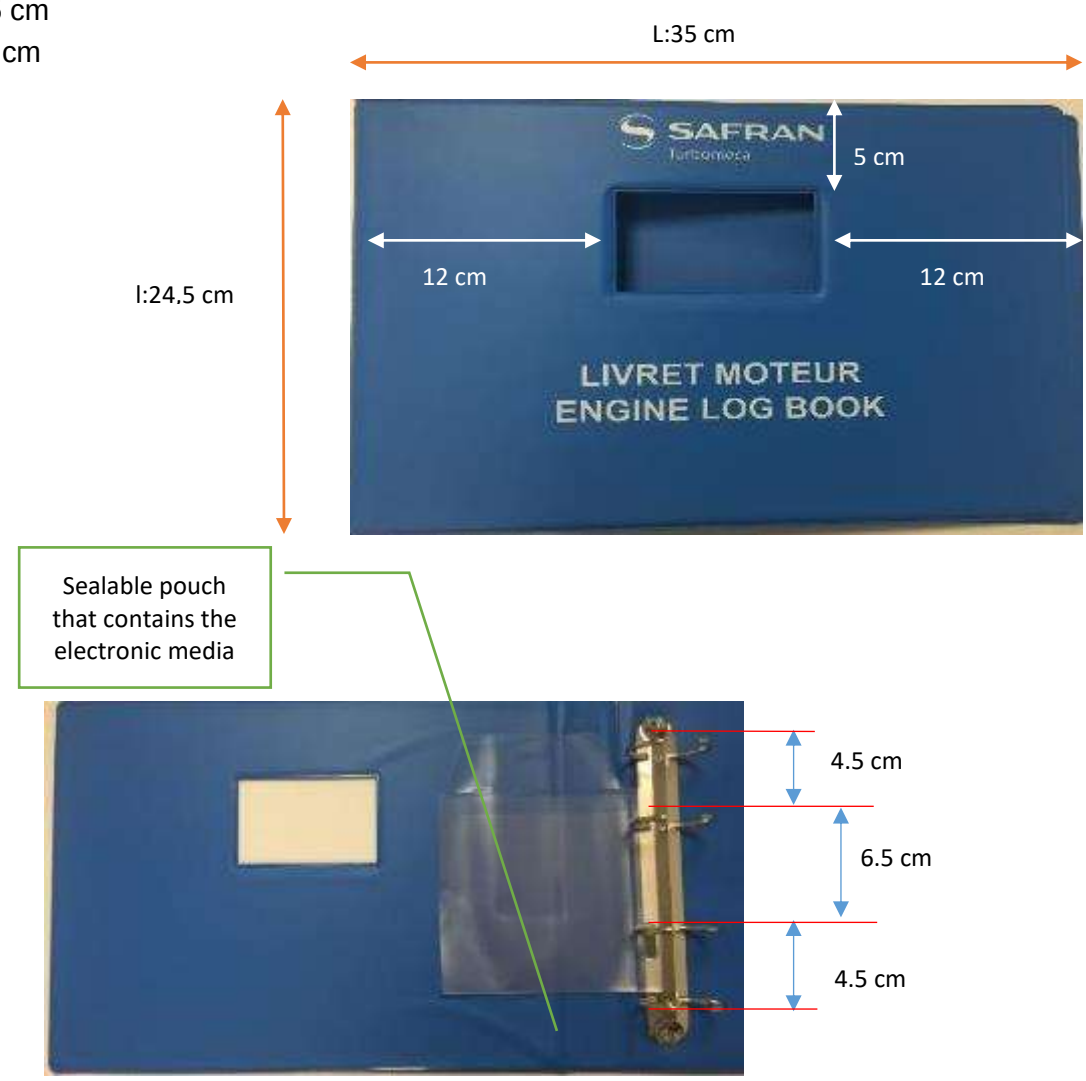
Log Card : A4 format or Letter (8,5x11) in alternative 160 g, green or white color

ENR0714:

The layout P1/1 must not be changed so that the data is always visible in the folder window.

FOLDER FORMAT

- The folder (Picture 1) containing the LMU pages will have the following format:
- Length L: 35 cm
- Width L: 24.5 cm
- Thickness: 5 cm
- Color: blue

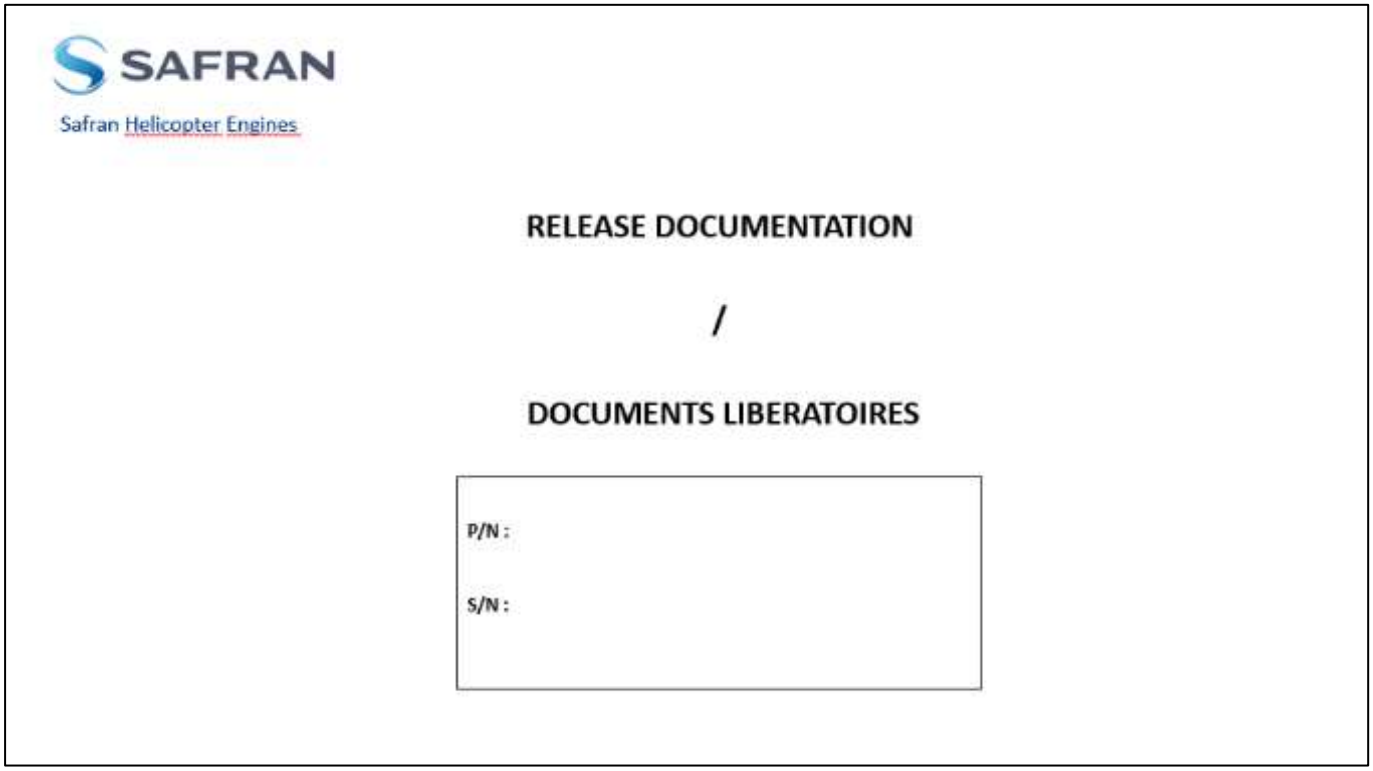


Picture 1: Folder Format

ENVELOPPE FORMAT for Realease Documentation

White Pocket
Dimension : 229x324
White renforced Kraft 120g
Printing : Black

Marking: According to the model below



PROCESSING OF FOLDERS ISSUED FROM BOOST (LM Electronic Engine Logbook transformed into LM paper)

This paragraph is for the exclusive use of Repair Centers or Maintenance Centers.

The purpose of this operation is to create a paper LM from the data issued from BOOST. It consists of recovering the scan of the old paper LM which is in BOOST and of completing the history of this LM by the edition of new FM (Log Cards) and by adding the user pages “U” edited from the information which is in BOOST.
Reminder: All originals in the digitalization process are sent to the archives following the SB dealing with paper-BOOST transformation by operators using the electronic LM.

Reconstitution of the engine Logbook:
The scanned engine Logbook and the log cards in Boost must be printed and carry the mention "DUPLICATA CONFORMING TO THE ORIGINAL, DATED ... ... / DUPLICATA CONFORME A L'ORIGINAL, ESTABLI LE ....." unless the document is the original.

The engine Logbook will be completed with the user pages “U” which will be printed from BOOST.
• Edit pages in "U" user (if entered in BOOST) A4 / U A7 / U A8 / U B3 / U C3 / U
• Edition of the appendix C from Print LMU LM2
• FMFE: edition of the FMEF3 / U and 4 / U pages. The front (page 3) is crossed out if necessary after identification of the Module. A letter is added to the number of the sheet (Ex: the complementary sheet of the FMFE N ° 2 is numbered 2A). Pages 3 / U and 4 / U will show the activities carried out in BOOST.
• FME: editions of the FME logs cards Accessory from BOOST (N ° + 1) past records.
• Section E BOOST past records will be attached at the end of the engine Logbook, after the scanned Logbook.

The LMU pages must be able to rotate freely until the end of the engine TBO. Otherwise follow the procedure and rules below:
- No change of the engine Logbook number
- No change of the cover page of the engine Logbook.

The pages move freely from the engine Logbook will then be archived at the Central Archives of Safran Helicopter Engines in Tarnos. If the engine is owned by a customer, the customer may request the return of these pages which will then be returned to the customer with the exception of FMFE and FM which will be stapled to the new FMFE and FM in order to be able to follow the accessories or the modules individually when applicable.

A red "FOR INFORMATION ONLY" stamp will be affixed to each page removed, including the blank ones. A copy of these pages will then be archived in the Safran Helicopter Engines Central Archives.

Archiving:
The authorized electronic media are the CDROM and the USB key. Put the Data Pack issued from BOOST which was used to edit the engine Logbook, in the archive for information.

DEALING WITH FULL FOLDERS

In a repair or a maintenance centre

The sheets of the Log Book shall turn freely until the end of the engine TBO.

On the contrary, follow the procedure and the rules below:

Remove the pages anterior to the last overhaul of the engine in the Safran Helicopter Engines RC or MC (SHE USA, SHE France, SHE UK, SHE Canada) scan them and put them in electronic format.

Write on the electronic media « History of Engine n° xxxx »

Attach the electronic media to the Log Book.

Supplement the log Book by blank pages

No change in the Log Book Number

No change of the Log Book front page.

Archiving

The electronic media allowed are the CDROM and the memory stick as well.

The pages withdrawn have to be archived in the “Central Archives” of Safran Helicopter Engines in Tarnos. When the engine belongs to the customer, the Customer might require the return of those pages that will then be returned to him except the Modules and Components Log Cards ; they will be stapled with the new Log Cards to be able to follow individually the accessories or modules as necessary. A red Stamp « FOR INFORMATION ONLY » will be placed on each removed page including the blank ones. A copy of those pages shall be archived in the Safran Helicopter Engines Group.

CALENDAR LIMIT OF A MODULE DELETED OR REPLACED BY A PERIODIC INSPECTION

Deletion of the calendar limit

Removal of the calendar limit of the module not concerned by a calendar visit

In a repair centre

Write "/" in the "time for the calendar limit", "date for first entry into service" and "limited date for usage" boxes on the FMFE1.

End of task

In a maintenance centre

Strike out the time for the calendar limit on FMFE 1 (box 63)

Note "Removal of the calendar limit" in the "Work performed" column of FMFE 4/U of the module concerned

Is the engine complete?

NO

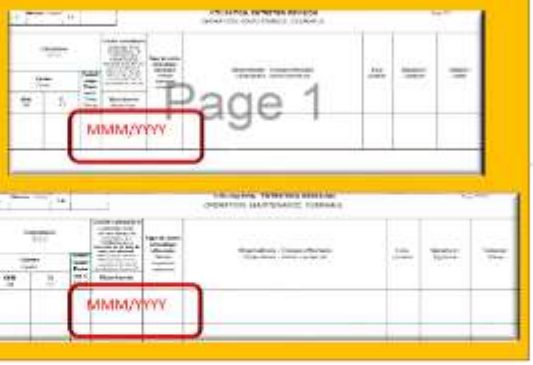
End of task

YES

All modules are affected by the removal of the calendar limit?

NO

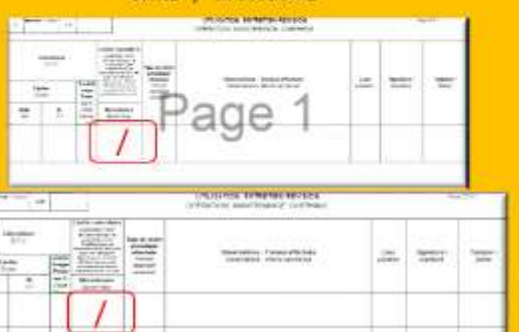
Write the calendar limit in section E



End of task

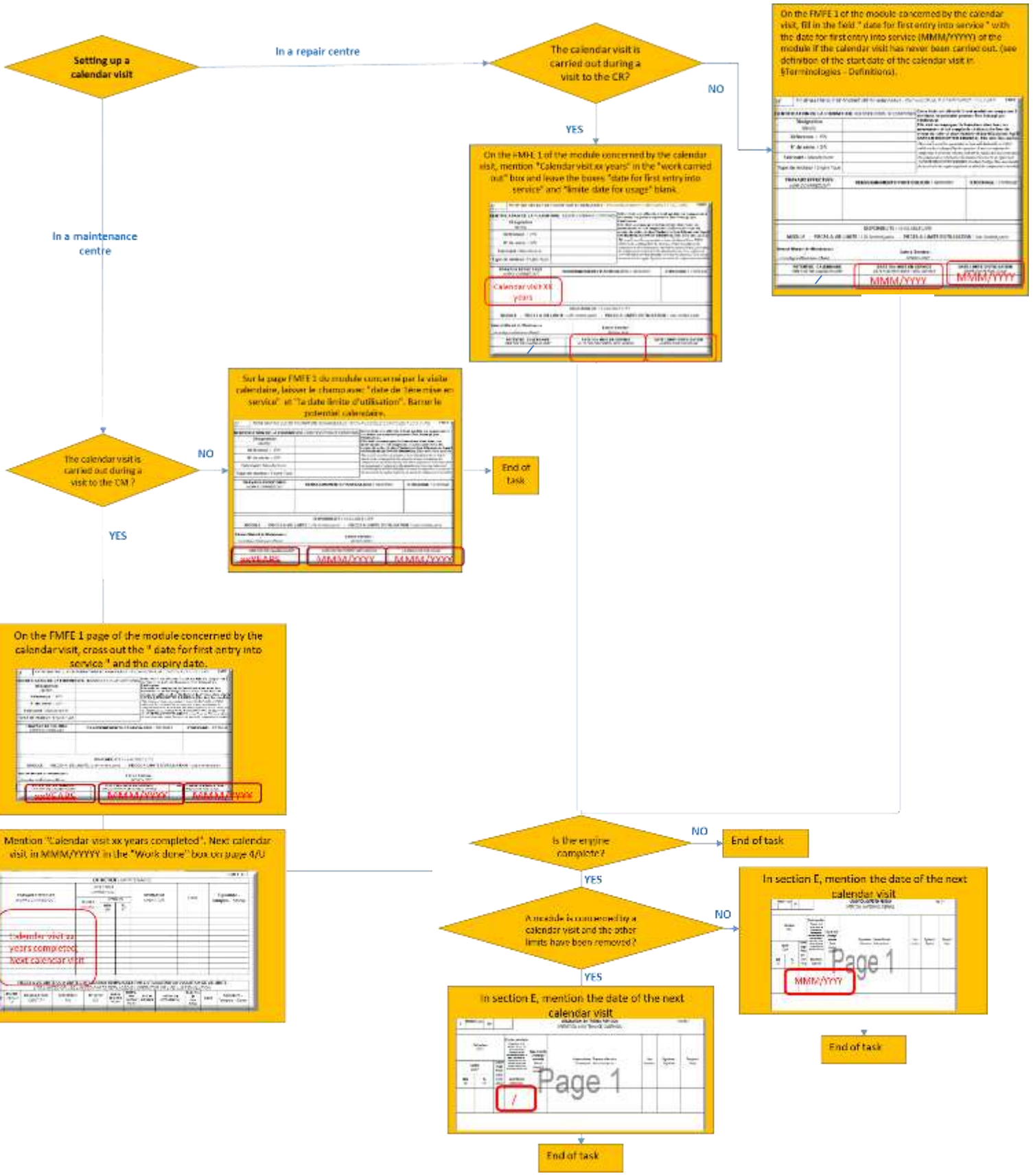
YES

Write "/" in section E



End of task

Setting up a calendar visit



ENGINES RETURNED FROM HELICOPTER MANUFACTURER OR REWORKED WHILE INSTALLED ON THE AIRCRAFT

This section applies to engines considered as new per Part21G regulation.

The engine log book updated, depending on the type of performed operation, applies to the following sections:

General

The test bench sheets are replaced if a new test is performed.

Section A

Page A 3: this page has to be replaced if the engine configuration has been modified, otherwise, complete the column « storage ».

Pages A 5 and A7 and 007764 (ENR1808): these pages have to be replaced, by including possible changes on engine or AD (Airworthiness Directive) applications, at the date of re-certification.

Section B

Page B2

If a module is replaced, this page has to be replaced.

FMFE

In any case, FMFEs have to be replaced, at the date of re-certification, by taking into account performed operations, test and possible AD applications.

Page FMFE3/U, into the « Transfers » section, all original information has to be maintained.

Section C

Page C2/1

Page C2/1 has to be replaced by adjusting as necessary removal information of the new equipment (increase of the new equipment potential within the limits of the CCT) and the updates of SL and/or MM.

Log Card

If an equipment has been replaced, remove the old Log card (write removal date at the back of the page if the old equipment has been used over the limits of CCT 6100).

Insert the new log card into the Engine Log Book with the new installation date.

List of equipment – for information

If one of the listed equipment is replaced, then this list has to be replaced at the date of re-certification.

Section E

Page E2/U/1 and E3/U/1

If the engine has been installed onto the aircraft, the first line has to be left available in order to be completed by the helicopter manufacturer.

In any case, a line has to be completed at the date of re-certification.

Into the column « Observations - Works carried out », write the reference of the “Engines Tests” CCT and the mention « RECERTIFICATION ».

Visas

All replaced engine log book pages have to be endorsed in the same way as the original documents.

ENGINES SUBJECT TO A TBO MODIFICATION

This paragraph applies to engines subject to TBO modification for complete engines, stand-alone engines or accessories. A modification of potential is notified through the update of Chapter 5 of the MM or a customized letter.

The modifications to apply to the log books depending on the nature and the level of maintenance are described below.

In the case of an empty cell in a row, enter "/"

Stand-alone modules

At the user's, in a Safran Helicopter Engines -approved Service Center or Maintenance Center

- Complete the module log card (FMFE) in Section "B" of the Log Book as follows:

  FMFE 4/U – "MAINTENANCE" Table: Record the TBO extension and the reference of the update used.

  "LLP or ULP replaced by the operator" Table

  FMFE 1: Cross out the relevant rank number

  FMFE 4/U : Record this same number and the new limit for each part subject to a change

  FMFE 4/U– "REMARKS" Table

Record the new limits and the new resulting availability

In a Safran Helicopter Engines -approved Repair Center

- Issue a new edition of the module Log Card (FMFE)

Complete engine

At the user's, in a Safran Helicopter Engines -approved Service Center or Maintenance Center

- Complete the log cards of the modules in section "B" of the engine log book as per paragraph (a) above (for the log cards not already been modified for a stand-alone module)

Complete the following sections in the engine log book as follows:

- **Section E - "OPERATION, MAINTENANCE, OVERHAUL" tab**

Record the application of the normal or temporary update of the Maintenance Manual

- **Section E - "ENGINE RUNNING HOURS" tab**

Complete the "Engine running hours" table, taking the new engine limits into account

In a Safran Helicopter Engines -approved Repair Center

Issue complete sections B and E

Accessories listed in section C (HMU, Fuel Control Unit, etc.)

Isolated accessories: Modify the Log Card: Refer to Guide U015

Accessories installed on an engine

Section « C »

Page C2/1 Cross out the relevant rank number

Page C3/U: Record this same number and the new limit for each equipment subject to a change

Section E - "OPERATION, MAINTENANCE, OVERHAUL" tab

Record the application of the normal or temporary update of the Maintenance Manual.

CONTENTS OF THE LOG BOOK

The engine log book comprises:

1.1 – INTRODUCTION

1.2 – SECTION A: INSPECTION CERTIFICATE

1.3 – SECTION B: MODULES RECORD

1.4 – SECTION C: COMPONENTS RECORD

1.5 – SECTION D: STATUS OF AVAILABILITY

1.6 – SECTION E: OPERATION, MAINTENANCE AND OVERHAUL – INCLUDES A SECTION DEDICATED TO RTM322

The table of the engine log book pages to be created / updated depending on the context: New Equipment, Overhaul / Repair / Service Center and/or Level 3, Level 2 maintenance, Operator and/or Level 1 maintenance, is given in **Appendix 1**.

The table of the reference documents containing the information necessary to complete the pages to be created / updated is given in **Appendix 2**.

The table of minimal characteristics is presented in **Appendix 3**.

1.1. INTRODUCTION

The introduction comprises of five pages, P1, P2, P3 and P4 as well as the release documents and test sheets:

Title page: page P1/1: Picture 2

The title page is completed:

For new equipment: by the Safran Helicopter Engines -approved manufacturing plant producing the new engines.

For repaired or overhauled equipment: by the Safran Helicopter Engines -approved repair or overhaul center if a new engine log book is issued or if the engine is converted into a new variant.

(1) Manufacturer: Enter the name of the manufacturer (Safran Helicopter Engines).

(2) Category: Enter the engine category (e.g. Turboshaft Engine for helicopter engines).

(3) Serial Number: Enter the S/N of the engine.

(4) Family: Enter the name of the engine family (e.g. ARRIEL).

Type: Enter the engine type (e.g. 1 or 2).

Variant: Enter the engine variant (e.g. B, C, S etc.).

Version: Enter the engine version (e.g. 1, 1A, 2 etc.). Enter "/" if not applicable.

(5) Engine log book No.: Enter the number of the engine log book.

For new equipment: Enter 1.

For repaired or overhauled equipment: Complete if a new engine log book is issued (Enter No. 2, 3, etc.).

(6) Established at:

For new equipment: Enter the place where the engine log book is created.

For repaired or overhauled equipment: Enter the place where the engine log book is created if the engine log book no. has been incremented (creation of a new Log Book, no. 2 or 3, etc.).

(7) Date: Enter the date at which the engine log book is created

(8) Engine life consumed upon starting the log book

For new equipment, if the bench test hours allowed (as per CCT 6100) are not exceeded, enter "0", otherwise enter the difference: (hours run – hours allowed).

For repaired or overhauled equipment, if a new engine log book is created, enter the total engine hours.

(9) Signature: Signed by the authorised inspector: signed and stamped.

(10) Type Certificate N°: enter the type certificate as seen on the engine identification plate.

The cover page is laminated or protected by a plastic page positioned in front of page P1/1.

Pages P2 and P3:

Pages P2 and P3, GENERAL INSTRUCTIONS, contain general information, instructions and recommendations for completing the engine log book.

Page P4: COMPOSITION AND CONTENT:

Page P4 gives the number of pages for each section of the engine log book and the date at which they were compiled.

Release Document

All release documents will be inserted in the “document Libératoire/ release documentation” envelope after page P2 and before page P3, in particular:

the EASA Form One/FAA 8130-3 or equivalent

release certificate and/or the statement of conformity

Modular engine :

test bench sheet 007213 (ENR0229) at the Log Book introduction after Page P4

test bench sheet 007214 (ENR0230) linked to the Log Card of the gas generator module by a paper clip.

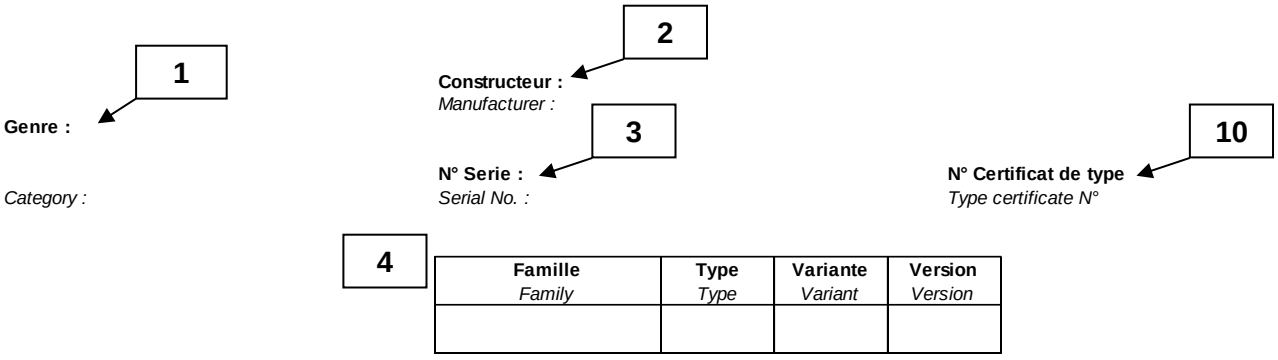
Non Modular engine:

test bench sheets 007213 (ENR0229) and 007214 (ENR0230) at the Log Book introduction before page P4.

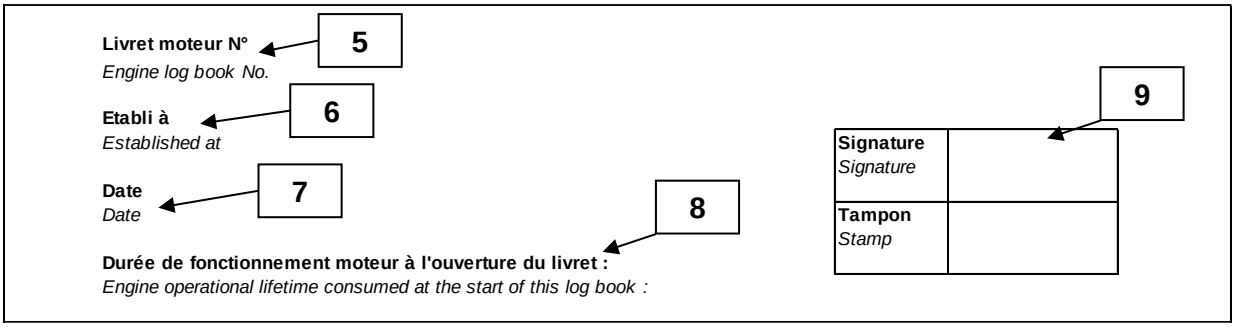
The update of the Log Books lat the time of a gas generator module exchange is performed as follows :

Withdraw from the Log Book the test bench sheet 007214 (ENR0230) of the replaced module and attach it to the Module Log Card.

Insert in the Log Book the test bench sheet 007214 (ENR0230) of the replacing module



La durée de fonctionnement ci-dessous est celle du moteur complet suivi comme tel par son numéro individuel ; elle peut être différente des heures de fonctionnement de chacun des modules constitutifs éventuels.
The engine operational lifetime below is that of the complete engine followed up as such by its serial number; this lifetime can differ from the operating hours of each of the possible constitutive modules.



Picture 2: P1/1 Page

1.2. SECTION A: INSPECTION CERTIFICATE

Section A comprises the following pages:

Page A1: Title page.

Page A2: Information about section A.

1.2.1. PAGE A3/1: INSPECTION AND STORAGE CERTIFICATES:

(11) Engine: Enter the engine family / type / variant / version (e.g. Arriel 2B1A)

(12) S/N: Enter the serial number of the engine.

REMARKS:

In this area, enter:

For new production, the engine configuration number

For new production / repair and overhaul, the theoretical weight of the engine and the minor and major recordable concessions007172 (ENR0042) applied on non-modular items (Off-Module) and on items not managed using a Log Card; they are attached, as well as the personalized concessions (ENR0700 and 007351 (ENR0702)).

(13) The manufacturer/approved overhaul facility

Dated and signed by the manufacturer: signed and stamped

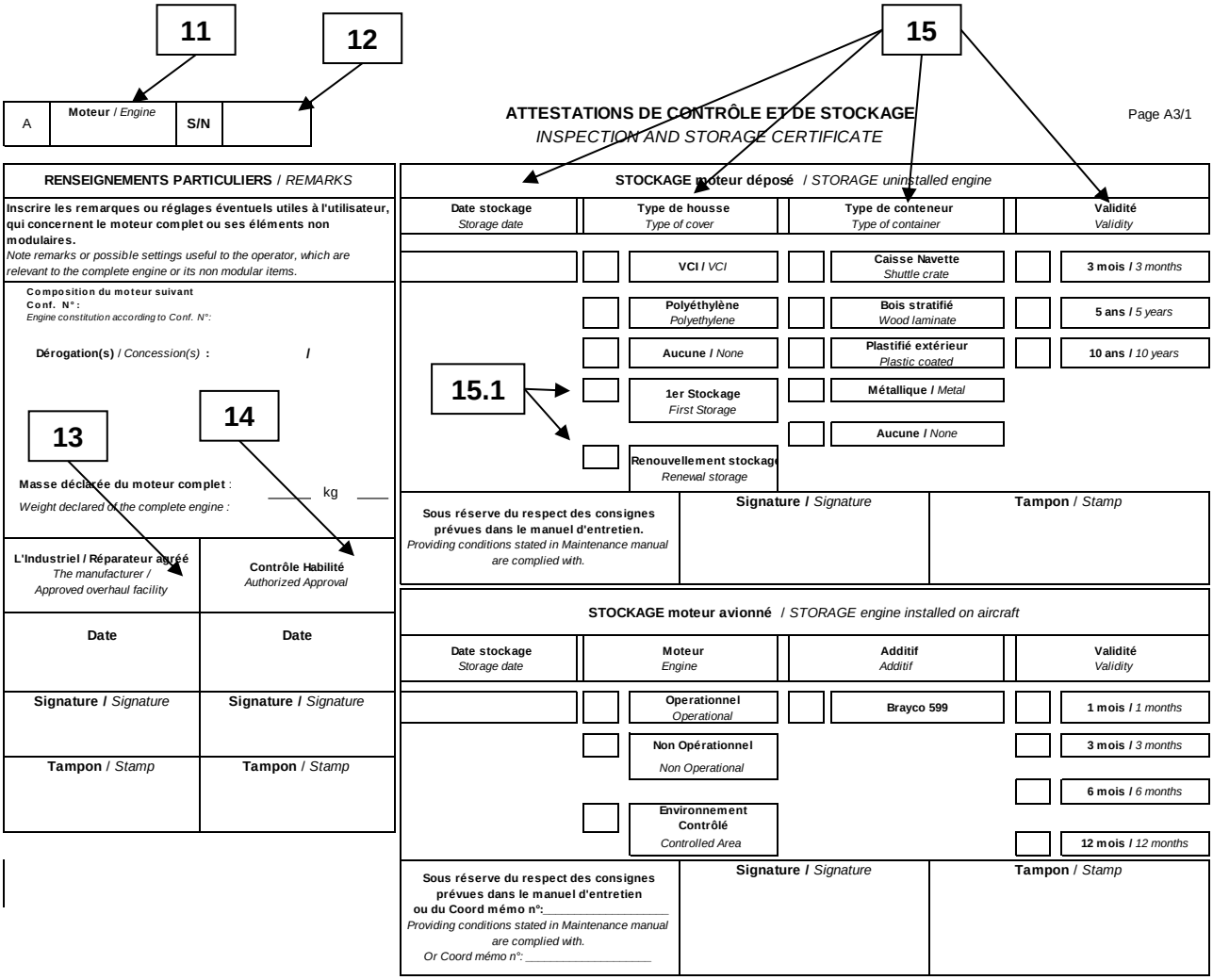
(14) Authorized approval:

Dated and signed by the authorised inspector: signed and stamped

(15) STORAGE

These columns are completed for new, repaired or overhauled equipment depending on the type of storage used for the engine.

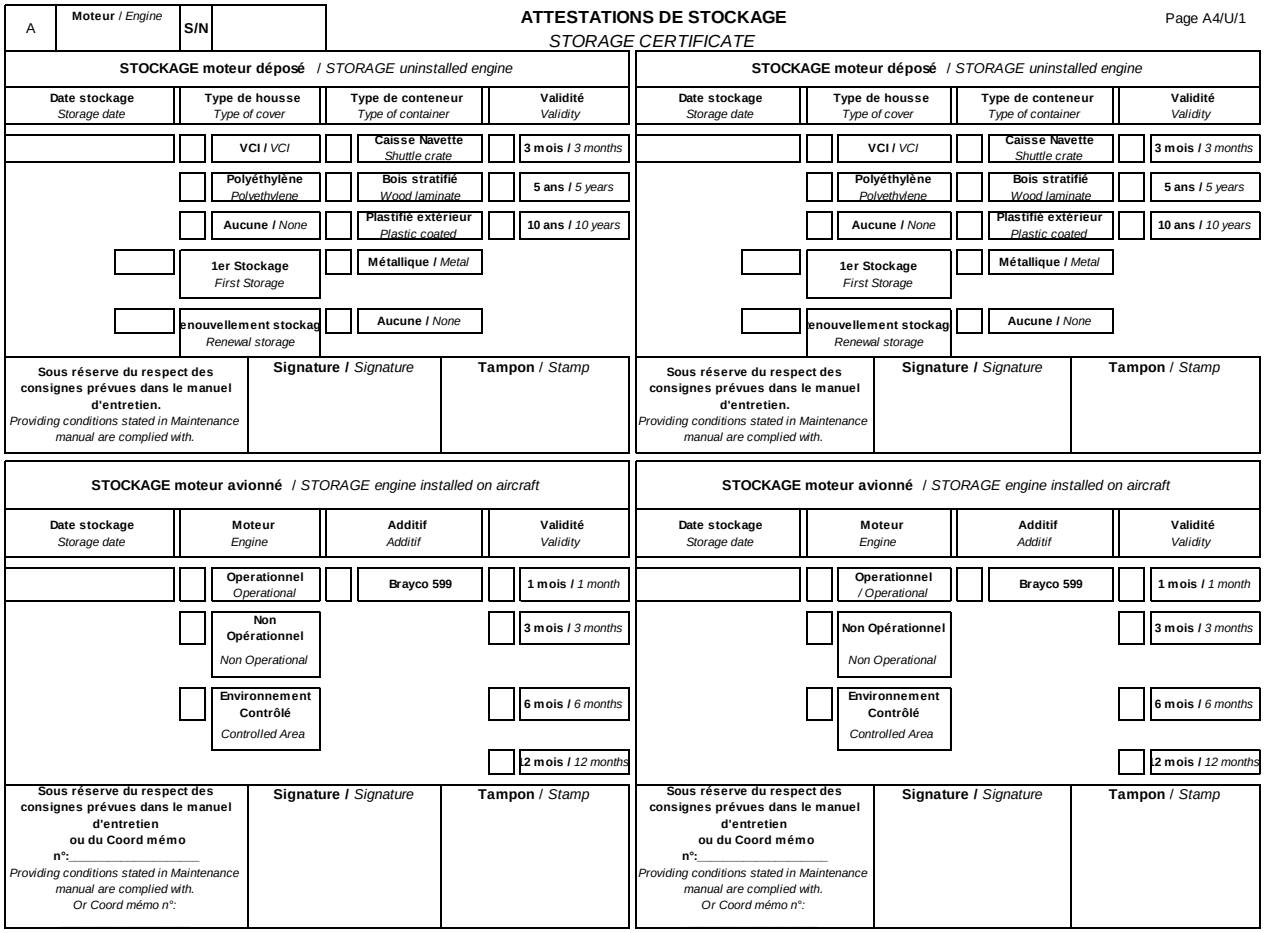
In particular, specify whether it is a 1st storage or a renewal storage (15.1)



Picture 3 : **Inspection and storage certificates**

1.2.2. PAGES A4/U/1 – A4/U/2 – STORAGE CERTIFICATES -

These pages are completed, by the operator or in a Service Maintenance Center, after each new engine storage operation.



A | **Moteur** / *Engine* | **S/N**

ATTESTATIONS DE STOCKAGE
STORAGE CERTIFICATE

Page A4/U/1

STOCKAGE moteur déposé / *STORAGE uninstalled engine*

Date stockage *Storage date*	**Type de housse** *Type of cover*	**Type de conteneur** *Type of container*	**Validité** *Validity*
	VCI / *VCI*	**Caisse Navette** *Shuttle crate*	**3 mois** / *3 months*
	Polyéthylène *Polyethylene*	**Bois stratifié** *Wood laminate*	**5 ans** / *5 years*
	Aucune / *None*	**Plastifié extérieur** *Plastic coated*	**10 ans** / *10 years*
	1er Stockage *First Storage*	**Métallique** / *Metal*	
	enouvellement stockag *Renewal storage*	**Aucune** / *None*	

Sous réserve du respect des consignes prévues dans le manuel d'entretien.
Providing conditions stated in Maintenance manual are complied with.

Signature / *Signature*

Tampon / *Stamp*

STOCKAGE moteur déposé / *STORAGE uninstalled engine*

Date stockage *Storage date*	**Type de housse** *Type of cover*	**Type de conteneur** *Type of container*	**Validité** *Validity*
	VCI / *VCI*	**Caisse Navette** *Shuttle crate*	**3 mois** / *3 months*
	Polyéthylène *Polyethylene*	**Bois stratifié** *Wood laminate*	**5 ans** / *5 years*
	Aucune / *None*	**Plastifié extérieur** *Plastic coated*	**10 ans** / *10 years*
	1er Stockage *First Storage*	**Métallique** / *Metal*	
	enouvellement stockag *Renewal storage*	**Aucune** / *None*	

Sous réserve du respect des consignes prévues dans le manuel d'entretien.
Providing conditions stated in Maintenance manual are complied with.

Signature / *Signature*

Tampon / *Stamp*

STOCKAGE moteur avionné / *STORAGE engine installed on aircraft*

Date stockage *Storage date*	**Moteur** *Engine*	**Additif** *Additif*	**Validité** *Validity*
	Operationnel *Operational*	**Brayco 599**	**1 mois** / *1 month*
	Non Opérationnel *Non Operational*		**3 mois** / *3 months*
	Environnement Contrôlé *Controlled Area*		**6 mois** / *6 months*
			12 mois / *12 months*

Sous réserve du respect des consignes prévues dans le manuel d'entretien ou du Coord mémo n°:_____
Providing conditions stated in Maintenance manual are complied with. Or Coord mémo n°:

Signature / *Signature*

Tampon / *Stamp*

STOCKAGE moteur avionné / *STORAGE engine installed on aircraft*

Date stockage *Storage date*	**Moteur** *Engine*	**Additif** *Additif*	**Validité** *Validity*
	Operationnel */ Operational*	**Brayco 599**	**1 mois** / *1 month*
	Non Opérationnel *Non Operational*		**3 mois** / *3 months*
	Environnement Contrôlé *Controlled Area*		**6 mois** / *6 months*
			12 mois / *12 months*

Sous réserve du respect des consignes prévues dans le manuel d'entretien ou du Coord mémo n°:_____
Providing conditions stated in Maintenance manual are complied with. Or Coord mémo n°:

Signature / *Signature*

Tampon / *Stamp*

Picture 4: Storage certificates

Page 007764 (ENR 1808)– APPLICATION OF AIRWORTHINESS DIRECTIVES AND SERVICES BULLETINS AT TIME OF DELIVERY

These pages are to be filled in only in new production or in repair center. The 007764 (ENR1808) will only be deployed for the ARRIEL, ARRIUS and MAKILA civil engines.

007764 (ENR1808) contains the existing DGAC Airworthiness Directives (for ADs prior to 2003), EASA and FAA, except for deleted ADs. It also lists all Bulletin Services that are not deleted, obsolete, cancelled, replaced or downgraded.

It also contains changes that are not downgraded, cancelled, abandoned, or that have "NA" or "O" status. The basic changes are a fixed list for a given variant.

The filling rules are described in the appendix of 007764 (ENR1808).

There are two fields to indicate the status of Airworthiness Directives, Bulletins Services and Modifications;

The "status" field and the "O/R" field

Code	Status	Short description
1	Non Applicable / *Not applicable*	Engine not concerned by an AD / SB (e.g.: repair to be done on a specific S/N)
2	A appliquer / *To be complie* d *with*	Engine concerned by an AD / SB, not applied during the current repair but to be done before the next defined milestone (e.g.: repair linked to calendar limit)
3	Appliqué / *Complied with*	If AD / SB was applied during the current inspection or if the inspector checked that the AD / SB had already been implemented when the engine arrived at the shop
4	Non Appliqué / *Not Complied with*	Cannot be used for AD or Mandatory SBs. To be used for check and modification SBs
B	Modification de Base / *Basic Modification*	Only used for modifications and more precisely for basic modifications, which means modifications that existed when the engine was certified

Status:

There are 5 possible choices to characterize the status of CNs, SBs and Modifications

Field O/R:

O: One-off application

R: Recurrent Application (cannot be used for modification)

/: To be used for cancelled and superseded AD or modification not linked to AD and SB

After page A4 and before page A5/1, insert page(s) of 007764 (ENR1808).

Formulaire 008957 – Maintenance operations carried out in the repair center.

This form is to be provided for all modules or complete engines repaired in a repair center. It is deployed on the ARRIEL, ARRIUS, MAKILA and RTM322 engine families. It is available under OSR or on request for outdoor centers.

The 008957 template, specific to each engine variant, is made up of two sections:

- The first section called "**Part 1. Operations carried out in a repair center**", presenting the following information (see Appendix 1):

(1) Identification of the repaired engine or module.

(2) The numbers of the reference manuals and their update dates according to which the repair work was carried out.

(3) The date of issue of the document, the stamp and the signature of the authorized inspector.

(4) For each module, we specify the type of repair (repair or overhaul).

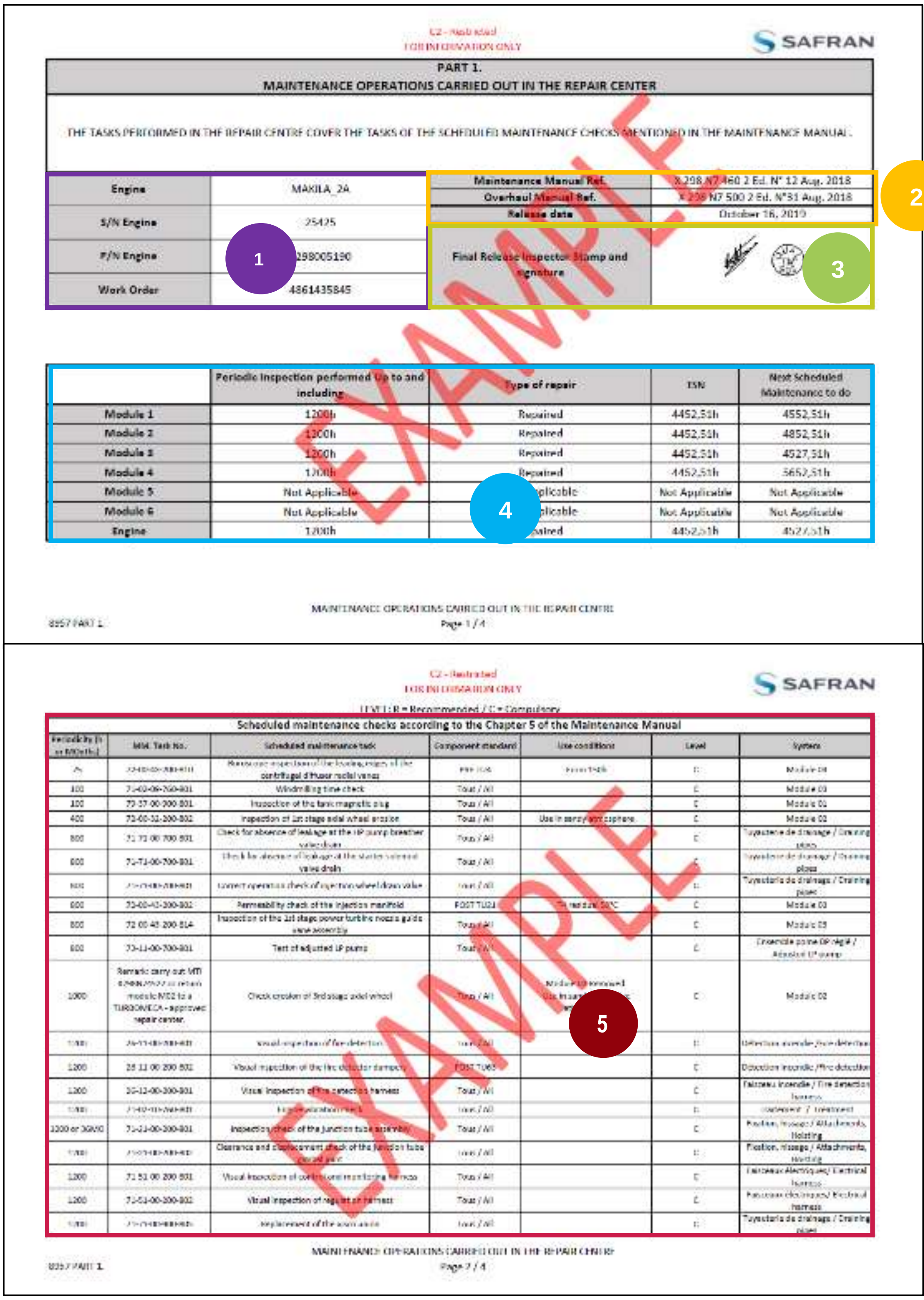
All operations have been carried out up to (and including) the periodic inspection type indicated in the table. No value is specified in the event of a module or engine overhaul. The tasks performed as part of an overhaul are however listed in (5).
The next visit to be made is calculated on the basis of the TSN added to the lowest value of Periodic Visit.
Example: The next Periodic Inspection to be carried out, after intervention in a repair center, concerning module 1 (TSN: 4452.51h) of the Makila 2A engine is at 100h. The next VP will theoretically be at: TSN 4452.51h + 100h = 4552.51h
(5) The detail of the VPs performed are given in ascending order of frequency. The document includes the number of the corresponding maintenance task and its designation, the standard of the component, the conditions of use, the level of application and the module concerned. Maintenance operations which are not applicable because the configuration of the engine is not affected by the task, are not listed in the document.

- The second section called "**Part 2: Maintenance operations to be carried out by the customer on receipt of the engine**" gives information on the maintenance operations which require the installation of the engine on the airframe and remaining to be done by the customer in order to fully validate the periodic visits mentioned in (4) (Cf. Appendix 2):

(6) Identification of the repaired engine or module,
(7) The numbers of the reference manuals and their update dates according to which the repair work was carried out,
(8) The date of issue of the document, the stamp and the signature of the authorized inspector,
(9) For each module, the type of repair (repair or overhaul) is specified. The next visit to be made is calculated on the basis of the TSN added to the lowest value of Periodic Visit.
(10) The details of the VPs performed are given in ascending order of frequency. There are also the maintenance task numbers and their designations, the standard of the component, the conditions of use, the level of application and the module concerned.

Insert the pages of template 008957 after those of 007764 (or by default, between pages A4 and A5 / 1 of the Unique Engine Logbook).

Appendix 1 : Part 1 of template 008957



C2 - Restricted
FOR INFORMATION ONLY

SAFRAN

PART 1.
MAINTENANCE OPERATIONS CARRIED OUT IN THE REPAIR CENTER

THE TASKS PERFORMED IN THE REPAIR CENTRE COVER THE TASKS OF THE SCHEDULED MAINTENANCE CHECKS MENTIONED IN THE MAINTENANCE MANUAL.

Engine	MAKILA 2A	**Maintenance Manual Ref.**	X 298 N7 460 2 Ed. N° 12 Aug. 2018
S/N Engine	25425	**Overhaul Manual Ref.**	X 298 N7 500 2 Ed. N°31 Aug. 2018
P/N Engine	298005190	**Release date**	October 16, 2019
Work Order	4861435845	**Final Release Inspector Stamp and signature**	

	Periodic Inspection performed Up to and including	Type of repair	TSN	Next Scheduled Maintenance to do
Module 1	1200h	Repaired	4452,51h	4552,51h
Module 2	1200h	Repaired	4452,51h	4852,51h
Module 3	1200h	Repaired	4452,51h	4527,51h
Module 4	1200h	Repaired	4452,51h	5652,51h
Module 5	Not Applicable	[illegible]plicable	Not Applicable	Not Applicable
Module 6	Not Applicable	[illegible]plicable	Not Applicable	Not Applicable
Engine	1200h	[illegible]paired	4452,51h	4527,51h

8957 PART 1 — MAINTENANCE OPERATIONS CARRIED OUT IN THE REPAIR CENTRE — Page 1 / 4

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SAFRAN

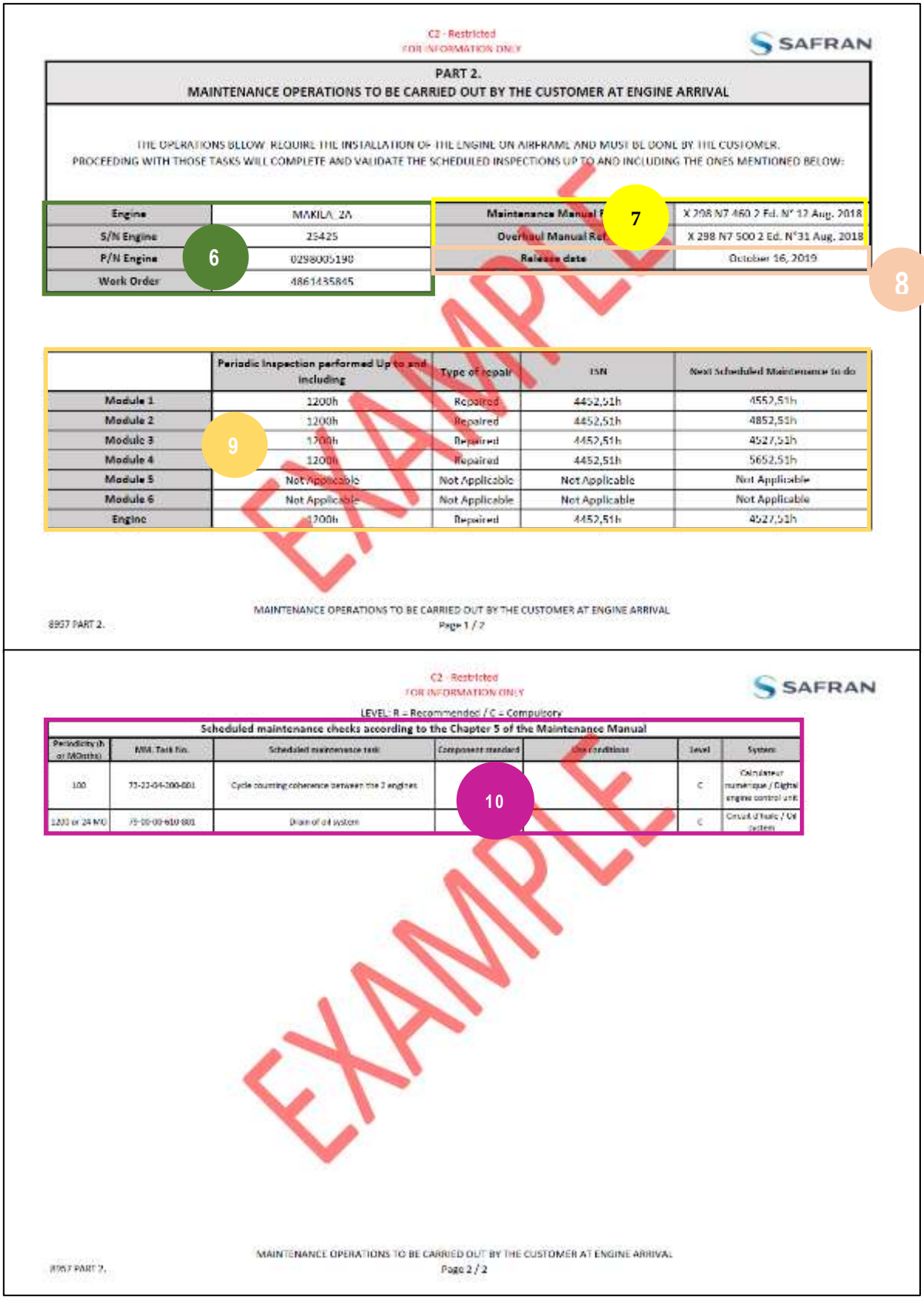
LEVEL: R = Recommended / C = Compulsory

Scheduled maintenance checks according to the Chapter 5 of the Maintenance Manual

Periodicity (h or MOnths)	MM. Task No.	Scheduled maintenance task	Component standard	Use conditions	Level	System
[illegible]	[illegible]	[illegible] inspection of the leading edges of the centrifugal diffuser radial vanes	[illegible]	[illegible]	[illegible]	Module 0[illegible]
100	71-00-06-760-801	Windmilling time check	Tous / All		C	Module 03
100	72-37-00-200-801	Inspection of the tank magnetic plug	Tous / All		C	Module 01
400	72-00-32-200-802	Inspection of 1st stage axial wheel erosion	Tous / All	Use in sandy atmosphere	C	Module 02
800	71 71 00 700 801	Check for absence of leakage at the HP pump breather valve drain	Tous / All		C	Tuyauterie de drainage / Draining pipes
800	71-71-00-700-801	Check for absence of leakage at the starter solenoid valve drain	Tous / All		C	Tuyauterie de drainage / Draining pipes
800	[illegible]	Correct operation check of injection wheel drain valve	Tous / All		[illegible]	Tuyauterie de drainage / Draining pipes
800	72-00-43-200-802	Permeability check of the injection manifold	POST TU2[illegible]	[illegible] 50°C	C	Module 03
800	72 00 43 200 814	Inspection of the 1st stage power turbine nozzle guide vane assembly	Tous / All		C	Module 03
800	73-11-00-700-801	Test of adjusted LP pump	Tous / All		C	Ensemble pompe BP réglé / Adjusted LP pump
1000	Remark: carry out MTI [illegible] or return module M02 to a TURBOMECA - approved repair center.	Check erosion of 3rd stage axial wheel	Tous / All	Module [illegible] removed Use in sa[illegible]	C	Module 02
[illegible]	[illegible]	Visual inspection of fire detection	Tous / All		[illegible]	Détection incendie / Fire detection
1200	26 11 00 200 802	Visual inspection of the fire detector dampers	POST TU65		C	Détection incendie / Fire detection
1200	26-12-00-200-801	Visual inspection of fire detection harness	Tous / All		C	Faisceau incendie / Fire detection harness
[illegible]	[illegible]	[illegible]	Tous / All		[illegible]	[illegible] / Treatment
1200 or 36MO	71-21-00-200-801	Inspection/check of the junction tube assembly	Tous / All		C	Fixation, hissage / Attachments, Hoisting
[illegible]	[illegible]	Clearance and displacement check of the junction tube [illegible]	Tous / All		[illegible]	Fixation, hissage / Attachments, Hoisting
1200	71 51 00 200 801	Visual inspection of control and monitoring harness	Tous / All		C	Faisceaux électriques/ Electrical harness
1200	71-51-00-200-802	Visual inspection of regulation harness	Tous / All		C	Faisceaux électriques/ Electrical harness
[illegible]	[illegible]	Replacement of the [illegible]	Tous / All		[illegible]	Tuyauterie de drainage / Draining pipes

8957 PART 1 — MAINTENANCE OPERATIONS CARRIED OUT IN THE REPAIR CENTRE — Page 2 / 4

Appendix 2 : Part 2 of template 008957



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PART 2.
MAINTENANCE OPERATIONS TO BE CARRIED OUT BY THE CUSTOMER AT ENGINE ARRIVAL

THE OPERATIONS BELOW REQUIRE THE INSTALLATION OF THE ENGINE ON AIRFRAME AND MUST BE DONE BY THE CUSTOMER.
PROCEEDING WITH THOSE TASKS WILL COMPLETE AND VALIDATE THE SCHEDULED INSPECTIONS UP TO AND INCLUDING THE ONES MENTIONED BELOW:

Engine	MAKILA 2A	Maintenance Manual Ref.	X 298 N7 460 2 Ed. N° 17 Aug. 2018
S/N Engine	25425	Overhaul Manual Ref.	X 298 N7 500 2 Ed. N°31 Aug. 2018
P/N Engine	0298005190	Release date	October 16, 2019
Work Order	4861435845		

	Periodic Inspection performed Up to and including	Type of repair	ISN	Next Scheduled Maintenance to do
Module 1	1200h	Repaired	4452,51h	4552,51h
Module 2	1200h	Repaired	4452,51h	4852,51h
Module 3	1200h	Repaired	4452,51h	4527,51h
Module 4	1200h	Repaired	4452,51h	5652,51h
Module 5	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Module 6	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Engine	1200h	Repaired	4452,51h	4527,51h

8957 PART 2. MAINTENANCE OPERATIONS TO BE CARRIED OUT BY THE CUSTOMER AT ENGINE ARRIVAL Page 1 / 2

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LEVEL: R = Recommended / C = Compulsory

Scheduled maintenance checks according to the Chapter 5 of the Maintenance Manual

Periodicity (h or Months)	MM. Task No.	Scheduled maintenance task	Component standard	Use conditions	Level	System
100	73-21-04-200-801	Cycle counting coherence between the 2 engines			C	Calculateur numérique / Digital engine control unit
1200 or 24 M0	79-00-00-610-801	Drain of oil system			C	Circuit d'huile / Oil system

8957 PART 2. MAINTENANCE OPERATIONS TO BE CARRIED OUT BY THE CUSTOMER AT ENGINE ARRIVAL Page 2 / 2

1.2.3. PAGE A5/1 – MODIFICATIONS AND SERVICE BULLETINS INCORPORATED AT TIME OF DELIVERY- PICTURE 5

(16) Engine: Enter the engine family / type / variant / version (e.g. Arriel 2B1A)

S/N: Enter the serial number of the engine (same as the engine identification plate)

(17) Modif

Enter the number of the modifications applied on non-modular items (Off-Module) and on items not managed using a Log Card including the basic ones. Note the basic TU, except the one followed by FMFE, the equipment reference allows to know the modifications that have been applied to it see 008175 (U015). The modifications pertaining to the Off-Module and to a module are recorded both in section A and in the Module Log card.

The modification type shall be written and no space shall be added. Ex : *TUXXX*, *Tf XXX*, *MXXX*, etc. It is allowed to enter the letter after the modification number.

The basic modifications belong to a set list for a given variant. Hence, do not cross the superseded TUs.

Do not enter the modifications partially embodied on the engine if the engine is non modular.

(18) Service Bulletins

This information is not required for new production engines when the Service Bulletin is linked to a modification.

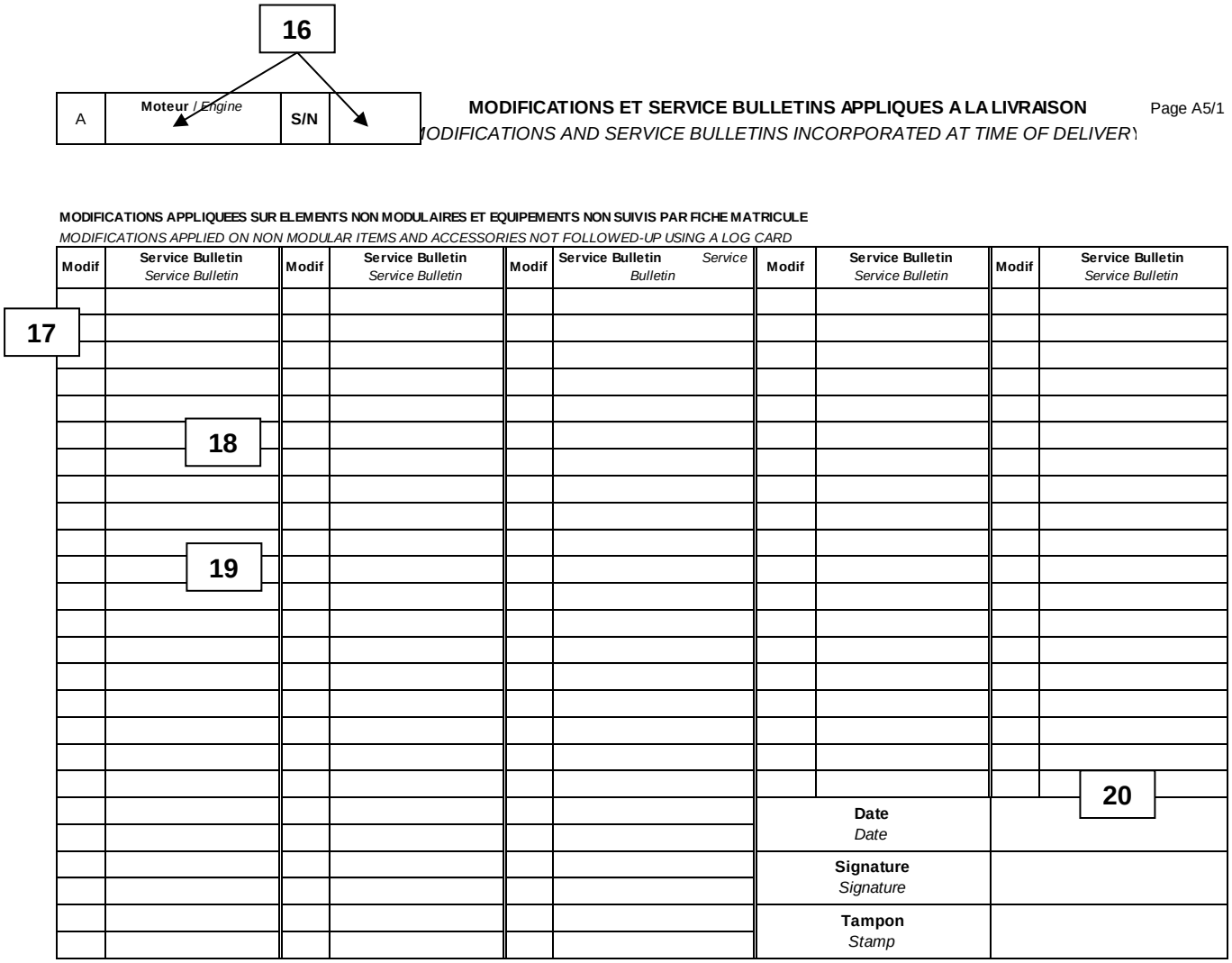
(19) Enter the number and version of the SB applied and/or associated with the modifications specified in box (2). If there is no associated SB, enter « / ». When the modification is Basic for the variant regarded, it is allowed to write « Base ».

Also enter the check SB not linked to a modification and applying to a non-modular item or for accessories not followed by a Log Card.

The letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of Services Bulletins associated with Airworthiness Directives, enter them together.

(20) Signature – Stamp – Date: Dated, signed and stamped by the authorised inspector.



Picture 5: Changes and services bulletins applied to delivery

1.2.4. PAGE A6/1 – AIRWORTHINESS DIRECTIVES APPLIED AT TIME OF DELIVERY-ERREUR ! SOURCE DU RENVOI INTROUVABLE. PICTURE 6

If the AD concerns the interface accessory / engine, it is non modular if the part of the interface does not belong to the module; is then entered in section A of the Log Book

If the AD concerns all the interfaces (off-module, module, accessory), it is entered in section A of the Log Book and on the Module Log Card.

(21) Engine : Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(22) N° CN / AD DGAC / EASA

Enter the number of the DGAC / EASA airworthiness directives (CN/AD) applied on the engine. To tell whether an AD is applicable, its applicability has to be analysed.

In case of AD associated with SB, enter them together.

(23) AD FAA

Enter the number of the airworthiness directives applied on the engine.

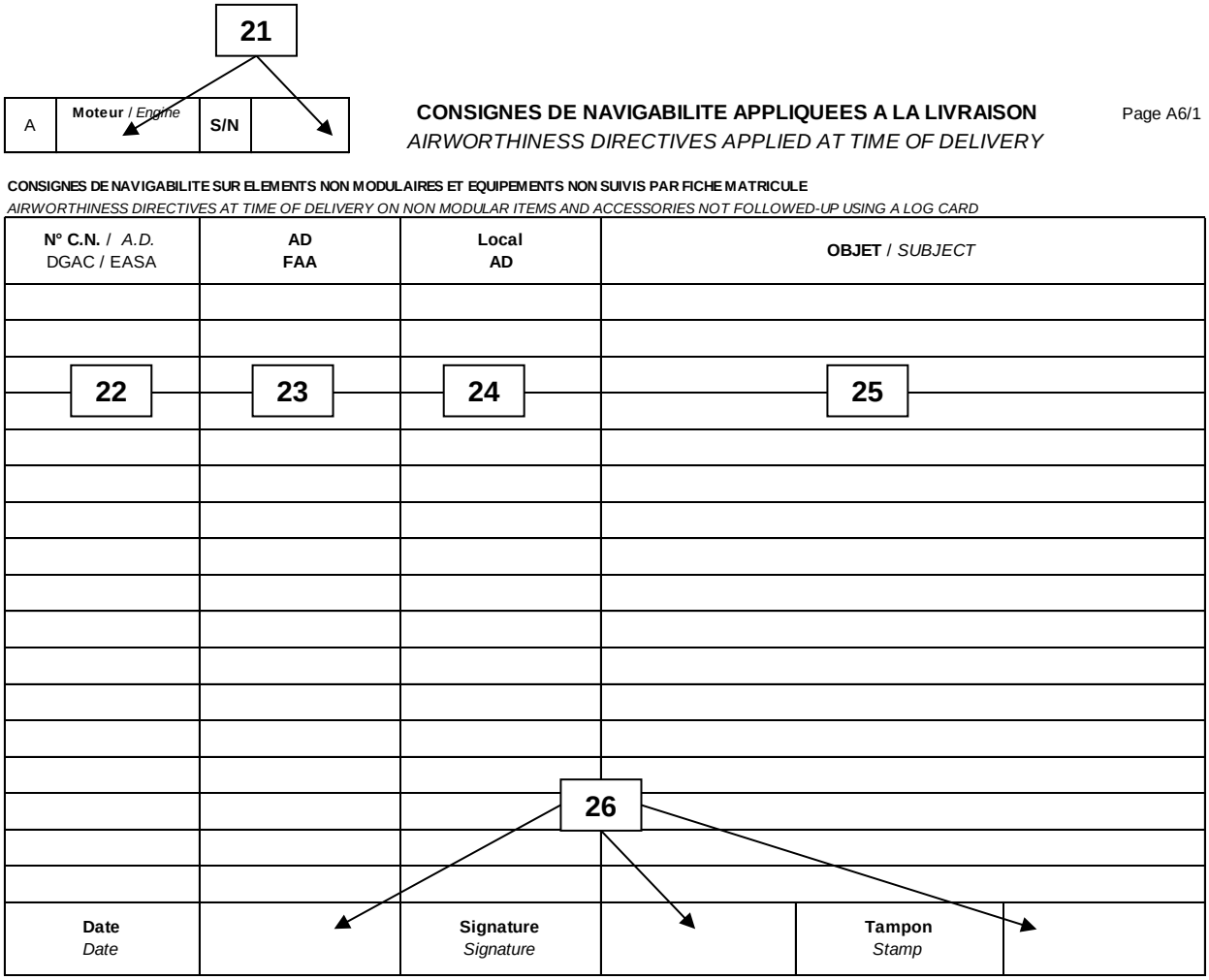
(24) Local AD

Enter the number of the airworthiness directives issued by the competent Authority of the country in which the engine is operated. Enter the applied ADs.

(25) SUBJECT

Enter the subject of the airworthiness directive.

(26) Date – Signature – Stamp: Dated, signed and stamped by the authorised inspector



Picture 6: Airworthiness Directives Applied to Delivery

1.2.5. PAGE A7/U: MODIFICATIONS AND SERVICE BULLETINS APPLIED OR REMOVED BY OPERATOR-PICTURE 7

(27) **Engine:** Enter the family / type / variant / version of the engine (e.g. ARRIEL 2B1A)

S/N: Enter the serial number of the engine (same as the engine identification plate)

(28) **Modif**

Enter the number of the modifications applied on the engine. The modification type shall be written and no space shall be added. Ex : TUXXX, Tf XXX, MXXX, etc. It is allowed to enter the letter after the modification number.

Do not enter the modifications partially embodied on the engine if the engine is non modular.

(29) **Service Bulletins**

Enter the number and version of the Service Bulletin corresponding to the modification applied on the engine, specified in box 2.

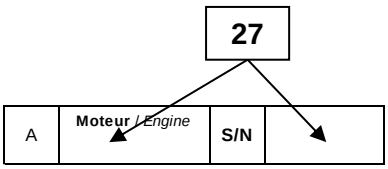
The letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of Services Bulletins associated with Airworthiness Directives, enter them together.

(30) **Date**

Enter the date of application of the modification.

(31) **Stamp: Visa of the authorised technician who applied the modification: signed and stamped.**



MODIFICATIONS ET SERVICE BULLETINS APPLIQUES OU SUPPRIMES PAR L'UTILISATEUR Page A7/U
MODIFICATIONS AND SERVICE BULLETINS APPLIED OR REMOVED BY OPERATOR

MODIFICATIONS APPLIQUEES SUR ELEMENTS NON MODULAIRES ET EQUIPEMENTS NON SUIVIS PAR FICHE MATRICULE
MODIFICATIONS APPLIED ON NON MODULAR ITEMS AND ACCESSORIES NOT FOLLOWED-UP USING A LOG CARD

Modif	Service Bulletin *Service Bulletin*	Date	Signature - Tampon / *Stamp*	Modif	Service Bulletin *Service Bulletin*	Date	Signature - Tampon / *Stamp*	Modif	Service Bulletin *Service Bulletin*	Date	Signature - Tampon / *Stamp*

28 29 30 31

MODIFICATIONS SUPPRIMEES SUR ELEMENTS NON MODULAIRES ET EQUIPEMENTS NON SUIVIS PAR FICHE MATRICULE
MODIFICATIONS REMOVED ON NON MODULAR ITEMS AND ACCESSORIES NOT FOLLOWED-UP USING A L

Modif	Service Bulletin *Service Bulletin*	Date	Signature - Tampon / *Stamp*	Modif	Service Bulletin *Service Bulletin*	Date	Signature - Tampon / *Stamp*	Modif	Service Bulletin *Service Bulletin*	Date	Signature - Tampon / *Stamp*

Picture 7: User-applied or deleted changes and bulletin services

1.2.6. PAGE A8/U: AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR- PICTURE 8

(32) **Engine :** Enter the family / type / variant / version of the engine

S/N: Enter the serial number of the engine.

(33) **N° CN / AD DGAC / EASA**

Enter the number of the DGAC / EASA airworthiness directives (CN/AD) applied on the engine.

If the AD concerns the interface accessory / engine, it is non modular if the part of the interface does not belong to the module; is then entered in section A of the Log Book.

If the AD concerns all the interface, it is entered in section A of the Log Book and on the Module Log Card.

In case of Airworthiness Directives associated with Services Bulletins, enter them together.

(34) **AD FAA**

Enter the number of the FAA airworthiness directives applied on the engine.

(35) **Local AD**

Enter the number of the airworthiness directives issued by the competent Authority of the country in which the engine is operated. Enter the applied ADs.

(36) **SUBJECT**

Enter the subject of the airworthiness directive.

In case of Airworthiness Directives associated with Services Bulletins, enter the SB number.

(37) **Date – Signature – Stamp:** Date of application of the airworthiness directive and visa the authorised technician: signed and stamped.

A	Moteur / *Engine*	S/N	

CONSIGNES DE NAVIGABILITE APPLIQUEES PAR L'UTILISATEUR
AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR

CONSIGNES DE NAVIGABILITE SUR ELEMENTS NON MODULAIRES ET EQUIPEMENTS NON SUIVIS PAR FICHE MATRICULE
AIRWORTHINESS DIRECTIVES AT TIME OF DELIVERY ON NON MODULAR ITEMS AND ACCESSORIES NOT FOLLOWED-UP USING A LOG CARD

N° C.N. / *A.D.* DGAC / EASA	**AD FAA**	**Local AD**	**OBJET** / *SUBJECT*	**DATE**	**Signature**	**Tampon** / *Stamp*

32 33 34 35 36 37

Picture 8: Airworthiness directives applied by the user

1.3. SECTION B : MODULES RECORD

Section B comprises the following pages:
Page B1: Title page.
Page B2/1: MODULES RECORD –Picture 9

(38) **Engine:** Enter the family / type / variant / version of the engine.
S/N: Enter the serial number of the engine

(39) **R:** Enter the rank of the module.

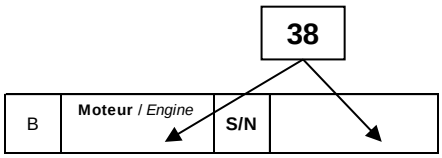
(40) **Nomenclature:** Enter the designation of the module (per the IPC in Repair / Overhaul or Géode for New production).

(41) **P/N:** Enter the part number of the module.

(42) **S/N:** Enter the serial number of the module

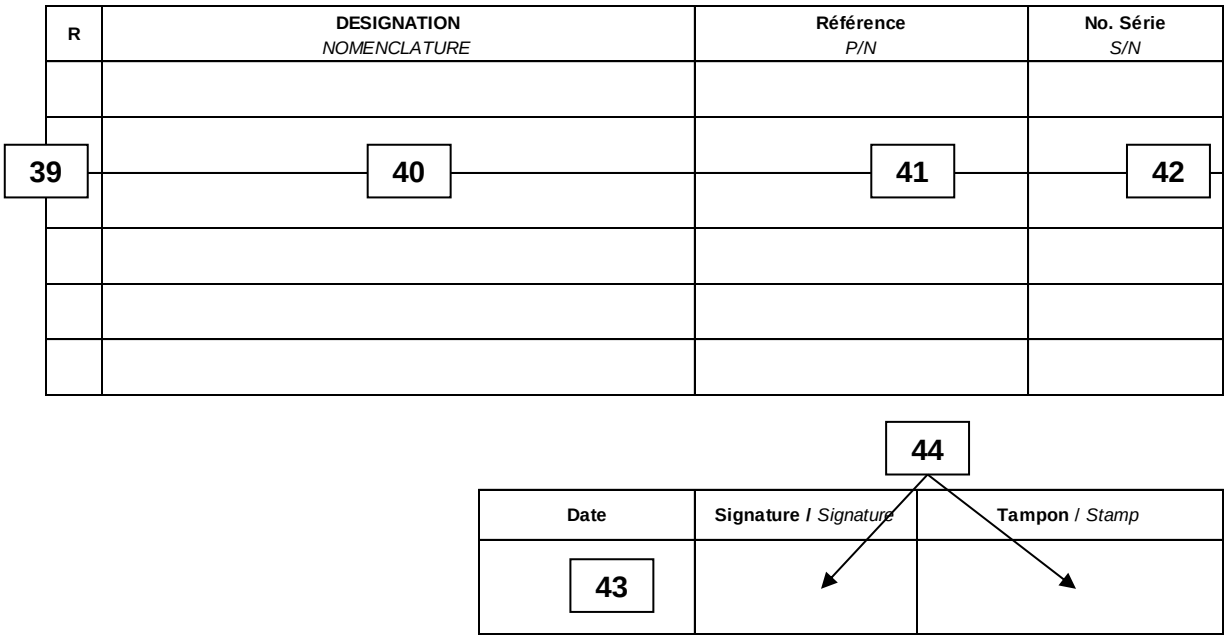
(43) **Date:** Enter the date.

(44) **Signature – Stamp:** Visa of the authorised inspector: signed and stamped.



LISTE DES MODULES

MODULES RECORD



Picture 9: List of modules

1.3.1. PAGE B3/U/1: MODULES CHANGE-PICTURE 10

(45) **Engine:** Enter the family / type / variant / version of the engine.
S/N: Enter the serial number of the engine

(46) **R**

Cross in page B2/1 the rank of the removed module. Do not cross the entire line to enable information reading. Record the rank of the installed module.

(47) **Nomenclature**

Enter the designation (per the SPC) of the module.

(48) **P/N**

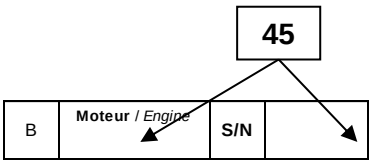
Enter the part number of the module.

(49) **S/N**

Enter the serial number of the module.

(50) **Date – Signature – Stamp:**

Date of the change of module and stamp of the authorised technician: signed and stamped.



REMPLACEMENT DES MODULES / *MODULES CHANGE*

Enregistrer successivement les modules de remplacement. Pour chaque nouvelle composition modulaire du moteur , établir un nouvel état de disponibilité (Section E).

Record successively the replacement modules. For each new modular composition of the engine, set up a new availability status (Section E).

Noter le rang R indiqué page B2, du type de module.
Note column R shown on B2 page, of module type.

R	DESIGNATION *NOMENCLATURE*	Référence *P/N*	N° Série *S/N*	Date *Date*	Signature *Signature*	Tampon *Stamp*

46 47 48 49 50

Picture 10: Replacing modules

Page 007782 (ENR1828): STARTING OVERHEAT ARRIUS 2F ONLY-Erreur ! Source du renvoi introuvable.

Attach the page to the Arrius 2F module 02 Log Card. Cross the Section E follow-up if section E is not changed.

007782 (ENR1828) linked to the Log Card of the module 02 ARRIUS 2F by a paper clip. Strike out the follow-up in section E if section E is not modified.

(51) Date :

Enter the date of the modification.

(52) Hours :

Enter the total hours of the module.

(53) T45 maxi

Enter the maximum temperature recorded by the VEMD.

(54) Time of operation (s)

Enter the duration during which the maximum temperature has been observed.

(55) 870°C<T45<998°C

3 digits VEMD – enter the overheat time between 870° and 998°C.

(56) 998°C<t45<1090°C

4 digits VEMD – enter the overheat time between 998° and 1090°C, if SB 31.003 applied.

(57) Total

4 digits VEMD – enter the overheat time between 870° and 1090°C, if SB 31.003 applied.

ANNEXE_SURTEMPERATURE AU DEMARRAGE ARRIUS 2F UNIQUEMENT
APPENDIX_STARTING OVERHEAT ARRIUS 2F ONLY

Date	**Heures** *Hours*	**T45 maxi** (°C)	**DUREE** *Time of operation* (seconde)	**Durée cumulée depuis RG au dernier état de disponibilité /** *Cumulated time of operation since overhaul at last availability status.*		
				870°C<T45<998°C **(1)** maxi 10 s.	**Si /** *if* **SB /** *BS* **n° 31.003 appliqué /** *applied* **(VEMD à /** *with* **4 digit)**	
					998°C<T45<1090°C **(2)** maxi 5 s.	**Total (1) + (2)** maxi 10 s.
51	**52**	**53**	**54**	**55**	**56**	**57**

Picture 11: Appendix Starting Overheat Arrius 2F

1.3.2. EXCHANGEABLE COMPONENT LOG CARD – FMFE

The following documents have to be attached to the FMFE:

The engine test bench sheets 007214 (ENR230) for modular engines gas generator modules

the turbine wheels composition sheets 007456 (ENR1160)

the minor and major recordable concessions007172 (ENR0042), as well as the personalized concessions (ENR0700 and 007351 (ENR0702).

The list of equipment for the stand-alone modules 007693 (ENR1694)

Page FMFE 1 - Picture 12

Completed by a Safran Helicopter Engines approved Repair or New Production Centre.

(58) N°

Enter the number of the FMFE: chronological number incremented each time a new FMFE is opened.

(59) IDENTIFICATION OF COMPONENT

Identity: Enter the designation of the module.

P/N: Enter the part number of the module (per the IPC or Géode).

S/N: Enter the serial number of the module

Manufacturer: Enter the name of the manufacturer of the module.

Engine type: Enter the type of the engine on which the module is installed (e.g. Arriel 2).

(60) WORKS CARRIED OUT

The type of work carried out in the repair center is described with any combination of the phrases below:

- For the MCO engines only note the work carried out done in French.

Inspected / tested under W/O XXXXX - Inspecté / Testé selon ordre de service N° XXXX

Repaired under W/O XXXXX - Réparé selon ordre de service N° XXXX

Overhauled under W/O XXXXX - Révisé selon ordre de service N° XXXX

Calendar visit XX years - Visite calendaire XX ans

Calendar Limit reset - Restitution de la limite calendaire

Up to PI XXX hrs included - Jusqu'à VP XXX hrs incluses

Do not mention the Periodic Inspection when overhauled.

Particular case: MAKILA 2 only, note PI 4000 hrs on Module 03 and section E even after overhaul.

VP 4000 hrs incluses ou PI 4000 hrs included

(61) REMARKS

Enter any information concerning the module:

torque conformation values, T4.5 conformation values,

concessions, application of Repair Technical Directives, Internal Directives as required any other information as required by the Overhaul Manual (thickness of washers fitted to the module, bevel gear clearance check for Arriel 1 etc.).

(62) STORAGE:

For individual modules, enter the type of storage.

For complete engines, cross out the box.

(63) AVAILABLE LIFE

According to the Manuals: Enter the reference and issue number of the Manual serving as reference for the family, type, variant and version of the engine ; Chapter 05 of the manual gives the list of life-limited parts (LLP) and/or the TBO of the modules and/or the list of usage-limited parts (ULP). Enter the temporary revision number if the information is given thru a temporary revision.

And/or Service Letter: Enter the reference and issue number of the Service Letter serving as reference for the family, type, variant and version of the engine; The Service Letter gives the TBO of the modules and the list of ULPs for those managed thru a SL.

TIME FOR THE CALENDAR LIMIT

Enter the calendar time available for the module (e.g.15 y) as instructed by the Service Letter OR Maintenance Manual mentioned in Available Life (area (63)). In case of deletion of the calendar limit, see §**SUPPRESSION OF THE CALENDAR LIMIT OF A MODULE OR REPLACEMENT BY A CALENDAR VISIT**.

DATE FOR FIRST ENTRY INTO SERVICE: Enter the date (month and year: MMM/YYYY) of entry into service of the module

This box is to be completed by the operator or taken from the previous Log Card by the repair center.

Day/month/year format is acceptable.

LIMITED DATE FOR USAGE: DATE FOR FIRST ENTRY INTO SERVICE + CALENDAR LIMIT

This field is to be completed (month and year MMM/YYYY) by the operator or carried over from the previous FMFE by the repair center.

By the operator or in a maintenance centre:

In case of deletion of the calendar limit, see §**SUPPRESSION OF THE CALENDAR LIMIT OF A MODULE OR REPLACEMENT BY A CALENDAR VISIT**.

LIFE USED AT TIME OF DELIVERY

(64) Module: Table giving the operating status of the module at the time of delivery.

TBO: Enter the time between overhauls, in hours, defined for the module in the SL or MM Chapter 05, mentioned in Available Life ((63)). In case of on condition TBO, enter SE/OC.

HOURS New: Enter the total operation hours of the module since new.

HOURS since overhaul: Enter the total operation hours of the module since overhaul. Enter 0 if the module has not been operated since last overhaul.

Remaining hours: Enter the smallest value of remaining hours between the tables (64) (TBO – HOURS since overhaul), (65) and (66).

Remaining cycles GG: Enter the smallest value of remaining cycles from between the tables (65) and (66).

Remaining cycles FT: Enter the smallest value of remaining cycles from between the tables (65) and (66).

Remaining creep damage: Enter the remaining creep damage rate using the information recorded in section E of the engine log book (for certain engines only, e.g. Makila 2A).

(65) Life Limited Parts: This table gives information about the life-limited parts, at the time of delivery of the module, as defined in Chapter 05 of the applicable MM.

R: Enter the rank (chronological number) assigned to the part; it is also to be entered in page 4/4 of the FMFE when the life-limited part is changed.

IDENTITY: Enter the designation of the part, as per MM or LS.

P/N: Enter the part number of the part, as per MM or LS.

S/N: Enter the serial number of the part.

Total run hours: Enter the total hours operated since new of the part.

Remaining hours: Enter the difference, in hours, between the limited life and the total hours since new of the part.

Total Cycles carried out. : Enter the total cycles consumed since new of the part.

Remaining cycles: Enter the difference, in cycles, between the limited life and the total cycles consumed since new of the part.

Total creep damage: enter the total creep damage (for certain engines only). If there is no value, enter “/”.

(66) Usage Limited Parts: For serialized blades, record the P/N and S/N of the blade (or one of the blades) of the set of blades with higher total run-hours. For non-serialized blades, enter “/”. Record the total run-hours of this blade and Total Cycles carried out. If another blade of the set has higher Cycles, record the Total Cycles carried out.

The non-serialized parts are not taken into account.

This table gives information about the Usage Limited Parts at the time of delivery of the module.

R: Enter the rank of the part.

IDENTITY: Enter the designation of the part (per the IPC)

P/N: Enter the part number of the part as per Chapter 5 of the MM or Service Letter.

S/N: Enter the serial number of the part. If there is no S/N, enter “/”

Total run hours: Enter the total hours operated since new of the part.

Remaining hours: Enter the difference, in hours, between the usage life and the total hours since new of the part

Cycles carried out total: Enter the total cycles consumed since new of the part.

Remaining cycles: Enter the difference, in cycles, between the usage life and the total cycles consumed since new of the part.

Total creep damage: Enter the total creep damage (for certain engines only). If there is no value, enter “/”.

58 → N° **FICHE MATRICULE DE FOURNITURE ECHANGEABLE** / *EXCHANGEABLE COMPONENT LOG CARD* **FMFE 1**

IDENTIFICATION DE LA FOURNITURE / IDENTIFICATION OF COMPONENT	
59 → **Désignation** *Identity*	
Référence / *P/N*	
N° de série / *S/N*	
Fabricant / *Manufacturer*	
Type de moteur / Engine Type	

Cette fiche est affectée à tout module ou composant à vie-limite 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 SAFRAN HELICOPTER ENGINES). 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 SAFRAN HELICOPTER ENGINES 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*
60	61	62

63 → **DISPONIBILITE /** *AVAILABLE LIFE*

MODULE - PIECES A VIE LIMITE / *Life limited parts* **- PIECES A LIMITE D'UTILISATION** / *Use limited parts*

Suivant Manuel de Maintenance : *According to Maintenance Manual :*	**Lettre Service :** *Service Letter :*

POTENTIEL CALENDAIRE *TIME FOR THE CALENDAR LIMIT*	**DATE 1ère MISE EN SERVICE** *DATE FOR FIRST ENTRY INTO SERVICE*	**DATE LIMITE D'UTILISATION** *LIMITED DATE FOR USAGE*

64 → **FONCTIONNEMENT A LA LIVRAISON** / *LIFE USED AT TIME OF DELIVERY*

MODULE	**POTENTIEL** *TBO*	**HEURES NEUF** *HOURS NEW*	**HEURES depuis révision** *HOURS since overhaul*	**Disponibilité en heures** *Remaining hours*	**Disponibilité en cycles GEN** *Remaining cycles GG*	**Disponibilité en cycles TL** *Remaining cycles FT*	**Disponibilité Endofluage Point/%** *Remaining*

65 →

PIECES *PARTS*	**R**	**DESIGNATION** *IDENTITY*	**REFERENCE** *P/N*	**N° Série** *S/N*	**Heures de fct. Total** *Total run hours*	**Disponibilité en heures** *Remaining hours*	**Cycles eff. Total** *Total cycles carried out*	**Disponibilité en cycles** *Remaining cycles*	**Endofluage total** *Total creep damage*
Pièces à vie-limite *Life limited parts*	1								
	2								
	3								
	4								
	5								

66 →

Pièces à limite d'utilisation *Use limited parts*									
	6								
	7								
	8								
	9								
	10								
	11								
	12								
	13								
	14								
	15								
	16								
	17								
	18								

007348-2 (ENR0696)

Picture 12: exchangeable component log card – FMFE

Page FMFE 2 –Picture 13

(67) MODIFICATIONS AND SERVICE BULLETINS APPLIED AT TIME OF DELIVERY

MODIF: Enter the number of the modifications applied on the module at the time of delivery, including the basic ones.

The modification type shall be written and no space shall be added. Ex: TUXXX, Tf XXX, MXXX, etc

It is allowed to enter the letter after the TU number. The basic modifications belong to a set list for a given variant.

Service Bulletin: Enter the number of the SB applied on the module, and / or associated with the modifications applied, at the time of delivery.). If there is no associated SB, enter « / ». When the modification is Basic for the variant regarded, it is allowed to write « Base ».

This information is not required for new production modules when the Service Bulletin is linked to a modification.

Also enter the check SB not linked to a modification and applying to the Module.

The revision letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of SB associated with AD, enter them together.

(68) AIRWORTHINESS DIRECTIVES APPLIED AT TIME OF DELIVERY

If the AD concerns the interface accessory / engine, it applies to the module if the part of the interface belongs to the module; it is then entered in the Module Log Card.

If the AD concerns all the interface (off-module, module, accessory), it is entered in section A of the Log Book and on the Module Log Card.

In case of AD associated with SB, enter them together.

N° CN / AD DGAC / EASA: Enter the number of the DGAC or EASA airworthiness directives (CN/AD) applied at the time of delivery of the module. To tell whether an AD is applicable, its applicability section field has to be analysed.

AD FAA: Enter the number of the FAA airworthiness directives applied at the time of delivery of the module.

Local AD: Enter the number of the airworthiness directives issued by the competent Authority of the country in which the engine is operated. Enter the applied ADs.

(69) HOURS AND CYCLES RUN ON TEST BENCH

This information is for repair centres only for the hours and cycles not counted in the Availability status. It consists in the accumulation of hours and cycles before 1st overhaul or between 2 overhauls. After overhaul, the counter is reset to 0.

The rules concerning the recording of hours and cycles performed on the bench are given by the CCT 6100

Hours: Enter the number of hours run during the engine bench test.

Cycles

- ✓ GG: Enter the number of gas generator cycles run during the engine bench test.
- ✓ FT: Enter the number of free turbine cycles run during the engine bench test.

(70) The Manufacturer/Approved Overhaul facility

Date – Signature – Stamp: Dated, signed and stamped by the manufacturer or the Safran Helicopter Engines approved repair / overhaul center.

(71) Authorised approval: Date – Signature – Stamp: Dated, signed and stamped by the competent Authority

FMFE 2

ETAT DES MODIFICATIONS ET SERVICE BULLETINS APPLIQUES AU MODULE A LA LIVRAISON
MODIFICATIONS AND SERVICE BULLETINS APPLIED ON THE MODULE AT TIME OF DELIVERY

MODIF	SERVICE BULLETIN	MODIF	SERVICE BULLETIN	MODIF	SERVICE BULLETIN	MODIF	SERVICE BULLETIN	MODIF	SERVICE BULLETIN
	67								

ETAT DES CONSIGNES DE NAVIGABILITE APPLIQUEES A LA LIVRAISON
AIRWORTHINESS DIRECTIVES APPLIED AT TIME OF DELIVERY

N° CN / AD DGAC / EASA	AD FAA	Local AD	N° CN / AD DGAC / EASA	AD FAA	Local AD	N° CN / AD DGAC / EASA	AD FAA	Local AD
	68							

HEURES ET CYCLES REALISES AU BANC D'ESSAI MAIS NON PRIS EN COMPTE DANS L'ETAT DE DISPONIBILITE EN ACCORD AVEC LE CCT 6100 ou RTC.
HOURS AND CYCLES RUN ON TEST BENCH BUT NOT COUNTED IN THE AVAILABILITY STATUS IN ACCORDANCE WITH CCT 6100 or CTB.

HEURES *HOURS*			HEURES *HOURS*			HEURES *HOURS*		
CYCLES	GN *GG*	TL *FT*	CYCLES	GN *GG*	TL *FT*	CYCLES	GN *GG*	TL *FT*
HEURES *HOURS*		**69**	HEURES *HOURS*			HEURES *HOURS*		
CYCLES	GN *GG*	TL *FT*	CYCLES	GN *GG*	TL *FT*	CYCLES	GN *GG*	TL *FT*

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 SAFRAN HELICOPTER ENGINES 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 SAFRAN HELICOPTER ENGINES 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 APPROVED SAFRAN HELICOPTER ENGINES OVERHAUL FACILITY BEFORE RETURNING IT TO SERVICE. Operators are warned that placing an engine - or a component - into service that has been involved in an accident and has not subsequently been inspected and approved for return to service by an approved SAFRAN HELICOPTER ENGINES overhaul facility is done strictly at the risk of the owner / operator.*	**L'Industriel / Réparateur agréé** *The Manufacturer / Approved overhaul facility* **Date** **Signature** **Tampon** / *Stamp* **70**	**Contrôle Habilité** *Authorized Approval* **Date** **Signature** **Tampon** / *Stamp* **71**

Picture 13: Status of changes and bulletin services applied to the module on delivery

Page FMFE 3/U - Picture 14

(72) N°:

Enter the number of the FMFE, same as page 1/4.

(73) IDENTIFICATION OF COMPONENT:

Identity: Enter the designation of the module (per the SPC)

P/N: Enter the part number of the module (per the SPC)

S/N: Enter the serial number of the module

Manufacturer: Enter the name of the manufacturer of the module.

Engine type: Enter the family and type of the engine on which the module is installed (e.g. Arriel 2).

(74) TRANSFERS:

The installations and removals of the module are recorded in this table.

The transfers are recorded only:

- ✓ In case of an installation on another engine
- ✓ When the module is removed to be sent in a MC or a RC.

Reason: Indicate the type of transfer operation (installed or removed).

Engine: Operation since new or overhaul.

- ✓ For modular engines, cross out “or overhaul”
- ✓ For non-modular engines cross out "new or".

Variant / Version: Enter the variant / version of the engine.

S/N: Enter the serial number of the engine.

Hours: Enter the total hours run since new or since overhaul by the engine.

Component: Operation since new or overhaul. If there has been no overhaul, cross “or overhaul”. Else cross “new or”

Hours: Enter the total hours run since new or since overhaul by the module.

Cycles: If applicable, enter the total hours run since new or since overhaul by the module.

- ✓ GG : Gas generator cycles
- ✓ FT : Free turbine cycles

Creep damage: Enter the creep damage rate; information read on the ECU and recorded in section E of the engine log book (for certain engines only, e.g. Makila 2A).

O.E.I : For engines installed on twin-engine or three-engine aircraft only. See Appendix 3 for OEI designation.

- ✓ OEI 1: Enter the time spent at the OEI 1 rating information recorded in section E.
- ✓ OEI 2: Enter the time spent at the OEI 2 rating information recorded in section E.

USER: Enter the name of the operator.

Date – Signature – Stamp: Dated, signed and stamped by an authorized technician.

(75) MODIFICATIONS AND SERVICE BULLETINS APPLIED BY OPERATOR:

MODIF: Enter the modifications (type and number: TUXXX, MXXX) applied in the field or in a Maintenance Centre.

SB: Enter the number of the Service Bulletins applied on the module and/or associated with the modifications specified in box MODIF.

The letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of SB associated with AD, enter them together.

DATE: Entre the date of application of the modification or the Service Bulletin.

Signature – Stamp: Enter the name of the technician who applied the modification or the Service Bulletin. Signed and stamped.

(76) MODIFICATIONS AND SERVICE BULLETINS REMOVED BY OPERATOR: Enter the modifications and / or Service Bulletins removed by the operator or in a Maintenance Center.

(77) AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR:

N° CN / AD DGAC / EASA: Enter the number of the DGAC airworthiness directives (CN/AD) applied in the field or in a Maintenance Center.

If the AD concerns the interface accessory / engine, it applies to the module if the part of the interface belongs to the module; is then entered in the Module Log Card.

If the AD concerns all the interface, it is entered in section A of the Log Book and on the Module Log Card.

In case of Airworthiness Directives associated with Services Bulletins, enter them together.

AD FAA: Enter the number of the FAA airworthiness directives applied in the field or in a Maintenance Center.

Local AD: Enter the number of the airworthiness directives issued by the competent Authority of the country in which the module is operated. Enter the applied ADs.

DATE: Entre the date of application of AD.

Signature – Stamp: Enter the name of the technician who applied the AD. Signed and stamped

N°

FICHE MATRICULE DE FOURNITURE ECHANGEABLE / *EXCHANGEABLE COMPONENT LOG CARD* **FMFE 3/U**

72

IDENTIFICATION DE LA FOURNITURE / IDENTIFICATION OF COMPONENT	
Désignation *Identity*	
Référence / *P/N*	
N° de série / *S/N*	
Fabricant / *Manufacturer*	
Type de moteur / Engine Type	

73

Cette fiche est affectée à tout module ou composant à vie-limite 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 SAFRAN HELICOPTER ENGINES). 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 SAFRAN HELICOPTER ENGINES Overhaul Facility). This card should be inserted in the engine log book on which the component is installed.

MOUVEMENTS
TRANSFERS

Motif *Reason*	**Moteur** / *Engine* **Fonctionnement depuis neuf ou révision**			**Fourniture** / *Component* **Fonctionnement depuis neuf ou révision** *Operation since new or overhaul*						**Utilisateur** *User*	**Date - Signature - Tampon** / *Stamp*
	Variante *Version*	**S/N**	**Heures** *Hours*	**Heures** *Hours*	**Cycles**		**Endofluage** *Creep damage*	**O.E.I** *Cf. Guide 008264 (U441)*			
					GEN *GG*	**TL** *FT*		**OEI 1***	**OEI2***		

74

ETAT DES MODIFICATIONS ET SERVICE BULLETINS APPLIQUES PAR L'UTILISATEUR
MODIFICATIONS AND SERVICE BULLETINS APPLIED BY OPERATOR

MODIF	**SERVICE BULLETIN**	**DATE**	**Signature - Tampon** / *Stamp*	**MODIF**	**SERVICE BULLETIN**	**DATE**	**Signature - Tampon** / *Stamp*

75

ETAT DES MODIFICATIONS ET SERVICES BULLETINS SUPPRIMES PAR L'UTILISATEUR
MODIFICATIONS AND SERVICE BULLETINS REMOVED BY OPERATOR

MODIF	**SERVICE BULLETIN**	**DATE**	**Signature - Tampon** / *Stamp*	**MODIF**	**SERVICE BULLETIN**	**DATE**	**Signature - Tampon** / *Stamp*

76

CONSIGNES DE NAVIGABILITE APPLIQUEES PAR L'UTILISATEUR
AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR

N° CN / AD DGAC / EASA	**AD FAA**	**Local AD**	**Date**	**Signature - Tampon** / *Stamp*	**N° CN / AD DGAC / EASA**	**AD FAA**	**Local AD**	**Date**	**Signature - Tampon** / *Stamp*

77

Picture 14: FMFE 3/U

Page FMFE 4/U: Picture 15

Page 4/U allows to indicate the maintenance performed, the life-limited or usage-limited parts replaced and any other information.

When a table is full, a new sheet (front + back page – pages 3 and 4) has to be used and the back page (page 4) filled in. The front page (page 3) has to be crossed after identification of supply. A letter has to be added to the No of the sheet. (Ex: the complementary sheet to FMFE #2 has to be numbered 2A)

(78) MAINTENANCE: Complete this table when a maintenance operation is performed on the module.

WORKS CARRIED OUT: Indicate the type of work carried out on the module (eg application of technical instructions, Service Bulletins, etc.). Record the increase of the use limits and indicate the document used (LS Number or reference of the MM for the Chapter 5).

CARRIED OUT

- Hours: Enter the hours of the module by the date of the work carried out. If there has been no overhaul, enter the hours since new.
- Cycles:
  - ✓ GG: Enter the gas generator cycles by the date of the work carried out (if the gas generator is concerned by the works carried out). If there has been no overhaul, enter the cycles since new
  - ✓ FT: Enter the free turbine cycles by the date of the work carried out (if the free turbine is concerned by the works carried out). If there has been no overhaul, enter the cycles since new

Operator: Enter the name of the operator.

Date: Enter the date on which the work is carried out.

Signature – Stamp Name of the technician who carried out the work: signed and stamped.

(79) LIFE LIMITED OR USAGE LIMITED PARTS REPLACED BY OPERATOR OR LIFE LIMIT EVOLUTION

Complete this table when a life-limited part or a usage-limited part is replaced or when the use or life limit of a part changes.

R: Cross out the relevant rank number in page 1 of the FMFE. Record this number here. When the use or life limit of a part changes, write “Limit change”

Reason: Indicate the type of transfer operation (installed or removed).

Identity: Enter the designation of the part as per the MM or the SL.

Part Number: Enter the P/N of the part as per the MM or the SL.

S/N: Enter the serial number of the part. If there is no S/N, enter “/”.

Total Hours: Enter the total hours since new of the part.

REMAINING Hrs: Enter the remaining lifetime, in hours, of the part.

TOTAL CYCLES: Enter the total cycles consumed since new of the part.

REMAINING Cy: Enter the remaining lifetime, in cycles, of the part.

Creep damage : Enter the consumed creep damage of the part.

Date: Enter the date of transfer of the part.

Signature – Stamp: Enter the name of the authorised technician who carried out the part transfer operation. Signed and stamped.

(80) REMARKS

Use this box to enter any remarks concerning the different operations carried out on the module.

Enter, if applicable, the new remaining lifetime in hours and cycles and creep damage resulting from the replacement of one or more Life-Limited Parts and / or Usage-Limited Parts and indicate, if necessary, the new remaining lifetime in Section E of the engine logbook.

Record in particular the resultant availability of the module if it is impacted by a change of use or life limit.

In case of removal and/or replacement, enter the type of oil used

FMFE 4/U

ENTRETIEN / *MAINTENANCE*						
TRAVAUX EFFECTUES *WORKS CARRIED OUT*	**EFFECTUES** *CARRIED OUT*			**OPERATEUR** *OPERATOR*	**Date**	**Signature - Tampon** / *Stamp*
	HEURES *HOURS*	**CYCLES**				
		GEN *GG*	**TL** *FT*			

78

PIECES A VIE LIMITE OU A LIMITE D'UTILISATION REMPLACEES PAR L'UTILISATEUR OU EVOLUTION DE VIE LIMITE *LIFE LIMITED OR USE LIMITED PARTS REPLACED BY OPERATOR OR LIFE LIMIT EVOLUTION*											
R	**MOTIF** *REASON*	**DESIGNATION** *IDENTITY*	**REFERENCE** *P/N*	**N° Série** *S/N*	**TOTAL HEURES** *HOURS*	**DISPO. Hrs** *REMAINING Hrs*	**TOTAL CYCLES**	**DISPO. Cy** *REMAINING Cy*	**Endofluage** *creep damage*	**Date**	**Signature - Tampon** / *Stamp*

79

RENSEIGNEMENTS PARTICULIERS / *REMARKS*	
Nouvelle disponibilité suite à remplacement de pièces à limite d'utilisation ou de pièces à vie-limite : *New status of availabilities following replacement of use limited parts and life limited parts:* **- Heures /** *Hours :* **- Cycles /** *Cycles :* - **Endofluage** */ Creep damage:*	**Type d'huile** */ Oil Type:*

80

Picture 15: FMFE 4/U

1.3.3. EXCHANGEABLE COMPONENT LOG CARD – FMFE – COREMODULE RTM322

The following documents have to be attached to the FMFE :

The engine test bench sheets 007214 (ENR0230) for the gas generator module

the turbine wheels composition sheets 007456 (ENR1160)

the minor and major recordable concessions 007172 (ENR0042), as well as the personalized concessions (ENR0700 and 007351 (ENR0702).

The list of equipment for the stand-alone modules 007693 (ENR1694)

Page FMFE 1 - **Core Module RTM322 Picture 16**

Completed by a Safran Helicopter Engines approved Repair or New Production Centre

(81) N°

Enter the number of the FMFE: chronological number incremented each time a new FMFE is opened.

(82) IDENTIFICATION OF COMPONENT

Identity: Enter the designation of the module.

P/N: Enter the part number of the module (per the IPC or Géode).

S/N: Enter the serial number of the module

Design authority: Enter the name of the design authority of the module.

Engine type: Enter the type of the engine on which the module is installed (e.g. RTM322).

(83) WORKS CARRIED OUT

The type of work carried out in the repair center is described with any combination of the phrases below:

- For the MCO engines only note the work carried out done in French.
-

- Inspected / tested under W/O XXXXX - Inspecté / Testé selon ordre de service N° XXXX
- Repaired under W/O XXXXX - Réparé selon ordre de service N° XXXX
- Overhauled under W/O XXXXX - Révisé selon ordre de service N° XXXX
- Calendar visit XX years - Visite calendaire XX ans
- Calendar Limit reset - Restitution de la limite calendaire
- Up to PI XXX hrs included - Jusqu'à VP XXX hrs incluses

- Do not mention the Periodic Inspection when overhauled.

(84) REMARKS

Enter any information concerning the module:

concessions, application of Repair Technical Directives, Internal Directives as required

any other information as required by the Overhaul Manual

(85) STORAGE:

For individual modules, enter the type of storage.

For complete engines, cross out the box.

(86) AVAILABLE LIFE

TIME FOR THE CALENDAR LIMIT : /

DATE FOR FIRST ENTRY INTO SERVICE: /

LIMITED DATE FOR USAGE : /

(87) LIFE USED AT TIME OF DELIVERY

Module: Table giving the operating status of the module at the time of delivery.

TBO: Enter the time between overhauls, in hours, defined for the module in the Service Letter or MM. In case of on condition TBO, enter SE/OC.

HOURS since new or overhaul: Enter the total operation hours of the module since new or overhaul. Enter 0 if the module has not been operated since last overhaul.

Remaining cycles : Enter the smallest value of remaining cycles from the following tables

Components: This table gives information about components parts, at the time of delivery of the module, as defined in Chapter 05 of the applicable Maintenance Manual.

IDENTITY: Enter the designation of the part, as per MM or LS.

P/N: Enter the part number of the part, as per MM or LS.

S/N: Enter the serial number of the part.

Total run hours: Enter the total hours operated since new of the part.

Remaining hours: Enter the difference, in hours, between the limited life and the total hours since new of the part.

Total Cycles carried out: Cycles value of the part with the most consumed value.

Remaining cycles: Enter the difference, in cycles, between the limited life and the total cycles consumed since new of the part.

N°

FICHE MATRICULE DE FOURNITURE ECHANGEABLE / *EXCHANGEABLE COMPONENT LOG CARD* **FMFE 1**

81

IDENTIFICATION DE LA FOURNITURE / *IDENTIFICATION OF COMPONENT*	
Désignation / *Identity*	
Référence / *P/N*	
N° de série / *S/N*	
Responsable design / *Design authority*	
Type de moteur / *Engine Type*	

82

Cette fiche est affectée à tout module ou composant à vie-limite 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 SAFRAN HELICOPTER ENGINES).
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 SAFRAN HELICOPTER ENGINES 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*		
	Dérogation(s) enregistrable(s):	**Date**	**Durée** *Duration*	**Tampon** *Stamp*
	Recordable concession(s) :			

83 84 85

86

DISPONIBILITES / *Available life*

PIECES A VIE LIMITE / *Life limited parts* - **PIECES A LIMITE D'UTILISATION** / *Usage limited parts*

LIMITE CALENDAIRE DISPONIBLE *TIME AVAILABLE FOR THE CALENDAR LIMIT*	**DATE 1ère MISE EN SERVICE** *DATE FOR FIRST ENTRY INTO SERVICE*	**DATE LIMITE D'UTILISATION** *LIMITED DATE FOR USAGE*
/	/	/

FONCTIONNEMENT A LA LIVRAISON / *LIFE USED AT TIME OF DELIVERY*

MODULE	**Potentiel** *TBO*	**Heures depuis neuf ou révision générale** *Hours since new or*	**Disponibilité en heures** *Remaining hours*	**Disponibilité en cycles** *Remaining cycles*	
				Comp. Axial : *Axial stages :*	**HP :**
	On Condition		/	**Rouet cent. :** *Impeller :*	**PT :** /

Composition *Components*	**DESIGNATION** *IDENTITY*	**REFERENCE** *P/N*	**N° SERIE** *S/N*	**Heures de fct. total** *Total run hours*	**Disponibilité** *To be run*	**Cycles eff. Total** *Cycles carried out total*	**Disponibilité** *To be run*
	Module Compresseur *Compressor (M01)*				/	**Axial Stage s=**	**Axial Stage s=**
	/	/	/	/	/	**Impeller =**	**Impeller =**
	Chambre de Combustion & Turbine HP *Combustion & HP turbine (M02)*				/	**HP :**	**HP :**
	PT1 Nozzle *Ensemble Distributeur PT1*				/	/	/

87

Picture 16: FMFE 1 – Core Module RTM322

Page FMFE 2 - CoreModule RTM322 – Picture 17

(88) MODIFICATIONS AND SERVICE BULLETINS APPLIED AT TIME OF DELIVERY

Modification N°: Enter the number of the modifications applied on the module at the time of delivery, including the basic ones.

The modification type shall be written and no space shall be added. Ex: CXXX

It is allowed to enter the letter after the modif number. The basic modifications belong to a set list for a given variant.

Service Bulletin: Enter the number of the SB applied on the module, and / or associated with the modifications applied, at the time of delivery.). If there is no associated SB, enter « / ». When the modification is Basic for the variant regarded, it is allowed to write « Base ».

This information is not required for new production modules when the Service Bulletin is linked to a modification.

Also enter the check SB not linked to a modification and applying to the Module.

The revision letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of SB associated with AD, enter them together.

(89) AIRWORTHINESS DIRECTIVES APPLIED AT TIME OF DELIVERY

If the AD concerns the interface accessory / engine, it applies to the module if the part of the interface belongs to the module; it is then entered in the Module Log Card.

If the AD concerns all the interface (off-module, module, accessory), it is entered in section A of the Log Book and on the Module Log Card.

In case of AD associated with SB, enter them together.

Number: Enter the number of the airworthiness directives (CN/AD) applied at the time of delivery of the module. To tell whether an AD is applicable, its applicability section field has to be analyzed.

Authority: Enter the name of the reference authority of the AD.

(90) HOURS AND CYCLES RUN ON TEST BENCH

This information is for repair centres only for the hours and cycles not counted in the Availability status. It consists in the accumulation of hours and cycles.

Hours: Enter the number of hours run during the engine bench test.

Cycles: Enter the number of cycles of each type.

Enter the date

(91) The Manufacturer / The Approved Overhaul facility

Signature – Date – Stamp: Dated, signed and stamped by the manufacturer or the Safran Helicopter Engines approved repair / overhaul center.

(92) Authorised approval:

Signature – Date – Stamp: Dated, signed and stamped by the competent Authority

FMFE 2

88

ETAT DES MODIFICATIONS DE CLASSE 1 ET SERVICES BULLETINS APPLIQUES AU MODULE
CLASS 1 MODIFICATIONS AND SERVICE BULLETINS APPLIED ON THE MODULE

N° MODIF *Modification N°*	Service Bulletin	N° MODIF *Modification N°*	Service Bulletin	N° MODIF *Modification N°*	Service Bulletin

89

ETAT DES CONSIGNES DE NAVIGABILITE APPLIQUEES A LA LIVRAISON
AIRWORTHINESS DIRECTIVES APPLIED AT TIME OF DELIVERY

Numéro / *Number*	**Autorité /** *Authority*	**Numéro /** *Number*	**Autorité /** *Authority*

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
Hours and cycles realised at test bench but not count up into status of available

90

	Accumulés après ESSAI 1 / *Accumulated after TEST 1*				**Accumulés après ESSAI 2 /** *Accumulated after TEST 2*			
HEURES / *HOURS*	**Date:**				**Heures**/Hours	**Date:**		
CYCLES	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:** /	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:** /
	Accumulés après ESSAI 3 / *Accumulated after TEST 3*				**Accumulés après ESSAI 4 /** *Accumulated after TEST 4*			
HEURES / *HOURS*	**Date:**				**Heures**/Hours	**Date:**		
CYCLES	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:** /	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:** /

NOTA 1: **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 SAFRAN HELICOPTER ENGINES engage sa propre responsabilité.

NOTE 1: 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 APPROVED TURBOMECA OVERHAUL FACILITY BEFORE RETURNING IT TO SERVICE.
Operators are warned that placing an engine - or a component - into service that has been involved in an accident and has not subsequently been inspected and approved for return to service by an approved SAFRAN HELICOPTER ENGINES overhaul facility is done strictly at the risk of the owner/operator.

	Le constructeur / Le réparateur agréé *The manufacturer / The approved overhaul facility*	**Contrôle habilité** *Authorized Approval*
Signature:	**91**	**Signature:** **92**
Date :		**Date :**
Tampon : *Stamp*		**Tampon :** *Stamp*

Picture 17: Page FMFE 2 – CoreModule RTM322

Page FMFE 3/U- CoreModule RTM322 - **Picture 18**

(93) N°:

Enter the number of the FMFE, same as page 1/4.

(94) IDENTIFICATION OF COMPONENT

Identity: Enter the designation of the module (per the SPC)

P/N: Enter the part number of the module (per the SPC)

S/N: Enter the serial number of the module

Design authority: Enter the name of the design authority of the module.

Engine type: Enter the family and type of the engine on which the module is installed (e.g. RTM322).

(95) TRANSFERS

The installations and removals of the module are recorded in this table.

The transfers are recorded only:

- ✓ In case of an installation on another engine
- ✓ When the module is removed to be sent in a MC or a RC.

Delivered, Installed or Removed: Indicate the type of transfer operation (delivered, installed or removed).

Engine: Operation since new.

Variant / Version: Enter the variant / version of the engine.

S/N: Enter the serial number of the engine.

H. since new: Enter the total hours run since new by the engine.

Core Module since new or overhaul: Operation since new or overhaul. If there has been no overhaul, cross “or overhaul”. Else cross “new or”

Hours: Enter the total hours run since new or since overhaul by the core module.

Cycles: If applicable, enter the total hours run since new or since overhaul by the core module.

O.E.I: For engines installed on twin-engine or three-engine aircraft only.

- ✓ OEI 30s: Enter the time spent at the OEI 30s rating information recorded in section E of the engine log book.
- ✓ OEI 2min: Enter the time spent at the OEI 2min rating information recorded in section E.

Site: Enter the name of the site.

Date : Enter the date of the transfer

Signature – Stamp: Signed and stamped by an authorized technician.

(96) MODIFICATIONS AND SERVICE BULLETINS APPLIED BY OPERATOR

Modification Number: Enter the modifications (type and number: CXXX) applied in the field or in a Maintenance Centre.

Service Bulletin: Enter the number of the Service Bulletins applied on the module and/or associated with the modifications specified in box MODIF.

The letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of SB associated with AD, enter them together.

DATE: Enter the date of application of the modification or the Service Bulletin.

Stamp: Enter the name of the technician who applied the modification or the Service Bulletin. Signed and stamped.

(97) AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR:

Airworthiness Directives Number: Enter the number of the airworthiness directives (CN/AD) applied in the field or in a Maintenance Center.

If the AD concerns the interface accessory / engine, it applies to the module if the part of the interface belongs to the module; is then entered in the Module Log Card.

If the AD concerns all the interface, it is entered in section A of the Log Book and on the Module Log Card. In case of Airworthiness Directives associated with Services Bulletins, enter them together.

Authority: Enter the name of the reference authority of the AD.

DATE : Enter the date of application of the AD

Stamp : Signed and stamped by the competent personnel

93 N°

FICHE MATRICULE DE FOURNITURE ECHANGEABLE / *EXCHANGEABLE COMPONENT LOG CARD* **FMFE 3/U**

IDENTIFICATION DE LA FOURNITURE / *IDENTIFICATION OF COMPONENT*	
Désignation / *Identity*	
Référence / *P/N*	
N° de série / *S/N*	
Responsable design / *Design authority*	
Type de moteur / *Engine Type*	

94

Cette fiche est affectée à tout module ou composant à vie-limite 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 SAFRAN HELICOPTER ENGINES). Elle doit être insérée dans le livret du moteur sur lequel la

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 SAFRAN HELICOPTER ENGINES Overhaul Facility). This card should be inserted in the engine log book on which the component is installed.

95

MOUVEMENTS
TRANSFERS

Livraison, Pose ou Dépose *Delivered, Installed or Removed*	**Moteur** / *Engine*			**Core Module Depuis neuf ou révision/***Since new or overhaul*						**Site**	**Date**	**Signature et Tampon** / *Stamp* **(voir NOTA 1)** *(see NOTE 1)*
					Cycles				**O.E.I**			
	Variante *Variant*	**N° SERIE** *S/N*	**H. depuis neuf** *H since new*	**Heures** *Hours*	**Comp. Axial** *Axial stages*	**Rouet cent.** *Impeller*	**HP**	**PT**	**30s** (en s.)	**2 min** (min et s)			
								/	/	/			
								/	/	/			
								/	/	/			
								/	/	/			
								/	/	/			
								/	/	/			
								/	/	/			
								/	/	/			

96

ETAT DES MODIFICATIONS DE CLASSE 1 ET SERVICES BULLETINS APPLIQUES PAR L'UTILISATEUR
CLASS 1 MODIFICATIONS AND SERVICE BULLETINS APPLIED BY OPERATOR

N° MODIF *Modification Number*	**Service Bulletin**	**DATE**	**Signature et Tampon** / *Stamp*	**N° MODIF** *Modification Number*	**Service Bulletin**	**DATE**	**Signature et Tampon** / *Stamp*

97

CONSIGNES DE NAVIGABILITE APPLIQUEES PAR L'UTILISATEUR
AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR

N° CONSIGNES DE NAVIGABILITE *Airworthiness Directives Number*	**AUTORITE** / *Authority*	**DATE**	**Signature et Tampon/***Stamp*

Picture 18: Page FMFE 3/U – CoreModule RTM322

Page FMFE 4/U - CoreModule RTM322: Picture 19

Page 4/U allows to indicate the maintenance performed, the life-limited or usage-limited parts replaced and any other information.

When a table is full, a new sheet (front + back page – pages 3 and 4) has to be used and the back page (page 4) filled in. The front page (page 3) has to be crossed after identification of supply. A letter has to be added to the No of the sheet. (Ex: the complementary sheet to FMFE #2 has to be numbered 2A)

(98) MAINTENANCE: Complete this table when a maintenance operation is performed on the module.

WORKS CARRIED OUT: Indicate the type of work carried out on the module (eg application of technical instructions, Service Bulletins, etc.). Record the increase of the use limits and indicate the document used (LS Number or reference of the MM for the Chapter 5).

CARRIED OUT

- ✓ Hours: Enter the hours of the module by the date of the work carried out. If there has been no overhaul, enter the hours since new.
- ✓ Cycles : Enter the cycles values by the date of the work carried out. If there has been no overhaul, enter the cycles since new

Operator: Enter the name of the operator.

DATE – SIGNATURE: Date and name of the technician who carried out the work: signed and stamped.

(99) LIFE LIMITED OR USAGE LIMITED PARTS REPLACED BY OPERATOR:

Complete this table when a life-limited part or a usage-limited part is replaced or when the use or life limit of a part changes.

- Reason: Indicate the type of transfer operation (installed or removed).
- Identity: Enter the designation of the part as per the MM or the SL.
- Part Number: Enter the part number of the part as per the MM or the SL.
- S/N: Enter the serial number of the part. If there is no S/N, enter “/”.
- TOTAL HOURS: Enter the total hours since new of the part.
- REMAINING: Enter the remaining lifetime, in hours, of the part.
- TOTAL CYCLES: Enter the total cycles consumed since new of the part.
- REMAINING: Enter the remaining life, in cycles, of the part.
- DATE – SIGNATURE: Enter the date and name of the authorized technician who carried out the part transfer operation. Signed and stamped.

(100) REMARKS

Use this box to enter any remarks concerning the different operations carried out on the module.

Enter, if applicable, the new remaining lifetime in hours and cycles and creep damage resulting from the replacement of one or more Life-Limited Parts and / or Usage-Limited Parts and indicate, if necessary, the new remaining lifetime in Section E.

Record in particular the resultant availability of the module if it is impacted by a change of use or life limit.

In case of removal and/or replacement, enter the type of oil used

FMFE 4/U

ENTRETIEN / *MAINTENANCE*

TRAVAUX EFFECTUES *WORKS CARRIED OUT*	EFFECTUES / *CARRIED OUT*					Opérateur *Operator*	DATE / SIGNATURE
	Heures *Hours*	Cycles					
		Comp. axial *Axial stages*	Rouet cent. *Impeller*	HP	PT		
					/		
					/		
					/		
98					/		
					/		
					/		
					/		

PIECES A VIE LIMITE OU A LIMITE D'UTILISATION REMPLACEES PAR L'UTILISATEUR
LIFE LIMITED OR USE LIMITED PARTS REPLACED BY OPERATOR

Motif *Reason*	DESIGNATION *IDENTITY*	REFERENCE *PART NUMBER*	N° SERIE *S/N*	HEURES / *HOURS*		TOTAL CYCLES					DATE / SIGNATURE
				TOTAL	DISPO. *Remaining*	Comp. axial	Rouet cent. *Impeller*	HP	PT	DISPO. *Remaining*	
Dépose *Removed*									/		
Pose *Installed*									/		
Dépose *Removed*									/		
Pose *Installed*									/		
Dépose *Removed*									/		
Pose *Installed*		99							/		
Dépose *Removed*									/		
Pose *Installed*									/		
Dépose *Removed*									/		
Pose *Installed*									/		
Dépose *Removed*									/		
Pose *Installed*									/		
Dépose *Removed*									/		
Pose *Installed*									/		

RENSEIGNEMENTS PARTICULIERS / REMARKS

100

Picture 19: Page FMFE 4/U – Core Module RTM322

1.3.4. EXCHANGEABLE COMPONENT LOG CARD – FMFE – RTM322 (MK250 EXPORT) - 007771 (ENR1815)

The following documents have to be attached to the FMFE:

The engine test bench sheets 007214 (ENR230) for the gas generator module

the turbine wheels composition sheets 007456 (ENR1160)

the minor and major recordable concessions 007172 (ENR0042), as well as the personalized concessions (ENR0700 and 007351 (ENR0702).

The list of equipment for the stand-alone modules 007693 (ENR1694)

Page FMFE 1 – RTM322 Picture 20

Completed by a Safran Helicopter Engines approved Repair or New Production Centre

(101) N°

Enter the number of the FMFE: chronological number incremented each time a new FMFE is opened.

(102) IDENTIFICATION OF COMPONENT

Identity: Enter the designation of the module.

P/N: Enter the part number of the module (per the IPC or Géode).

S/N: Enter the serial number of the module

Design authority: Enter the name of the design authority of the module (e.g. Safran Helicopter Engines).

Engine type: Enter the type of the engine on which the module is installed (e.g. RTM322).

(103) WORKS CARRIED OUT

The type of work carried out in the repair center is described with any combination of the phrases below:

- For the MCO engines only note the work carried out done in French.

- Inspected / tested under W/O XXXXX - Inspecté / Testé selon ordre de service N° XXXX
- Repaired under W/O XXXXX - Réparé selon ordre de service N° XXXX
- Overhauled under W/O XXXXX - Révisé selon ordre de service N° XXXX
- Calendar visit XX years - Visite calendaire XX ans
- Calendar Limit reset - Restitution de la limite calendaire
- Up to PI XXX hrs included - Jusqu'à VP XXX hrs incluses
  - Do not mention the Periodic Inspection when overhauled

(104) REMARKS

Enter any information concerning the module:

concessions, application of Repair Technical Directives, Internal Directives as required

any other information as required by the Overhaul Manual

(105) STORAGE

For individual modules, enter the type of storage.

For complete engines, cross out the box.

(106) AVAILABLE LIFE:

TIME FOR THE CALENDAR LIMIT:

Enter the calendar time available for the module (e.g.15 y) as instructed by the Service Letter or Maintenance manual.

DATE FOR FIRST ENTRY INTO SERVICE: Enter the date (month and year) of entry into service of the module. This box is to be completed by the operator or taken from the previous Log Card by the repair center.

Day/month/year format is acceptable.

LIMITED DATE FOR USAGE: Date for first entry into service + calendar limit. This box is to be completed by the operator or taken from the previous Log Card by the repair center.

(107) LIFE USED AT TIME OF DELIVERY

Module: Table giving the operating status of the module at the time of delivery.

TBO: Enter the time between overhauls, in hours, defined for the module in the Service Letter. In case of on condition TBO, enter SE/OC.

HOURS since new or overhaul: Enter the total operation hours of the module since new or overhaul. Enter 0 if the module has not been operated since last overhaul.

Remaining hours: Enter the smallest value of remaining hours from between the following tables (108)(109).

Remaining cycles: Enter the smallest value of remaining cycles from between the following tables(108)(109).

(108) Life Limited Parts: This table gives information about the life-limited parts, at the time of delivery of the module, as defined in Chapter 05 of the applicable Maintenance Manual.

IDENTITY: Enter the designation of the part, as per MM or LS.

P/N: Enter the part number of the part, as per MM or LS.

S/N: Enter the serial number of the part.

Total run hours: Enter the total hours operated since new of the part.

Remaining hours: Enter the difference, in hours, between the limited life and the total hours since new of the part.

Total Cycles carried out. : Enter the total cycles consumed since new of the part.

Remaining cycles: Enter the difference, in cycles, between the limited life and the total cycles consumed since new of the part.

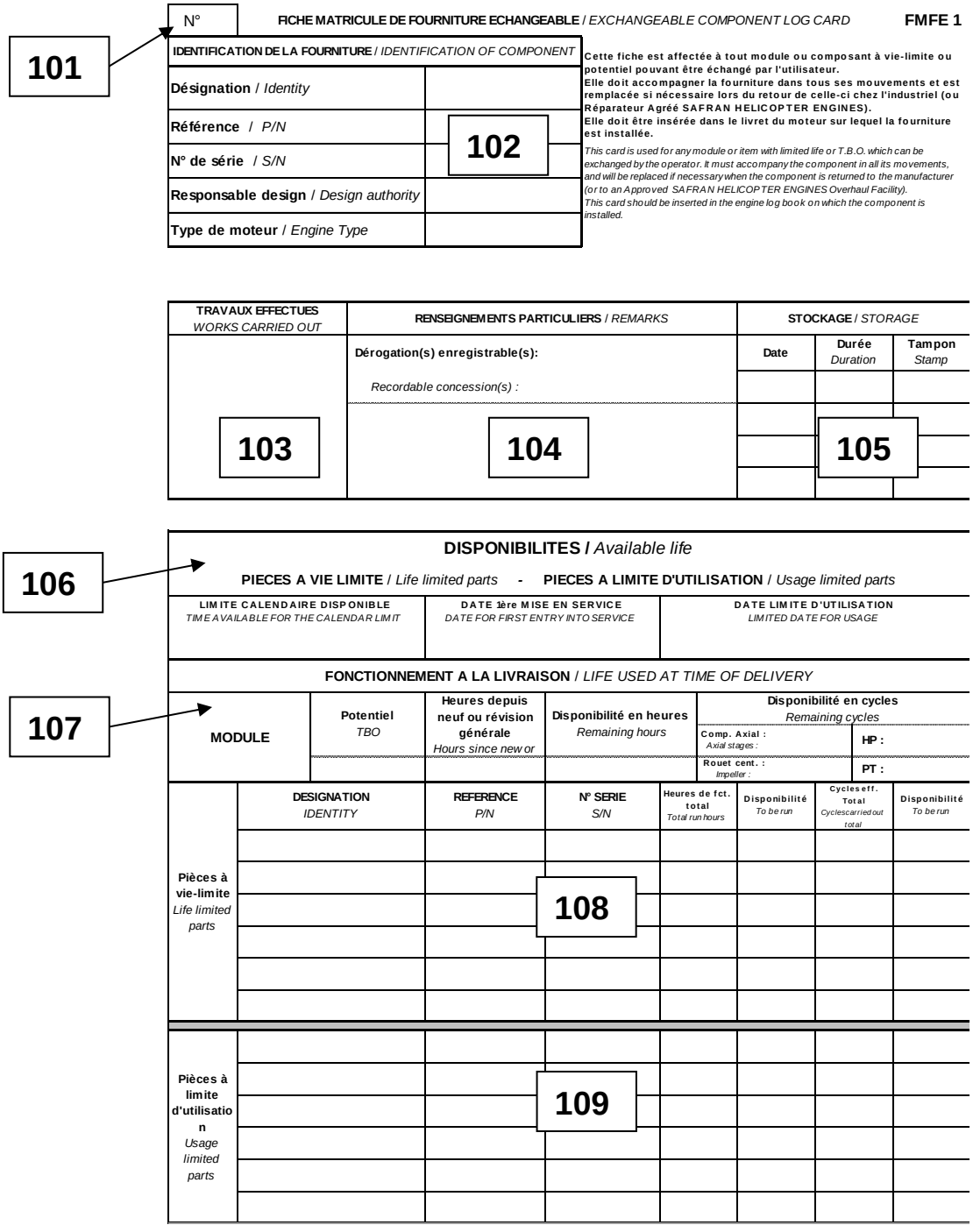
Total creep damage: enter the total creep damage (for certain engines only).

(109) Usage Limited Parts: This table gives information about the Usage Limited Parts at the time of delivery of the module.

Note: For Module 02, note the start fuel nozzles (cf. Maintenance Manual).

- DESIGNATION: fill in the part designation according to MM or LS
- REFERENCE: fill in the part number, according to MM or LS.
- Serial number: enter the individual part number.
- Total Hours of operation. Total: enter the operating hours of the part.
- Availability in hours: enter the result, in hours, of the potential minus the total operating hours of the part.
- Total eff. cycles: enter the cycles performed on the part.

- Availability in cycles: enter the result, in cycles, of the potential minus the cycles performed, of the part.



Picture 20: Page FMFE 1 – RTM322

Page FMFE 2 - RTM322 – Picture 21

(110) MODIFICATIONS AND SERVICE BULLETINS APPLIED AT TIME OF DELIVERY

Modification N°: Enter the number of the modifications applied on the module at the time of delivery, including the basic ones.

The modification type shall be written and no space shall be added. Ex: CXXX

It is allowed to enter the letter after the modif number. The basic modifications belong to a set list for a given variant.

Service Bulletin: Enter the number of the SB applied on the module, and / or associated with the modifications applied, at the time of delivery.). If there is no associated SB, enter « / ». When the modification is Basic for the variant regarded, it is allowed to write « Base ».

This information is not required for new production modules when the Service Bulletin is linked to a modification.

Also enter the check SB not linked to a modification and applying to the Module.

The revision letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of SB associated with AD, enter them together.

(111) AIRWORTHINESS DIRECTIVES APPLIED AT TIME OF DELIVERY

If the AD concerns the interface accessory / engine, it applies to the module if the part of the interface belongs to the module; it is then entered in the Module Log Card.

If the AD concerns all the interface (off-module, module, accessory), it is entered in section A of the Log Book and on the Module Log Card.

In case of AD associated with SB, enter them together.

Number: Enter the number of the airworthiness directives (CN/AD) applied at the time of delivery of the module. To tell whether an AD is applicable, its applicability section field has to be analyzed.

Authority: Enter the name of the reference authority of the AD.

(112) HOURS AND CYCLES RUN ON TEST BENCH

This information is for repair centres only for the hours and cycles not counted in the Availability status. It consists in the accumulation of hours and cycles.

Hours: Enter the number of hours run during the engine bench test.

Cycles: Enter the number of cycles of each type.

Date : Enter the date of the test

(113) The Manufacturer/Approved Overhaul facility:

Signature – Date – Stamp: Signed, dated and stamped by the manufacturer or the Safran Helicopter Engines – approved repair / overhaul center.

(114) Authorised approval:

Signature – Date – Stamp: Signed, dated and stamped by the competent Authority.

FMFE 2

ETAT DES MODIFICATIONS DE CLASSE 1 ET SERVICES BULLETINS APPLIQUES AU MODULE
CLASS 1 MODIFICATIONS AND SERVICE BULLETINS APPLIED ON THE MODULE

N° MODIF *Modification N°*	Service Bulletin	N° MODIF *Modification N°*	Service Bulletin	N° MODIF *Modification N°*	Service Bulletin

110

ETAT DES CONSIGNES DE NAVIGABILITE APPLIQUEES A LA LIVRAISON
AIRWORTHINESS DIRECTIVES APPLIED AT TIME OF DELIVERY

Numéro / *Number*	**Autorité /** *Authority*	**Numéro /** *Number*	**Autorité /** *Authority*

111

112

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
Hours and cycles realised at test bench but not count up into status of available

	Accumulés après ESSAI 1 / *Accumulated after TEST 1*				**Accumulés après ESSAI 2 /** *Accumulated after TEST 2*			
HEURES / *HOURS*	**Date:**				**Heures**/Hours	**Date:**		
CYCLES	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:**	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:**
	Accumulés après ESSAI 3 / *Accumulated after TEST 3*				**Accumulés après ESSAI 4 /** *Accumulated after TEST 4*			
HEURES / *HOURS*	**Date:**				**Heures**/Hours	**Date:**		
CYCLES	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:**	**Comp. Axial :** *Axial stages:*	**Rouet cent. :** *Impeller:*	**HP:**	**PT:**

NOTA 1 : 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 SAFRAN HELICOPTER ENGINES 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 SAFRAN HELICOPTER

NOTE 1: 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 APPROVED SAFRAN HELICOPTER ENGINES OVERHAUL FACILITY BEFORE RETURNING IT TO SERVICE.
Operators are warned that placing an engine - or a component - into service that has been involved in an accident and has not subsequently been inspected and approved for return to service by an approved SAFRAN HELICOPTER ENGINES overhaul facility is done strictly at the risk of the owner/operator.

	Le constructeur / Le réparateur agréé *The manufacturer / The approved overhaul facility*	**Contrôle habilité** *Authorized Approval*
Signature:		**Signature:**
Date :	**113**	**Date :** **114**
Tampon : *Stamp*		**Tampon :** *Stamp*

Picture 21: Page FMFE 2 – RTM322

Page FMFE 3/U - RTM322 - Picture 22

(115) N°

Enter the number of the FMFE, same as page 1/4.

(116) IDENTIFICATION OF COMPONENT

Identity: Enter the designation of the module (per the SPC)

P/N: Enter the part number of the module (per the SPC)

S/N: Enter the serial number of the module

Design Authority: Enter the name of the design authority of the module.

Engine type: Enter the family and type of the engine on which the module is installed (e.g. RTM322).

(117) TRANSFERS

The installations and removals of the module are recorded in this table.

The transfers are recorded only:

In case of an installation on another engine

- When the module is removed to be sent in a MC or a RC.
- Delivered, Installed or Removed: Indicate the type of transfer operation (delivered, installed or removed).

Engine or Core Module: Operation since new or overhaul. If there has been no overhaul, cross “or overhaul”. Else cross “new or”

Variant / Version: Enter the variant / version of the engine.

S/N: Enter the serial number of the engine.

H since new: Enter the total hours run since new or since overhaul by the engine or the core module.

Module since new or overhaul: Operation since new or overhaul. If there has been no overhaul, cross “or overhaul”. Else cross “new or”

- ✓ Hours: Enter the total hours run since new or since overhaul by the module.
- ✓ Cycles: If applicable, enter the total hours run since new or since overhaul by the module.
- ✓ O.E.I : For engines installed on twin-engine or three-engine aircraft only.
  - OEI 30s: Enter the time spent at the OEI 30s rating information recorded in section E of the engine log book.
  - OEI 2 min: Enter the time spent at the OEI 2min rating information recorded in section E of the engine log book.

Site: Enter the name of the site.

Date – Signature – Stamp: Dated, signed and stamped by an authorized technician.

(118) MODIFICATIONS AND SERVICE BULLETINS APPLIED BY OPERATOR

Modification Number: Enter the modifications (ex: CXXX) applied in the field or in a Maintenance Centre.

Service Bulletin: Enter the number of the Service Bulletins applied on the module and/or associated with the modifications specified in box MODIF.

The letter of the SB is mentioned only when required in the IDENTIFICATION Paragraph of the Service Bulletin.

In case of SB associated with AD, enter them together.

Date: Entre the date of application of the modification or the Service Bulletin.

Stamp: Enter the name of the technician who applied the modification or the Service Bulletin. Signed and stamped.

(119) AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR

Airworthiness Directive Number: Enter the number of the airworthiness directives (CN/AD) applied in the field or in a Maintenance Center.

If the AD concerns the interface accessory / engine, it applies to the module if the part of the interface belongs to the module; is then entered in the Module Log Card.

If the AD concerns all the interface, it is entered in section A of the Log Book and on the Module Log Card. In case of Airworthiness Directives associated with Services Bulletins, enter them together.

Authority: Enter the name of the reference authority of the AD.

DATE : Entre the date of application of the AD

Stamp : Signed and stamped by the competent personnel

Picture 22: Page FMFE 3/U – RTM322

115

N°

FICHE MATRICULE DE FOURNITURE ECHANGEABLE / *EXCHANGEABLE COMPONENT LOG CARD*

FMFE 3/U

IDENTIFICATION DE LA FOURNITURE / *IDENTIFICATION OF COMPONENT*	
Désignation / *Identity*	
Référence / *P/N*	
N° de série / *S/N*	
Responsable design / *Design authority*	
Type de moteur / *Engine Type*	

116

Cette fiche est affectée à tout module ou composant à vie-limite 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 SAFRAN HELICOPTER ENGINES).
Elle doit être insérée dans le livret du moteur sur lequel la

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 SAFRAN HELICOPTER ENGINES Overhaul Facility). This card should be inserted in the engine log book on which the component is installed.

MOUVEMENTS
TRANSFERS

Livraison, Pose ou Dépose *Delivered, Installed or Removed*	**Moteur** / *Engine* **ou** / *or* **CORE MODULE** *(UK engine)*			**Module Depuis neuf ou révision/***Since new or overhaul*							**Site**	**Date**	**Signature et Tampon** / *Stamp* **(voir NOTA 1)** *(see NOTE 1)*
	Variante *Variant*	**N° SERIE** *S/N*	**H. depuis neuf** *H since new*	**Heures** *Hours*	**Cycles**				**O.E.I**				
					Comp. Axial *Axial stages*	**Rout cent.** *Impeller*	**HP**	**PT**	**30s** (en s.)	**2 min** (min et s)			

117

ETAT DES MODIFICATIONS DE CLASSE 1 ET SERVICES BULLETINS APPLIQUES PAR L'UTILISATEUR
CLASS 1 MODIFICATIONS AND SERVICE BULLETINS APPLIED BY OPERATOR

N° MODIF *Modification Number*	**Service Bulletin**	**DATE**	**Signature et Tampon** / *Stamp*	**N° MODIF** *Modification Number*	**Service Bulletin**	**DATE**	**Signature et Tampon** / *Stamp*

118

CONSIGNES DE NAVIGABILITE APPLIQUEES PAR L'UTILISATEUR
AIRWORTHINESS DIRECTIVES APPLIED BY OPERATOR

N° CONSIGNES DE NAVIGABILITE *Airworthiness Directives Number*	**AUTORITE** / *Authority*	**DATE**	**Signature et Tampon/***Stamp*

119

Page FMFE 4/U - RTM322 : Picture 23

Page 4/U allows to indicate the maintenance performed, the life-limited or usage-limited parts replaced and any other information.

When a table is full, a new sheet (front + back page – pages 3 and 4) has to be used and the back page (page 4) filled in. The front page (page 3) has to be crossed after identification of supply. A letter has to be added to the No of the sheet. (Ex: the complementary sheet to FMFE #2 has to be numbered 2A)

(120) MAINTENANCE: Complete this table when a maintenance operation is performed on the module.

WORKS CARRIED OUT: Indicate the type of work carried out on the module (eg application of technical instructions, Service Bulletins, etc.). Record the increase of the use limits and indicate the document used (LS Number or reference of the MM for the Chapter 5).

CARRIED OUT:

- ✓ Hours: Enter the hours of the module by the date of the work carried out. If there has been no overhaul, enter the hours since new.
- ✓ Cycles: Enter the cycles values by the date of the work carried out. If there has been no overhaul, enter the cycles since new

Operator: Enter the name of the operator.

DATE – SIGNATURE: Enter the date and Name of the technician who carried out the work: signed and stamped.

(121) LIFE LIMITED OR USAGE LIMITED PARTS REPLACED BY OPERATOR:

Complete this table when a life-limited part or a usage-limited part is replaced or when the use or life limit of a part changes.

Reason: Indicate the type of transfer operation (installed or removed).

Identity: Enter the designation of the part as per the MM or the SL.

PART NUMBER: Enter the part number of the part as per the MM or the SL.

S/N: Enter the serial number of the part. If there is no S/N, enter “/”.

HOURS

- ✓ TOTAL: Enter the total hours since new of the part.
- ✓ Remaining: Enter the remaining lifetime, in hours, of the part.

TOTAL CYCLES:

- ✓ Enter the different cycles consumed since new of the part : Axial, Impeller, HP, PT
- ✓ REMAINING: Enter the remaining lifetime, in cycles, of the part.

DATE – SIGNATURE: Enter the date and the name of the authorized technician who carried out the part transfer operation. Signed and stamped.

(122) REMARKS

Use this box to enter any remarks concerning the different operations carried out on the module.

Enter, if applicable, the new remaining lifetime in hours and cycles and creep damage resulting from the replacement of one or more Life-Limited Parts and / or Usage-Limited Parts and indicate, if necessary, the new remaining lifetime in Section E of the engine logbook.

Record in particular the resultant availability of the module if it is impacted by a change of use or life limit.

In case of removal and/or replacement, enter the type of oil used

Picture 23: Page FMFE 4/U – RTM322

FMFE 4/U

ENTRETIEN / *MAINTENANCE*

TRAVAUX EFFECTUES *WORKS CARRIED OUT*	**EFFECTUES** / *CARRIED OUT*					**Opérateur** *Operator*	**DATE / SIGNATURE**
	Heures *Hours*	**Cycles**					
		Comp. axial *Axial stages*	**Rouet cent.** *Impeller*	**HP**	**PT**		

120

PIECES A VIE LIMITE OU A LIMITE D'UTILISATION REMPLACEES PAR L'UTILISATEUR
LIFE LIMITED OR USE LIMITED PARTS REPLACED BY OPERATOR

Motif *Reason*	**DESIGNATION** *IDENTITY*	**REFERENCE** *PART NUMBER*	**N° SERIE** *S/N*	**HEURES** / *HOURS*		**TOTAL CYCLES**					**DATE / SIGNATURE**
				TOTAL	**DISPO.** *Remaining*	**Comp. axial** *Axial*	**Rouet cent.** *Impeller*	**HP**	**PT**	**DISPO.** *Remaining*	
Dépose *Removed*											
Pose *Installed*											
Dépose *Removed*											
Pose *Installed*											
Dépose *Removed*											
Pose *Installed*											
Dépose *Removed*											
Pose *Installed*											
Dépose *Removed*											
Pose *Installed*											
Dépose *Removed*											
Pose *Installed*											
Dépose *Removed*											
Pose *Installed*											

121

RENSEIGNEMENTS PARTICULIERS / REMARKS

122

1.4. SECTION C: COMPONENTS RECORD

The section C comprises the following pages:

Page C1: Title page.

Pages C2/1 – C3/U/1 – C3/U/2 – EQUIPEMENT / ACCESSORIES RECORD at the time of delivery of the engine: **Picture 24**

Appendix 007693 (ENR1694)

Flexible pipes follow-up for certain engines

Only the components with a Log card are followed in pages C2/1.

The exhaustive list of those equipment not followed has to be provided in Appendix 007693 (ENR 1694) for new engines or after work in a Repair or Maintenance Center. It shall include all equipment mentioned in Chapter 5 of the MM or in the relevant LS, except filters and pipes.

The section C is withdrawn and archived as it is updated in a Repair or Maintenance Center.

(123) Service Letter / Maintenance Manual: Enter the reference and issue number of the SL and/or the Maintenance Manual serving as reference for the running time limits of the components.

(124) Engine: Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

TSN: Enter the total running hours of the engine since new.

TSO: Enter the total running hours of the engine since overhaul.

(125) Legend box:

0/N: NEW: 0 hour since new.

SE/OC: ON CONDITION: Component not subject to a running time limit.

0/OH: OVERHAUL: 0 HOUR since overhaul.

(126) Table listing the components at the time of delivery of the engine.

If one component is missing, enter « MANQUANT » or « MISSING ».

R: Enter the rank (chronological number) of the component.

IDENTITY: Enter the designation of the component.

P/N

- ✓ Manufacturer: Enter "/".
- ✓ Engine manufacturer: Enter the part number of the engine manufacturer (Safran Helicopter Engines).

S/N: Enter the serial number of the component, as instructed by CTB task 70-30-01-660-801.

TSN or TSO: Using the legend box (125), enter the total running hours of the component when installed on the engine. In the case of a first fit rejection, enter the hours already run; for instance, 26/N.

Removal forecast / Total H engine: Enter the total engine hours at which the component must be removed.

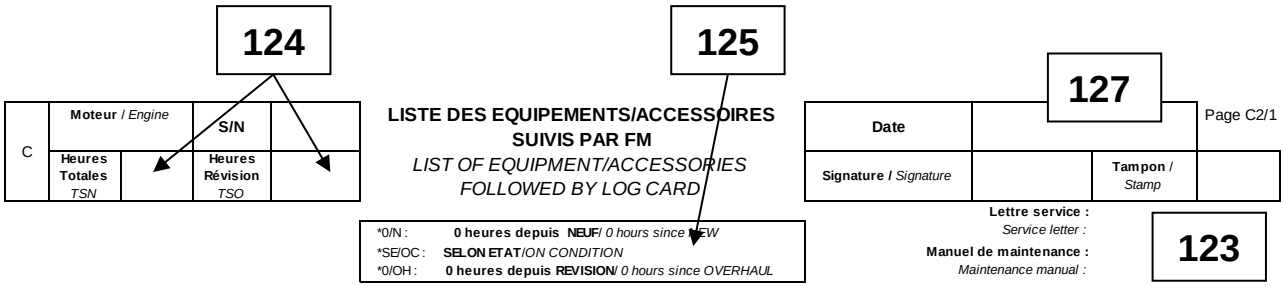
Calendar limit or limit date: Component subject to a calendar limit:

For a new component, for overhaul or after restoration of a full calendar time: Enter the total duration of the calendar limit as instructed by the relevant MM or Service Letter.

For repair, if the calendar time is not restored, record the usage limit date (month and year formatted mmm-yyyy) previously entered by the operator on the component log card when it was released to service, as instructed by the relevant MM or SL.

(127) DATE: Enter the date at which the engine log book is created.

Signature – Stamp: Signed and stamped by the authorised inspector.



R	DESIGNATION *IDENTITY*	REFERENCE / *P/N*		No Série S/N	Heures Equipement/accessoire à la Pose* *Hours equipment/accessory when installed* TSN or TSO*	dépose *Removal forecast* / Heures totales moteur *Total Hours engine*	Limite calendaire *Calendar limit* ou / *or* Date limite *Limit date*
		Fabricant *Manufacturer*	Motoriste *Engine Manufacturer*				
			126				

Picture 24: List of equipment/accessories monitored by FM at engine delivery

1.4.1. PAGES C3/U/1 – C3/U/2 – CHANGES:

Complete these pages when components are changed for the components followed in section C.

(128) Engine: Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine.

(129) Table listing the component changed.

R: Cross out the rank number assigned to the component changed in page C2/1. Enter this number here.

Identity and P/N: Enter the designation and the part number of the component changed.

Date of installation: Enter the date on which the component was installed.

Hours equip: Enter the total component hours since new or since overhaul.

S/N: Enter the serial number of the component

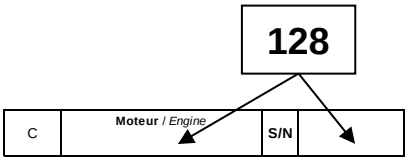
Hours engine: Enter the total engine hours since new

Removal forecast

Component subject to a running time limit: Enter the total engine hours after which the component must be removed.

Calendar limit

Component subject to a calendar time limit: Enter the limit date at which the component must be removed.



REMPLACEMENTS / *CHANGES*

*

R	Désignation et Référence *Identity and P/N*	Date pose *Date of installation*	Heures équip. *Hours equip.*	S/N	Heures moteur Hours engine	Prévision de dépose *Removal forecast*	Limite calendaire *Calendar limit*	Désignation et référence *Identity and P/N*	Date pose *Date of installation*	Heures équip. Hours equip.	S/N	Heures moteur *Hours engine*	Prévision de dépose *Removal forecast*	Limite calendaire *Calendar limit*

129

Picture 25: Pages C3/U/1 – REPLACEMENT

1.4.2. EQUIPMENT RECORD, 007693 (ENR1694): PICTURE 26

(130) Engine: Enter the family / type / variant / version of the engine.

(131) Serial Number: Enter the serial number of the engine

(132) Date: Enter the date.

(133) Signature: signed by the authorised inspector.

(134) Stamp: corresponding stamp.

(135) DESIGNATION: enter the name of the equipment in French

(136) IDENTITY: enter the name of the equipment in English

(137) P/N

Enter the Safran Helicopter Engines P/N of the equipment. If there is no Safran Helicopter Engines P/N, enter the Manufacturer /N. Enter “NON VISIBLE” or “NOT VISIBLE” when the P/N and/or S/N are not visible

(138) S/N: enter the individual S/N of the equipment. Enter “NON VISIBLE” or “NOT VISIBLE” when the P/N and/or S/N are not visible

ANNEXE_LISTE DES EQUIPEMENTS/ACCESSOIRES NON SUIVIS PAR FM
APPENDIX_LIST OF EQUIPMENT/ACCESSORIES NOT FOLLOWED BY LOG CARD

POUR INFORMATION / *FOR INFORMATION*

Moteur / *Engine*	**N° de série /** *Serial Number*	**Date /** *Date*	**Signature /** *Signature*	**Tampon /** *Stamp*
130	131	132	133	134

DESIGNATION	*IDENTITY*	**REFERENCE** *P/N*	**N° Série** S/N
135	136	137	138

Picture 26: Equipment list

SECTION C, a follow-up sheet for flexible pipes has to be inserted **Picture 27**, for the following engine types:

TURMO III C4
TURMO IV C
TURMO III C7
ASTAZOU II
ASTAZOU XVI

(139) **Engine:** Enter the family / type / variant / version of the engine.

(140) **S/N:** Enter the serial number of the engine

(141) **ITEM:**

Chapter: enter the ATA chapter/section/subject of the Spares Catalog.

Item: enter the item number.

(142) **Manufacturer P/N:** enter the Manufacturer P/N of the pipe.

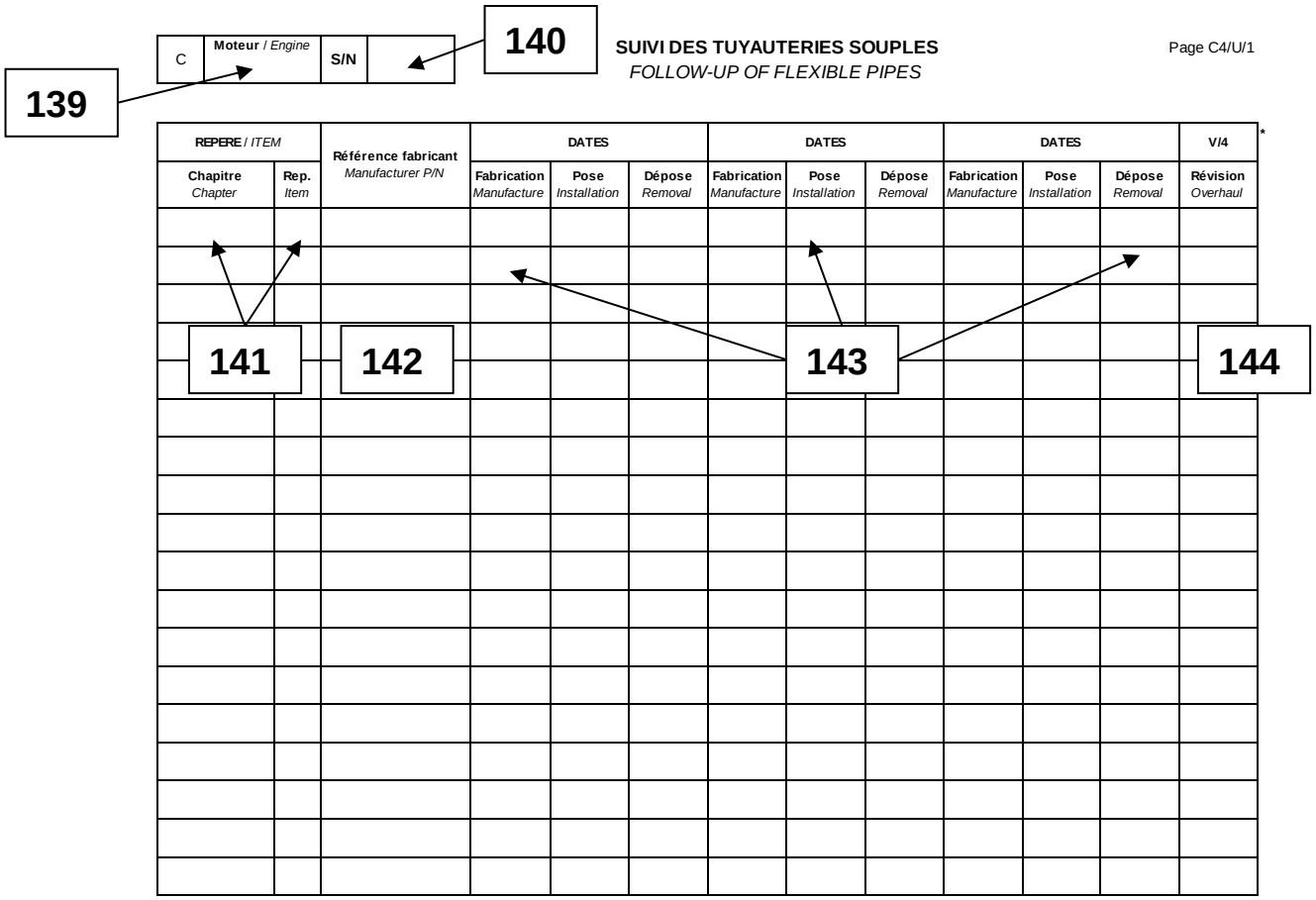
(143) **DATES:**

Manufacture: enter the manufacture date of the pipe.

Installation: enter the date of installation of the pipe on the engine.

Removal: enter the provisional removal date of the pipe according to the terms of the General Service Letter N° 626/77.

(144) **V/4: N/A.**



Picture 27: Flexible Piping Tracking

1.5. SECTION D: AVAILABILITY STATUS

The Section D only concerns non-modular engines including TURMO III C4 / IV C. It comprises the following pages:
Page D1: Title page.
Page D2/1: AVAILABILITY STATUS: Picture 28. This page is completed when the engine is delivered, new, after overhaul or after repair.

(145) **Engine:** Enter the family / variant / type / version of the engine.

S/N: Enter the serial number of the engine

(146) **TBO:**

Non-modular engine: Enter the name of the engine.

Hours:

- ✓ Total: Enter the total time between overhauls of the engine in hours.
- ✓ Consumed: Enter the total running hours of the engine since new or overhaul by the date of the status of availability.
- ✓ To be run: Enter the engine TBO hours remaining by the date of the status of availability (Total minus Consumed).

Calendar limit in months and years

(147) **OPERATION LIMITATION**

Identity: Enter the designation of the usage-limited part.

P/N: Enter the part number of the usage-limited part.

S/N: Enter the serial number of the usage-limited part.

Hours

✓Consumed: Enter the total hours consumed since the part entered service.
✓To be run: Enter the remaining usage lifetime, in hours, of the part.

Cycles

✓Consumed: Enter the total cycles consumed since the part entered service.
✓To be run: Enter the remaining usage lifetime, in cycles, of the part.

(148) **Service Letter No: Enter the number of the Service Letter serving as reference for the running time limits of the engine and its different components.**

D	**Moteur /** *Engine*	**N°** *S/N*	

145

ETAT DE DISPONIBILITES / *AVAILABILITY STATUS*

Page D2/1

Les potentiels du moteur non-modulaire et les vies limites des pièces peuvent évoluer en accord avec l'Autorité compétente et le constructeur. Elles sont communiquées à l'utilisateur par documents officiels. Noter les heures et /ou cycles effectués.

TBO's of non modular engines and parts life limits may be changed in agreement with the competent Authority and the manufacturer. These are issued to the operator via official documents. Record the running hours and/or cycles consumed.

1 - POTENTIEL / *TBO*							**2 - LIMITE D UTILISATION** / *USAGE LIMIT*						
Moteur non modulaire *Non modular engine*	**Heures** *Hours*			**Calendaires en mois et années** *Calendar in month and years*			**Désignation** *Identity*	**Référence** P/N	**N° Série** *S/N*	**Heures** *Hours*		**Cycles**	
	Total	**Effectué** *Consumed*	**Disponible** *To be run*	**Total**	**Effectué** *Consumed*	**Disponible** *To be run*				**Effectué** Consumed	**Disponible** *To be run*	**Effectué** Consumed	**Disponible** *To be run*

146 **147** **148**

Lettre service / *Service letter No*

Picture 28: Page D2/1 : Availability status

Page D3/1: AVAILABILITY STATUS (Cont'd):. Picture 29

This page is completed when the engine is delivered.

(149) Engine: Enter the family / variant / type / version of the engine.

S/N: Enter the serial number of the engine

(150) OEI (One Engine Inoperative)

Enter the number or the minutes

For engines installed on twin-engine or three-engine aircraft only.

Total: Enter the total time available for operation at this rating.

Consumed: Enter the time run at this rating.

To be run: Enter the time remaining for operation at this rating.

(151) LIMIT LIFE

Identity: Enter the designation of the part.

P/N: Enter the part number of the part.

S/N: Enter the serial number of the part.

Hours:

- ✓ Consumed: Enter the total hours consumed since the part entered service.
- ✓ To be run: Enter the remaining usage lifetime, in hours, of the part.

Cycles:

- ✓ Consumed: Enter the total cycles consumed since the part entered service.
- ✓ To be run: Enter the remaining usage lifetime, in cycles, of the part.

(152) RESULTING LIFE

Hours: Enter the smallest value, in hours, between the "to be run" columns of tables 1, 2, 3 and 4.

Cycles: Enter the smallest value, in hours, between the "to be run" columns of tables 1, 2, 3 and 4.

OEI: For engines installed on twin-engine or three-engine aircraft only. Enter the remaining OEI. Refer to Appendix 3.

Calendar: Enter the limit date at which the engine must be removed for end of calendar time.

Date: Enter the date at which the resulting life table is completed.

Signature – Stamp: signed and stamped by the authorised inspector.

(153) Maintenance Manual: Enter the reference and issue number of the Maintenance Manual serving as reference for the family / type / variant / version of the engine indicated in box (149).

Page D3U/1: AVAILABILITY STATUS.

This page is filled when releasing the engine in a maintenance centre. The rules are the same as for the Availability Status in a Repair Centre

149

D	Moteur / *Engine*	N° *S/N*	

ETAT DE DISPONIBILITES (suite) / *AVAILABILITY STATUS (continuation)*

3 - OEI* *One engine inoperative*			4 - VIE LIMITE / *LIMIT LIFE*						
Total	Effectué *Consumed*	Disponible *To be run*	Désignation *Identity*	Référence *P/N*	N° Série *S/N*	Heures *Hours*		Cycles	
Nombre ou Minutes *Number or Minutes*						Effectué *Consumed*	Disponible *To be run*	Effectué *Consumed*	Disponible *To be run*

150

151

5 - DISPONIBILITE RESULTANTE / *RESULTING LIFE*						
Heures *Hours*	Cycles		* OEI Nombre ou minutes	Calendaire *Calendar*	Date	Signature *Signature*
	Gén. *GG*	TL *F.T*				
						Tampon *Stamp*

152

La disponibilite résultante du moteur complet en heures et cycles (tableau 5) est la plus petite des valeurs disponibles figurant dans les tableaux 1, 2 et 4.
Calendaire selon tableau 1.
OEI* selon tableau 3

The resulting life for the complete engine in hours and / or cycles (table 5) is the smaller of the values shown in tables 1 , 2 and 4.
Calendar in accordance with table 1
OEI in accordance with table 3*

***Dénomination voir Guide 008264 (U441)** /
**Designation refer to Guide 008264 (U441)*

Manuel de maintenance / *Maintenance Manual* :

153

Picture 29: Page D3/1 : Availability status

1.6. SECTION E: OPERATION, MAINTENANCE AND OVERHAUL

If the 25 pages of the section E are full, it is advisable to create a new and complete section E and to number the pages from 26 to 50.

The Section E comprises the following pages:

Page E1: Title page.

Page E2/1: ENGINE RUNNING HOURS- Picture 30

This page gives the relevant information on the engine operating status at the time of delivery of the engine, new, after overhaul or after repair.

(154) **Engine:** Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(155) **ENGINE OPERATION**

Date: Enter the date at which the engine log book was created.

Total hours since new: Enter the total hours run since new by the engine.

Total cycles since new (GEN / TL): Enter the total cycles run since new by the engine. If history is not available, enter "/".

Remaining TBO:

- ✓ Hours: Enter the remaining hours (total TBO hours minus hours run since new or overhaul).

Before calculating the remaining TBO hours of the engine, make sure that the TBO recorded in each modular log card corresponds to the one of the concerned variant. Refer to the correspondent MM Chapter 5.

If the TBO is different between 2 variants, apply the following:

Remaining TBO2 = Remaining TBO1 * (TBO2 / TBO1) within the limits of TBO 2

Example 1

Module PN A having consumed 2000h on variant 1 with TBO1= 3000h , then installed on variant 2 with TBO2 = 4000h

*Remaining TBO2 = Remaining TBO1 * (TBO 2/ TBO1) within limits of TBO2*

i.e.: (3000-2000)(4000/3000) = 1333.33 hrs*

Example 2

Module PN A having consumed 100h on variant 2 with TBO2= 4000h then installed on variant 1 with TBO1 = 3000h

*Remaining TBO1 = Remaining TBO2 * (TBO1 / TBO 2)) within limits of TBO1*

i.e. : (4000-100)(3000/4000) = 2925 hrs*

With this value, the remaining consumable TBO would be 100 + 2925 = 3025 hrs greater than TBO1 = 3000 hrs, then the remaining TBO on variant 1 is limited to 2900 hrs (3000-100).

- ✓ Cycles

GG: Enter the remaining gas generator cycles (total TBO cycles minus cycles run since new or overhaul).

FT: Enter the remaining free turbine cycles (total TBO cycles minus cycles run since new or overhaul).

- ✓ OEI (Thermal / Torque)

OEI 1: Enter remaining time at the OEI 1 rating (total TBO minus time run).

OEI 2: Enter remaining time at the OEI 2 rating (total TBO minus time run).

Note « / » for OEIs that do not exist or of which limit values do not exist.

For Arriel 1 equipped with SCP boxes, note below the table:

The SCP box Serial Number,

Max value red on the SCP box before removal = value red when installed + engine remaining hours

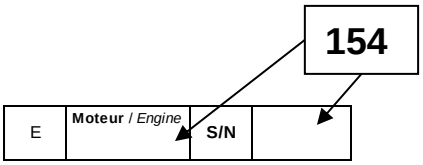
Refer Appendix 3 **for designations of OEI 1 and 2.**

- ✓ **Creep damage – point or %:** Enter the creep damage rate available when the engine is delivered (for certain engines only).

(156) New totals : enter from Table 155

New total since new

New remaining



FONCTIONNEMENT MOTEUR
ENGINE RUNNING

Date	Total en heures depuis neuf *Total hours since new*	Total en cycles depuis neuf *Total cycles since new*		Potentiel disponible *Remaining T.B.O*							
				Heures *Hours*	Cycles *Cycles*		OEI *Dénomination voir Guide 008264 (U441) / *Designation refer to Guide 008264 (U441)				Endofluage Point ou % *Creep Damage Point or %*
							OEI Thermique / *Thermal OEI*		OEI Couple / *Torque OEI*		
		GEN *GG*	TL *F.T*		GEN *GG*	TL *F.T*	OEI 1*	OEI 2*	OEI 1*	OEI 2*	
				155							

Nouveau Total depuis neuf : New total since new	156
Nouveau potentiel disponible : New Remaining T.B.O	

Picture 30: Page E2/1 : Engine operation

Page E3/1: OPERATION, MAINTENANCE AND OVERHAUL at the time of delivery: Picture 31

(157) Engine: Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(158) ENGINE OPERATION

E.C.U.

- ✓ Cycles (GG and FT)
  In new production, write a / in the column.
- ✓ Creep damage
  In new production, write a / in the column.

(159) Calendar limit – Month/Year :

Day/month/year format is acceptable.

In New Production, enter the total duration of the calendar limit of the engine, in accordance with the installation date on aircraft.

For repair and overhaul

If the calendar time is not restored, record the usage limit date of the engine, in months and years (date of first entry into service of the engine + calendar limit).

If the calendar time is restored, enter « Installation + 15 years »

When the module has no calendar limit, enter « / »

(160) Periodic inspection carried out: Enter the type of periodic inspection carried out during the repair process, in accordance with the Maintenance Manual. Note "Up to PI XXX hrs included"

For the MCO engines only note done in French "Jusqu'à VP XXX hrs incluses"

Particular case: MAKILA 2 only, note PI 4000 hrs even after overhaul.

PI 4000 hrs included or VP 4000 hrs incluses

Do not mention any Periodic Inspection when the engine is overhauled

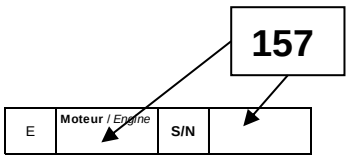
(161) Observations – Works carried out: Indicate the work carried out.

For a new engine: Enter the number of the technical specification (CCT) against which the engine is acceptance tested.

For an overhauled / repaired engine: this column is filled in at each repair/overhaul of the engine at a repair centre. The number of the file against which the engine is repaired / overhauled as well as the Customer details may be mentioned here.

(162) Location: Enter the usual name of the site where the engine is manufactured or overhauled / repaired.

(163) Signature – Stamp: signed and stamped by the manufacturer / the approved overhaul / repair center.



UTILISATION, ENTRETIEN REVISION
OPERATION, MAINTENANCE, OVERHAUL

Calculateur *E.C.U*			**Limite calendaire** *Calendar limit* **Si case vierge : A renseigner par l'utilisateur en fonction de la date de pose sur aéronef.** *If box is empty : It is to be filled in by the operator according to the date of installation on the aircraft.*	**Type de visite périodique effectuée** *Periodic inspection carried out*	**Observations - Travaux effectués** *Observations - Works carried out*	**Lieu** *Location*	**Signature /** *Signature*	**Tampon /** *Stamp*
Cycles *Cycles*		**Endoflua ge Point ou %** *Creep Damage*						
GEN *GG*	**TL** *F.T*		**Mois/Année** *Month/Year*					
158			**159**	**160**	**161**	**162**	**163**	

Picture 31: Page E3/1 : Operation, maintenance and overhaul on delivery

Page E2/U/x: ENGINE RUNNING HOURS – Picture 32

These pages are filled in the user.

(164) **Engine:** Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(165) **Table giving the operating status of the engine.**

Date: Enter the date at which the table is updated.

Total hours since new: Enter the total running hours of the engine by the date at which the table is updated.

Total cycles since new (GEN – TL): Enter the total running cycles of each type by the date at which the table is updated.

Operating counter:

- ✓ Hours: Enter the flight hours consumed since the previous log book entry. If no flight hours have been consumed since the previous entry, write "/"
- ✓ Cycles:

GG: Enter the gas generator cycles consumed since the previous log book entry. If no flight cycles have been consumed since the previous entry, write "/"

FT: Enter the free turbine cycles consumed since the previous log book entry. If no flight cycles have been consumed since the previous entry, write "/"

- ✓ Creep damage : enter the creep damage consumed

H2 HIP / SARM : Enter the use rate of the HIP /SARM power rating (for certain engines only, cf. Appendix 3).

Remaining TBO

- ✓ Hours: Enter the remaining hours. This is the smallest value of availability in hours of the modules as calculated at section B – Log Card.

Before calculating the remaining TBO hours of the engine, make sure that the TBO recorded in each modular log card corresponds to the one of the concerned variant. Refer to the correspondent MM Chapter 5. The rules to be used and the examples are described in section E2/1 above.

- ✓ Cycles. This is the smallest value of availability in cycles:

GG: Enter the remaining gas generator cycles (total TBO cycles minus cycles run since new or overhaul).

FT: Enter the remaining free turbine cycles (total TBO cycles minus cycles run since new or overhaul).

- ✓ OEI (Thermal – Torque)

OEI 1: Enter remaining time at the OEI 1 rating (total TBO minus time run since new or overhaul).

OEI 2: Enter remaining time at the OEI 2 rating (total TBO minus time run since new or overhaul).

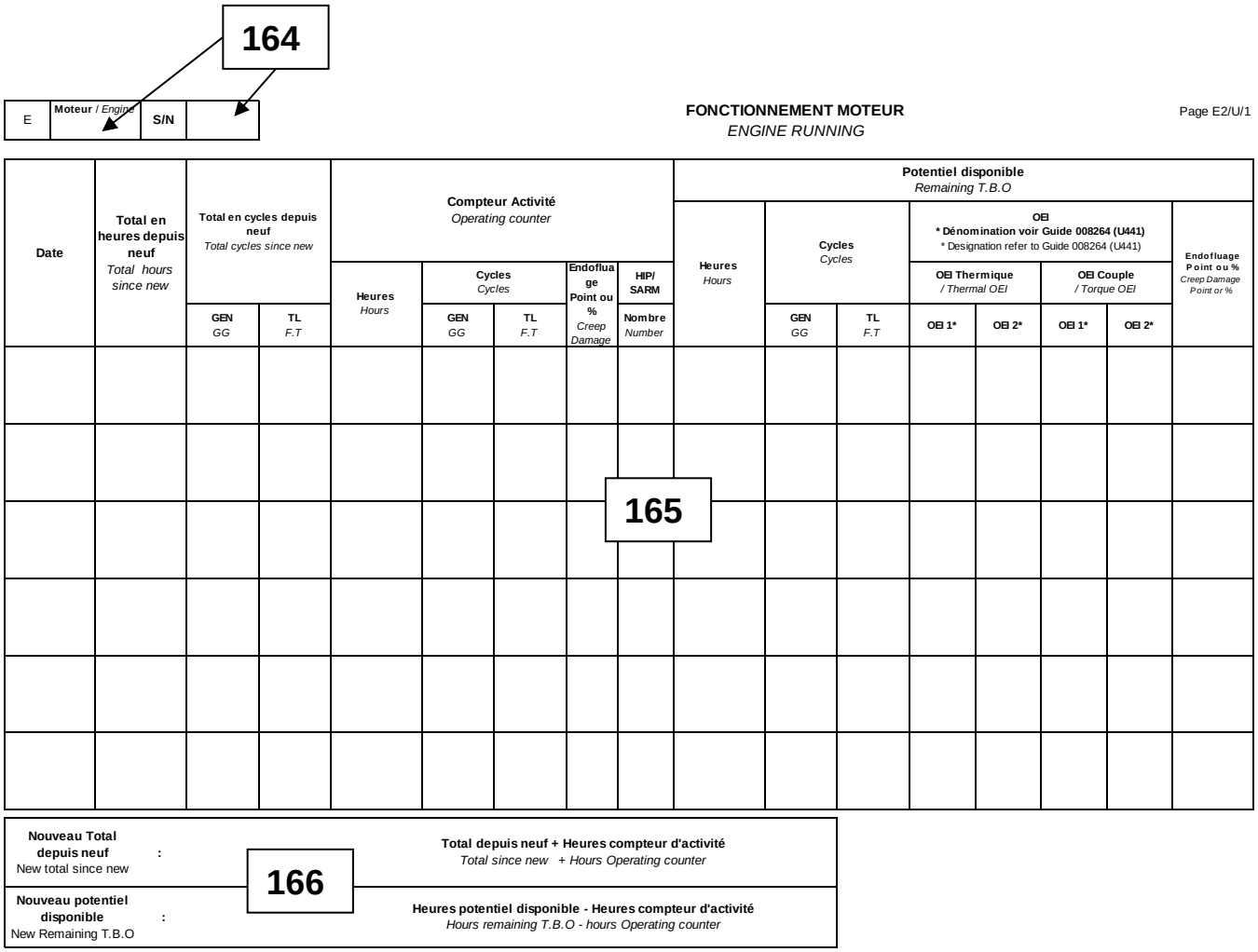
See Appendix 3 for OEI designations

- ✓ Creep damage: Enter the creep damage rate available when the engine is delivered (for certain engines only).

(166) **New totals : Calculation rules are given in these boxes. They are not to be filled in.**

New total since new

New remaining TBO



Picture 32: Page E2/U/x : Engine operation

Page E3/U/x: OPERATION, MAINTENANCE AND OVERHAUL –Picture 33

(167) Engine: Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(168) Table giving the operating status of the engine.

E.C.U. :

Note: in absence of the ECU or information from the ECU, write"/"

GG: Enter the gas generator cycles read on the ECU.

FT: Enter the free turbine cycles read on the ECU.

Creep damage: enter the creep damage read on the ECU.

Calendar limit – Month / Year :

Record the usage limit date of the engine, in months and years (date of 1st entry into service of the engine + calendar time).

Periodic inspection carried out: Enter the type of periodic inspection carried out.

Observations – Works carried out: Give a summary of work performed on the engine.

The wording used to describe the work must be the ones used in the Technical Publications (Maintenance or Repair / Overhaul): check and inspection, test, cleaning, storage, etc.

Record the increase of the use limits and indicate the document used (LS Number or reference of the MM for the Chapter 5)

Ensure to state the Work Order No. for reference

The quality records are performed in accordance to the G130.

In the case of specific requirements, they are defined in: N/A

For SERVICE CENTRE ONLY

As all information must be only recorded on the rear page of the module log card and Section "E", all worked performed must be summarised. The main points to ensure are included in this statement are:

Periodic Inspection : « All Scheduled Inspections up to and including XXX Hrs Inspections have been performed with the exception of tasks requiring engine installation on airframe or the none applicable ones. For details refer to attached VP/PI follow up summary».

Attach the pages of MCEN1 & MCEN2 of the VP Tracking Tool

Or

Periodic Inspection : « All Scheduled Inspections up to and including XXX Hrs Inspections have been performed with the exception of tasks requiring engine installation on airframe or the none applicable ones. For details refer to attached MM chap 05 sheet». Attach the pages of the MM.

All applied MTI if required in the MTI

The modules and main equipment (harness, FCU – HMU, valve assembly, pump) replaced

All implemented SB if required in the "IDENTIFICATION" paragraph

For REPAIR CENTRE ONLY

All information already mentioned at other sections or in the Log Cards shall not be repeated (ex: module or C section equipment exchanged, etc.)

Location: Enter the name of the operator.

Signature / Stamp: Name of the authorized technician who carried out the work. Signed and stamped.

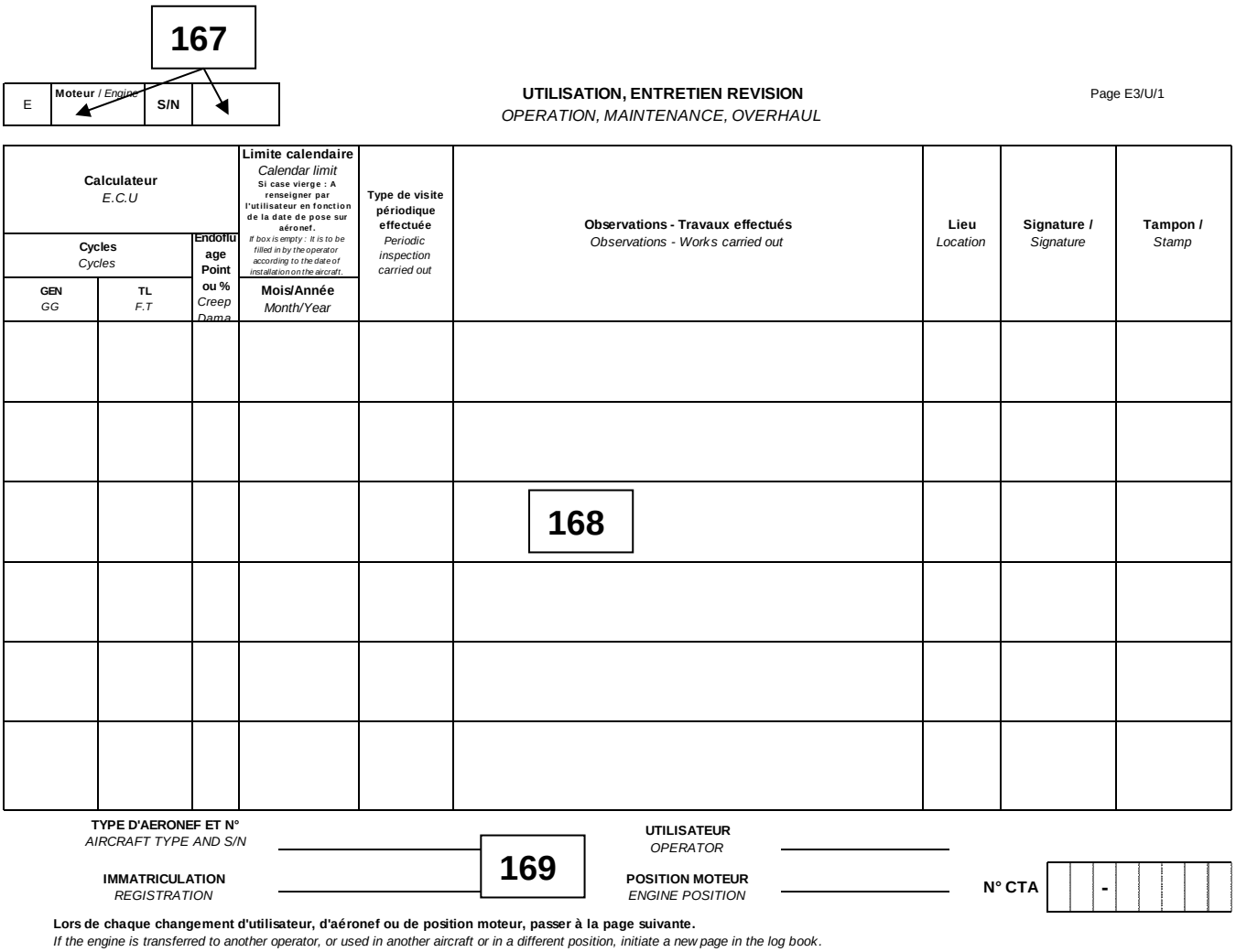
(169) AIRCRAFT TYPE AND S/N: Enter the type and the serial number of the aircraft on which the engine is installed.

REGISTRATION: Enter the registration number of the aircraft on which the engine is installed.

OPERATOR: Enter the name of the operator.

ENGINE POSITION: Enter the position of the engine: single-engine for an engine installed on single-engine aircraft, left or right for an engine installed on twin-engine aircraft, left, centre or right for a tri-engine aircraft.

N° CTA: Record N° to be entered by the civilian operators.



Picture 33: Page E3/U/x : Operation, maintenance and overhaul

1.7. SECTION E/322: OPERATION, MAINTENANCE AND OVERHAUL

If the 25 pages of the section E/322 are full, it is advisable to create a new and complete section E/322 and to number the pages from 26 to 50.

The Section E comprises the following pages:

Page E1/322: Title page.

Page E2/1/322: ENGINE RUNNING HOURS at the time of delivery: Picture 34

This page gives the relevant information on the engine operating status at the time of delivery of the engine, new, after overhaul or after repair.

(170) Engine: Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(171) ENGINE RUNNING:

Date: Enter the date at which the engine log book was created.

Total hours since new: Enter the total hours run since new by the engine.

Total cycles since new: Enter the total cycles run since new by the engine.

E.C.U.: Enter the cycles read on the ECU.

Periodic inspection carried out: Enter the type of periodic inspection carried out during the repair process, in accordance with the Maintenance Manual. Note “Up to PI XXX hrs included”.

For the MCO engines only note done in French “Jusqu'à VP XXX hrs incluses”

Do not mention any Periodic Inspection when the engine is overhauled.

Picture 34: Page E2/1/322 : Engine operation

E	Moteur / Engine	S/N	170

FONCTIONNEMENT MOTEUR
ENGINE RUNNING

Date	Total en heures depuis neuf *Total hours since new*	Total en cycles depuis neuf *Total cycles since new*				Calculateur *E.C.U*				Type de visite périodique effectuée *Periodic inspection carried out*
		Comp. Axial *Axial stages*	Rouet cent. *Impeller*	HP	PT	Cycles *Cycles*				
						Comp. Axial *Axial stages*	Rouet cent. *Impeller*	HP	PT	

171

Page E3/1/322: OPERATION, MAINTENANCE AND OVERHAUL at the time of delivery

Picture 35

(172) Engine: Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(173) Remaining TBO

Hours: Enter the remaining hours (total TBO hours minus hours run since new or overhaul).

Cycles:

- ✓ **Axial stages:** Enter the remaining axial stages cycles (total TBO cycles minus cycles run since new or overhaul).
- ✓ **Impeller:** Enter the remaining impeller cycles (total TBO cycles minus cycles run since new or overhaul).
- ✓ **HP:** Enter the remaining HP turbine cycles (total TBO cycles minus cycles run since new or overhaul).
- ✓ **PT:** Enter the remaining power turbine cycles (total TBO cycles minus cycles run since new or overhaul).

OEI

- ✓ **OEI 30s:** Enter remaining time at the OEI 30s rating (total TBO minus time run since new or overhaul).
- ✓ **OEI 2min:** Enter remaining time at the OEI 2 min rating (total TBO minus time run since new or overhaul).

(174) Calendar limit – Month/Year: In New Production, enter the total duration of the calendar limit of the engine.

Day/month/year format is acceptable.

For repair and overhaul

If the calendar time is not restored, record the usage limit date of the engine, in months and years (date of first entry into service of the engine + calendar limit).

If the calendar time is restored, enter « Installation + 15 years »

(175) Observations – Works carried out: Indicate the work carried out.

For a new engine: Enter the number of the technical specification (CCT) against which the engine is acceptance tested.

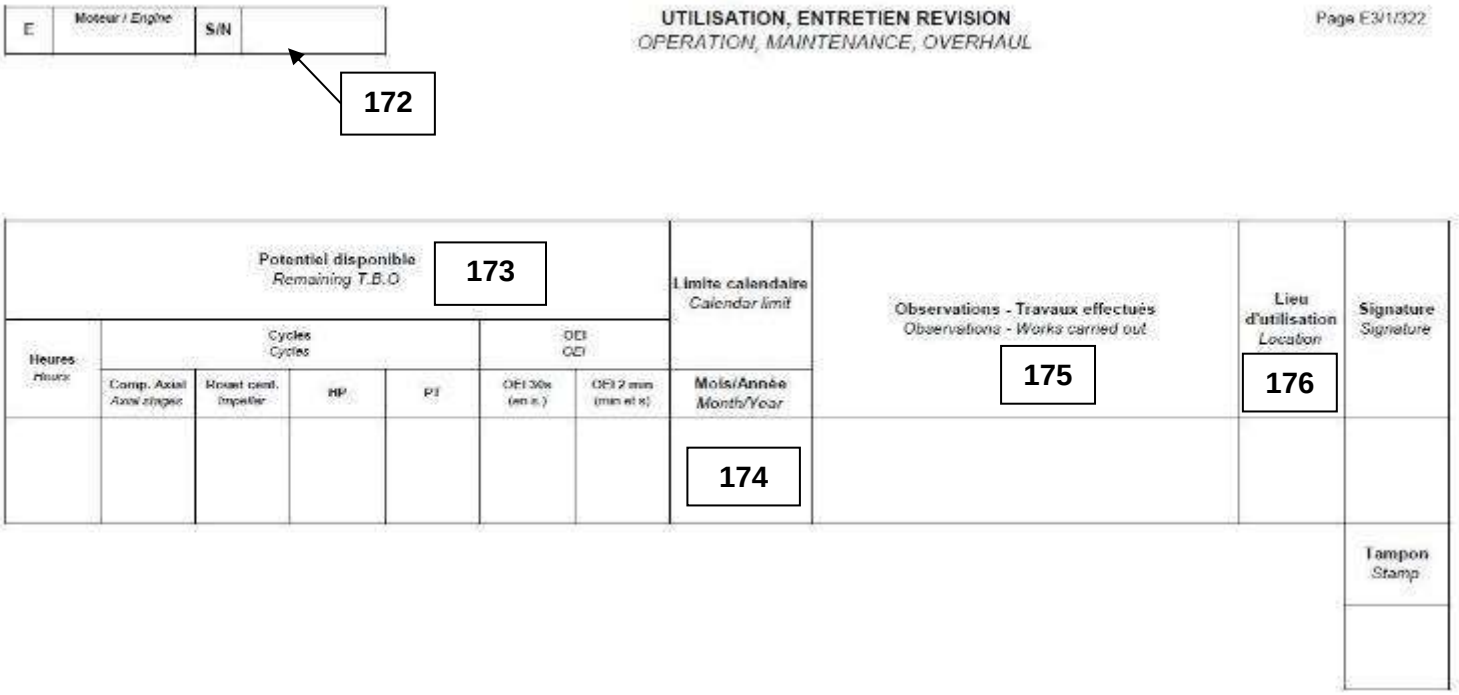
For an overhauled / repaired engine: this column is filled in at each repair/overhaul of the engine at a repair centre. The number of the file against which the engine is repaired / overhauled as well as the Customer details may be mentioned here.

(176) Location

Enter the usual name of the site where the engine is manufactured or overhauled / repaired.

Signature – Stamp: signed and stamped by the manufacturer / the approved overhaul / repair center.

Picture 35: Page E3/1/322 : Operation, maintenance and overhaul on delivery



E	Moteur / Engine	S/N	

172

UTILISATION, ENTRETIEN REVISION
OPERATION, MAINTENANCE, OVERHAUL

Page E3/1/322

Potentiel disponible *Remaining T.B.O* 173							Limite calendaire *Calendar limit*	Observations - Travaux effectués *Observations - Works carried out*	Lieu d'utilisation *Location*	Signature *Signature*
Heures *Hours*	Cycles *Cycles*				OEI *OEI*					
	Comp. Axial *Axial stages*	Roue cent. *Impeller*	HP	PT	OEI 30s (en s.)	OEI 2 min (min et s)	Mois/Année *Month/Year*	175	176	
							174			
										Tampon *Stamp*

Page E2/U/1/322: ENGINE RUNNING HOURS – Picture 36

These pages are filled in the the user.

(177) **Engine:** Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

(178) **Table giving the operating status of the engine.**

Date: Enter the date at which the table is updated.

Total hours since new: Enter the total running hours of the engine by the date at which the table is updated.

Total cycles since new: Enter the total running cycles of the engine by the date at which the table is updated

Operating counter:

Hours: Enter the flight hours consumed since the previous log book entry. If no flight hours have been consumed since the previous entry, write "/"

✓ **Cycles:**

Axial stages : Enter the axial stages cycles consumed since the previous log book entry, by the date at which the table is updated. If no flight cycles have been consumed since the previous entry, write "/"

Impeller: Enter the impeller cycles consumed since the previous log book entry, by the date at which the table is updated. If no flight cycles have been consumed since the previous entry, write "/"

HP: Enter the HP turbine cycles consumed since the previous log book entry, by the date at which the table is updated. If no flight cycles have been consumed since the previous entry, write "/"

PT: Enter the power turbine cycles consumed since the previous log book entry, by the date at which the table is updated. If no flight cycles have been consumed since the previous entry, write "/"

- ECU:
- Axial stages: Enter the axial stages cycles read on the ECU.
- Impeller: Enter the impeller cycles read on the ECU.
- HT: Enter the HP turbine cycles read on the ECU.
- PT: Enter the power turbine cycles read on the ECU.

Periodic inspection carried out: Enter the type of periodic inspection carried out.

177

Picture 36: Page E2/U/1/322 :Engine operation

E	**Moteur** / *Engine*	**S/N**	

FONCTIONNEMENT MOTEUR
ENGINE RUNNING

Page E2/U/1/322

Date	**Total en heures depuis neuf** *Total hours since new*	**Total en cycles depuis neuf** *Total cycles since new*				**Compteur Activité** *Operating counter*					**Calculateur** *E.C.U*				**Type de visite périodique effectuée** *Periodic inspection carried out*
							Cycles *Cycles*				**Cycles** *Cycles*				
		Comp. Axial *Axial stages*	**Rouet cent.** *Impeller*	**HP**	**PT**	**Heures** *Hours*	**Comp. Axial** *Axial stages*	**Rouet cent.** *Impeller*	**HP**	**PT**	**Comp. Axial** *Axial stages*	**Rouet cent.** *Impeller*	**HP**	**PT**	

178

Nouveau Total depuis neuf New total since new	**Total depuis neuf + Heures compteur d'activité** *Total since new + Hours Operating counter*
Nouveau potentiel disponible New Remaining T.B.O	**Heures potentiel disponible - (Heures compteur d'activité** *Hours remaining T.B.O - (hours Operating counter*

Page E3/U/1/322: OPERATION, MAINTENANCE AND OVERHAUL – Picture 37

(179) Engine: Enter the family / type / variant / version of the engine.

S/N: Enter the serial number of the engine

Table giving the operating status of the engine

(180) Remaining TBO:

Hours: Enter the remaining hours. This is the smallest value of availability in hours of the modules as calculated at section B – Log Card.

Cycles. This is the smallest value of availability in cycles:

- ✓ Axial stages: Enter the remaining axial stages cycles (total TBO cycles minus cycles run since new or overhaul).
- ✓ Impeller: Enter the remaining impeller cycles (total TBO cycles minus cycles run since new or overhaul).
- ✓ HT: Enter the remaining HP turbine cycles (total TBO cycles minus cycles run since new or overhaul).
- ✓ PT: Enter the remaining power turbine cycles (total TBO cycles minus cycles run since new or overhaul).

OEI:

- ✓ OEI 30s: Enter remaining time at the OEI 30s rating (total TBO minus time run since new or overhaul).
- ✓ OEI 2 min: Enter remaining time at the OEI 2min rating (total TBO minus time run since new or overhaul)

(181) Calendar limit – Month / Year:

Record the usage limit date of the engine, in months and years (date of 1st entry into service of the engine + calendar time).

Day/month/year format is acceptable.

(182) Observations – Works carried out: Give a summary of work performed on the engine.

The wording used to describe the work must be the ones used in the Technical Publications (Maintenance or Repair / Overhaul): check and inspection, test, cleaning, storage, etc.

Record the increase of the use limits and indicate the document used (LS Number or reference of the MM for the Chapter 5)

Ensure to state the Work Order No. for reference

For SERVICE CENTRE ONLY

As all information must be only recorded on the rear page of the module log card and Section “E”, all worked performed must be summarised. The main points to ensure are included in this statement are:

Periodic Inspection : « All Scheduled Inspections up to and including XXX Hrs Inspections have been performed with the exception of tasks requiring engine installation on airframe or the none applicable ones. For details refer to attached VP/PI follow up summary».

Attach the pages of MCEN1 & MCEN2 of the VP Tracking Tool

Or

Periodic Inspection : « All Scheduled Inspections up to and including XXX Hrs Inspections have been performed with the exception of tasks requiring engine installation on airframe or the none applicable ones. For details refer to attached MM chap 05 sheet». Attach the pages of the MM.

All applied MTI if required in the MTI

The modules and main equipment (harness, FCU – HMU, valve assembly, pump) replaced

All implemented SB if required in the “IDENTIFICATION” paragraph

For REPAIR CENTRE ONLY

All information already mentioned at other sections or in the Log Cards shall not be repeated (ex: module or C section equipment exchanged, etc.)

(183) **Location:** Enter the name of the operator.

(184) **Operator / Signature:** Name of the authorised technician who carried out the work. Signed and stamped.

(185) **AIRCRAFT TYPE AND S/N:** Enter the type and the serial number of the aircraft on which the engine is installed.

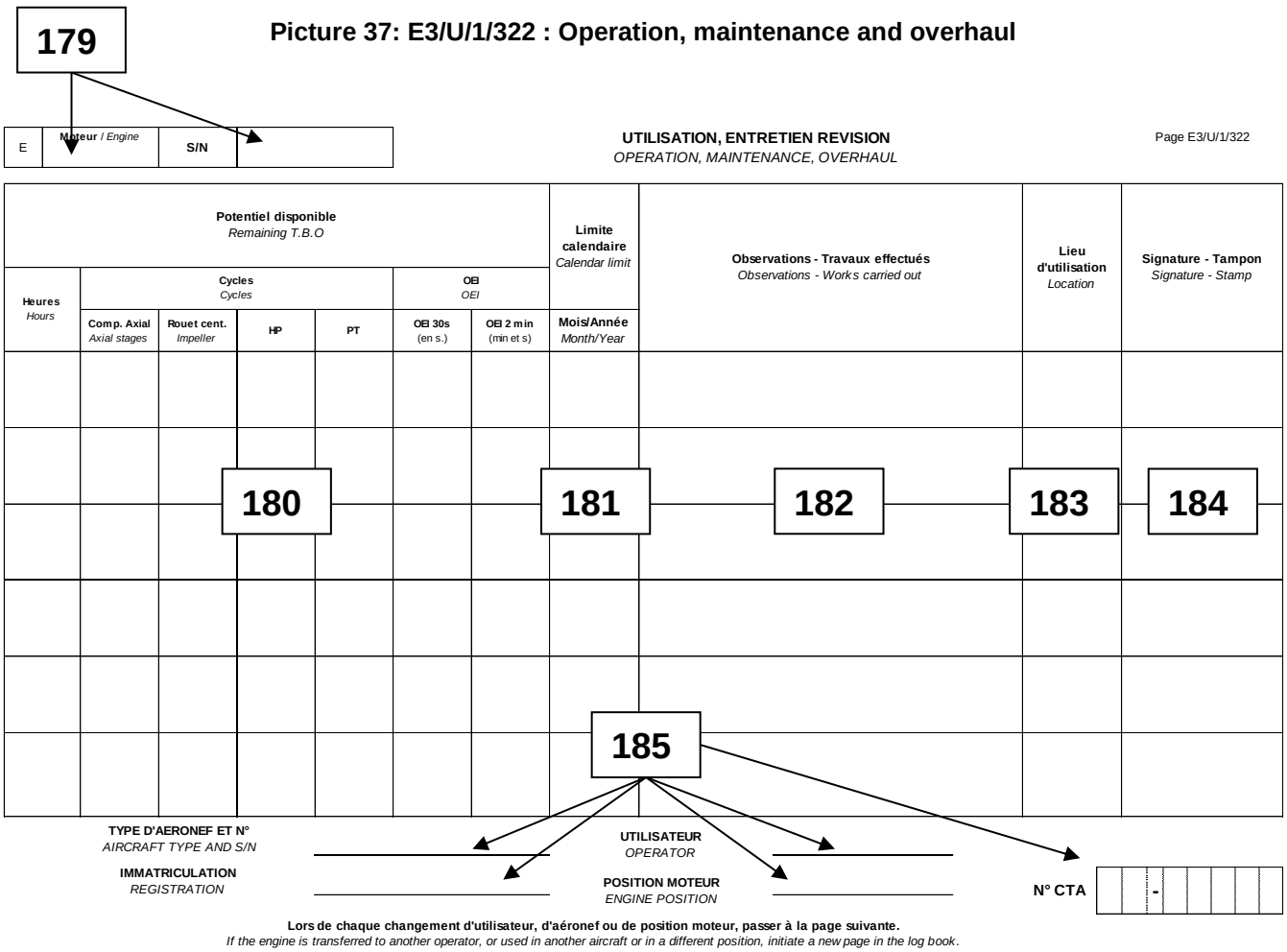
REGISTRATION: Enter the registration number of the aircraft on which the engine is installed.

OPERATOR: Enter the name of the operator.

ENGINE POSITION: Enter the position of the engine: single-engine for an engine installed on single-engine aircraft, left or right for an engine installed on twin-engine aircraft, left, centre or right for a tri-engine aircraft.

N° CTA: Record N° to be entered by the civilian operators.

Picture 37: E3/U/1/322 : Operation, maintenance and overhaul



APPENDIX 1: PAGES OF THE ENGINE LOG BOOK TO BE CREATED / UPDATED DEPENDING ON THE CONTEXT

SECTION	Description de la page	New	Repair / Overhaul	Maint Center / Level 3	Level 2	Operator Level 1
INTRODUCTION						
P1/1	Engine identification	1	1A	N/A	N/A	N/A
P2	Title page	M	M	M	M	M
P3	General instructions	M	M	M	M	M
P4	Composition and content	1	1A	N/A	N/A	N/A
SECTION A	*INSPECTION CERTIFICATE*					
Page A1	Title page	M	M	M	M	M
Page A2	Information about section A	M	M	M	M	M
Page A3/1	Inspection and storage certificates	1	1A	N/A	N/A	N/A
Page A4/U/1	Storage certificate	N/A	N/A	9	9	9
Page A4/U/2	Storage certificate	N/A	N/A	9	9	9
007764 (ENR1808)	Application of airworthiness directives and service bulletins at time of delivery	1	N/A	N/A	N/A	N/A
Page A5/1	Modifications and Service Bulletins incorporated at time of delivery	1	1A	N/A	N/A	N/A
Page A6/1	Airworthiness Directives applied at time of delivery	1	1A	N/A	N/A	N/A
Page A7/U	Modifications and Service Bulletins applied or removed by operator	N/A	N/A	5	5	5
Page A8/U	Airworthiness Directives applied by operator	N/A	N/A	5A	5A	5A
SECTION B	*MODULES RECORD*					
Page B1	Title page	M	M	M	M	M
Page B2/1	Modules record	1	1A	2	2	N/A
Page B3/U/1	Modules change	N/A	N/A	2	2	N/A
Page B3/U/2	Modules change	N/A	N/A	2	2	N/A
007782 (ENR1828)	Starting Overheat on Arrius 2F	1	1A	N/A	N/A	N/A

FMFE- 1/4 - 2/4	Exchangeable component log card	1	1A	N/A	N/A	N/A
FMFE- 3/4 - 4/4	Exchangeable component log card	N/A	N/A	2-4-5-5A-6-9	2-5-5A-6-9	5-5A-6-9
SECTION C	*EQUIPMENT RECORD*					
Page C1	Title page	M	M	M	M	M
Page C2/1/1	Equipment record	1	1A	3-8	3-8	3-8
Page C2/1/2	Equipment record	1	1A	3-8	3-8	3-8
Page C2/1/3	Equipment record	1	1A	3-8	3-8	3-8
Page C3/U/1	Changes	N/A	N/A	3-8	3-8	3-8
Page C3/U/2	Changes	N/A	N/A	3-8	3-8	3-8
007693 ENR1694	Components record	1	1A	N/A	N/A	N/A
Page C4/U/1	Follow-up of flexible pipes – As necessary	1	1A	4-5	5-6-7	5-6-7
FME	Log card - Front	1	1A	N/A	N/A	N/A
FME	Log Card - Successive positions and maintenance operations - Back	N/A	N/A	3-4-5-5A-6-9	3-5-5A-6-9	3-5-5A-6-9
SECTION D	*AVAILABILITY STATUS*					
Page D1	Title page	M	M	M	M	M
Page D2/1	Availability status	1	1A	2-4	2	N/A
Page D2/U/1	Availability status	N/A	N/A	2-4	2	2
SECTION E	*OPERATION, MAINTENANCE AND OVERHAUL*					
Page E1	Title page	M	M	M	M	M
Page E2/1	Engine running hours	1	1A-2-3-4-5-6-7-8	N/A	N/A	N/A
Page E3/1	Operation, maintenance and overhaul	1	1A-2-3-4-5-6-7-8	N/A	N/A	N/A
E2/U/1	Engine running hours	N/A	N/A	2-3-4-5-5A-6-7-8	2-3-5-5A-6-7-8	2-5-5A-6-7-8
E3/U/1	Operation, maintenance and overhaul	N/A	N/A	2-3-4-5-5A-6-7-8	2-3-5-5A-6-7-9	2-5-5A-6-7-8

NOTE: Refer to the guide to complete the page concerned.

1 **:** Creation center

1A: Update in a Safran Helicopter Engines -approved repair / overhaul

2 **:** Change of module

3 **:** Change of component

4 **:** Application of a Maintenance Technical Instruction

5 **:** Application of a Service Bulletin application

5A: Application of Airworthiness Directives or Verification of their

6 **:** Periodic inspection

7 **:** Operating status of the engine (daily or global)

8 **:** Change of electronic control unit

9 **:** Storage

N/A: Not Applicable

M: Template

APPENDIX 2: REFERENCE DOCUMENTS USED TO CREATE / UPDATE THE ENGINE LOG BOOK

SECTION	Description de la page	Neuf	Révision / Réparation	Ctre maint Echelon 3	Echelon 2	Utilisateur Echelon 1
INTRODUCTION						
P1/1	Engine identification	H	H	H	H	H
P2	Title page	M	M	M	M	M
P3	General instructions	M	M	M	M	M
P4	Composition and content	N/A	N/A	N/A	N/A	N/A
SECTION A	*INSPECTION CERTIFICATE*					
Page A1	Title page	M	M	M	M	M
Page A2	Information about section A	M	M	M	M	M
Page A3/1	Inspection and storage certificates	H	A	A	A	A
Page A4/U/1	Storage certificate	N/A	N/A	A	A	A
Page A4/U/2	Storage certificate	N/A	N/A	A	A	A
007782 (ENR1808)	Application of airworthiness directives and service bulletins at time of delivery	B-H	N/A	N/A	N/A	N/A
Page A5/1	Modifications and Service Bulletins incorporated at time of delivery	H	C-F-G	N/A	N/A	N/A
Page A6/1	Airworthiness Directives applied at time of delivery	B	B	N/A	N/A	N/A
Page A7/U	Modifications and Service Bulletins applied or removed by operator	N/A	N/A	C-G	C-G	C-G
Page A8/U	Airworthiness Directives applied by operator	N/A	N/A	B	B	B
SECTION B	*MODULES RECORD*					
Page B1	Title page	M	M	M	M	M
Page B2/1	Modules record	H	A1-F-G	N/A	N/A	N/A
Page B3/U/1	Modules change	N/A	N/A	A1-F-G	A1-F-G	N/A
Page B3/U/2	Modules change	N/A	N/A	A1-F-G	A1-F-G	N/A
007782 (ENR1828)	Starting Overheat on Arrius 2F	N/A	C	N/A	N/A	N/A
FMFE- 1/4 - 2/4	Exchangeable component log card	H	A-C-D-F-G	N/A	N/A	N/A

FMFE- 3/4 - 4/4	Exchangeable component log card	N/A	N/A	A-C-D-F-G	A-C-D-F-G	N/A
SECTION C	*EQUIPMENT RECORD*					
Page C1	Title page	M	M	M	M	M
Page C2/1/1	Equipment record	H	A-C-E-F-G	N/A	N/A	N/A
Page C2/1/2	Equipment record	H	A-C-E-F-G	N/A	N/A	N/A
Page C2/1/3	Equipment record	H	A-C-E-F-G	N/A	N/A	N/A
Page C3/U/1	Changes	N/A	N/A	A-C-E-F-G	A-C-E-G	A-C-E-G
Page C3/U/2	Changes	N/A	N/A	A-C-E-F-G	A-C-E-G	A-C-E-G
007693 ENR1694	Components record	H	A-C-E-F-G	N/A	N/A	N/A
Page C4/U/1	Follow-up of flexible pipes – As necessary	H	A-B-C-D-E-F-G	A-B-C-D-E-G	A-B-C-D-E-G	A-B-C-D-E-G
FME	Log card - Front	H	A-C-E-F-G	N/A	N/A	
FME	Log Card - Successive positions and maintenance operations - Back	N/A	A-C-E-F-G	A-C-E-F-G	A-C-E-F-G	
SECTION D	*AVAILABILITY STATUS*					
Page D1	Title page	M	M	M	M	M
Page D2/1	Availability status	A-D	A-D	N/A	N/A	N/A
Page D2/U/1	Availability status	N/A	N/A	A-D	A-D	A-D
SECTION E	*OPERATION, MAINTENANCE AND OVERHAUL*					
Page E1	Title page	M	M	M	M	M
Page E2/1	Engine running hours	H	A-B-C-D-E-F-G	A-B-C-D-E-F-G	A-B-C-D-E-F-G	A-B-C-D-E-F-G
Page E3/1	Operation, maintenance and overhaul	H	A-B-C-D-E-F-G	A-B-C-D-E-F-G	A-B-C-D-E-F-G	A-B-C-D-E-F-G
E2/U/1	Engine running hours	N/A	N/A	A-B-C-D-E-F-G	A-B-C-D-E-F-G	A-B-C-D-E-F-G
E3/U/1	Operation, maintenance and overhaul	N/A	N/A	A-B-C-D-E-F-G	A-B-C-D-E-F-G	A-B-C-D-E-F-G

Reference documents:

A. : Maintenance Manual - Chapter 05 **A1:** Maintenance Manual – Chapter 72

B. : Index of Airworthiness Directives – DGAC

C. : Index of Service Bulletins for modular engines – Index of change advice notes for non-modular engines

D. : Service Letter – Time Between Overhauls (TBO) – Engine calendar limit – Usage-Limited Parts (ULP).

E. : Service Letter – Accessories and components. Definition of the maintenance method: “Time In Service” or “On-Condition”.

F. : Illustrated Parts Catalog - IPC

G. : Spare parts Catalog.

H. : Engine log book input data.

N/A: Not Applicable. **M:** Template

APPENDIX 3: OEI NAMES PER ENGINE FAMILY – VARIANT

The OEI 1, OEI 2 and OEI 3 columns must be named as follows according to family / variant / version.
This table gives the designations of the counters. The values of the OEI stops must be checked according to chapter 5 of the maintenance manuals.

1. Engines concerned by thermal OEIs:

Moteur	Correspondence between the counters designations in the Maintenance Manual and the U441 guide (French/English)		
	Temps OEI 1 (High)	Temps OEI 2 (Low)	OEI 3
ANETO 1K	/	2,5 minutes / 2 1/2 minutes	Continuous OEI
ARRANO 1A	OEI 30 seconds	OEI 2 minutes	/
Arriel1 A1, A2	/	2,5 minutes / 2 1/2 minutes	Continuous OEI
ARRIEL1 B,D, D1	/	/	/
Arriel1 C, C1, C2	/	2,5 minutes / 2 1/2 minutes	Continuous OEI
Arriel1 E2	/	2,5 minutes / 2 1/2 minutes	/
Arriel1 K, K1	/	2,5 minutes / 2 1/2 minutes	Continuous OEI
ARRIEL1 M-M1-MN-MN1	Super Contingency Power	Régime 30 minutes / 30 minutes rating	/
Arriel1 S, S1	/	2,5 minutes / 2 1/2 minutes	Continuous OEI
ARRIEL 2 B-B1-B1A	/	/	/
Arriel2 C	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arriel2 C1	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous

Arriel2 C2	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arriel2 CPM	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arriel2 C2CG	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arriel2 D	/	/	/
Arriel2 E	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arriel2 H,N	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arriel2 S1	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arriel2 S2	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arrius1 A1, A2	2 1/2 minutes (PMU) / 2 1/2 minutes (Max. contingency)	Régime 30 minutes / 30 minutes rating	30 min/continuous OEI
Arrius1 M	2 1/2 minutes (PMU)	Régime 30 minutes	/
Arrius2 B1, B1A	/	2,5 minutes / 2 1/2 minutes	OEI continuous
Arrius2 B2	30 secondes / 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Arrius2 G1	/	2,5 minutes / 2 1/2 minutes	/
Arrius2 K1, K2	/	2,5 minutes / 2 1/2 minutes	OEI continuous
Arrius2 F	/	/	/
Arrius2 R	/	/	/
Makila1 A, A1	/	2,5 minutes / 2 1/2 minutes	30 min/continuous OEI
Makila1 A2	Régime « OEI 30 s » / 30-sec. OEI rating	Régime « OEI 2 min » / 2-min. OEI rating	30 min/continuous OEI
	OEI 30 secondes /	OEI 2 min. /	OEI continuous

Makila2 A	OEI 30 seconds	OEI 2 minutes	
Makila2 A1	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	OEI continuous
Ardiden1 H1	OEI 30 secondes / OEI 30 seconds	OEI 2 min. / OEI 2 minutes	Continuous OEI
ARDIDEN 1U	/	/	/
Ardiden3 G	/	2 minutes OEI	Continuous OEI
TM333 2B2	30-sec. OEI	2-min OEI	30-min OEI
TM333 2M2	/	/	/
Turmo III C4	Max Contingency Power (2.5 minutes)	Intermediate Contingency (continuous or 30 minutes)	/
Turmo IV C	Max Contingency Power (2.5 minutes)	Intermediate Contingency (continuous or 30 minutes)	/

2. Engines concerned by torque OEIs:

Engine	**Correspondence between the counters designations in the Maintenance Manual and the U441 guide (French/English)**	
	OEI 1	**OEI 2**
Arriel2 H, N	30 sec.OEI torque	2 min.OEI torque

2. QUALITY RECORDS

The quality records are performed in accordance to the G130.
In the case of specific requirements, they are defined in:

The inspector issuing the Approval for return to Service signs:

- Page A4/…, of section A, relating to the work certifying that the designated engine is compliant with the specifications of PART 145 approval and is suitable for return to service.
- The FMFEs as the inspector authorized by the relevant authority to issue the Approval for return to Service.

The repair centre draws up the authorized release certificate and perforates and inserts it into the Introduction part of the engine log book.

All the boxes to be signed shall include signature and stamp.

The repair centre completes the "MAINTENANCE" pages in duplicate; the original is sent to the user and a paper and/or .pdf copy is archived by the repair centre in the works file

The LMU and/or FMFE must be archived in PDF format in SAP using the formalism below:

For the LMU:

LB A CCC DDD SN EEEE

Example: LB 2 ARL 1E2 SN 5678

For the FMFE:

LC A MB CCC DDD SN EEEE

Example: LC 3 M1 ARL 1E2 SN 1234

Definition used:
LB = Logbook
LC = Logcard
M = For Module (no "O")
A = logcard or logbook number
B = Module n°
CCC = Family with 3 letters
DDD = Family variant
EEE = Serial Number Digit

3. TERMINOLOGY – DEFINITIONS

Return to service
This event is materialized by the 1st helicopter ground run following a maintenance operation (whatever the maintenance operation is). For the operations of return to service after storage, refer to the corresponding task in the Maintenance Manual

First entry into service
This event is materialized for a zero hour material by the 1st helicopter ground run regardless of the organization performing the ground run (aircraft OEM, maintenance center, operator, etc.).

Calendar limit commencement date
If the documentation accompanying the material does not include the date of 1st entry into service, the calendar limit commencement date retained will be the latest among the following:

- Date of manufacture
- Date of last overhaul
- Date of last repair that included procedures to reset the calendar limit
- Date of 1st flight as long as someone can confirm that this date is within 3 months from the date of first ground run

Starting date of calendar visit
The starting date of the 15-year calendar visit is the date of first entry into service after one of the following cases:

- New
- Restitution of the calendar limit
- Calendar visit 15 years
- Overhaul
-

- See G009 for any other term.

4. INITIALS – ABBREVIATIONS – ACRONYMS

AD	Airworthiness Directive
CCT	Cahier des Charges Technique (Technical Specification)
CTB	Common Techniques Book
EASA	European Aviation Safety Agency
EASA Form One	EASA Authorised Release Certificate
ECU	Electronic Control Unit
FAA	Federal Aviation Administration
FM	(*Fiche Matricule)* Component Log Card
FMFE	*(Fiche Matricule de Fourniture Echangeable)* Exchangeable Component Log Card
GSAC	Groupement pour la Sécurité de l'Aviation Civile (French Group for Civil Aviation Safety)
HIP/SARM	Hover Increased Power/Search And Rescue Mission
IPC	Illustrated Parts Catalogue
LLP	Life Limited Parts
LM	*(Livret Moteur)* Engine log book
MC	Maintenance Center
MCP	Maximum Contigency Power
OEI	One Engine Inoperative
RC	Repair Center
SL	Service Letter
SB	Service Bulletin
SCP	Super Contigency Power
SPC	Spare Parts Catalogue
TBO	Time Between Overhaul

TSN	Time Since New
TSO	Time Since Overhaul
ULP	Usage Limited Parts
VEMD	Vehicle and Engine Multifunction Display
BOOST	Electronic Logbook see 008389 (U797)
PRINT LMU	tool for an engine logbook with the information that is in BOOST

5. HISTORY OF CHANGES

Version	Date	Author	Purpose of the modifications
H	26/04/2012	Fabrice LABARRERE	Consideration of the conclusions of the LMU Committee N°4 of February 17th 2012
I	08/04/2014	Fabrice LABARRERE	Consideration of the conclusions of the LMU Committee of April 2013
J	27/04/2015	Fabrice LABARRERE	Integration of the « Potential » Service Letters
K	22/12/2015	Fabrice LABARRERE	Processing of the TBO extension with and without SB
L	15/06/2016	Fabrice LABARRERE	Implementation of new guide format U441 Consideration of the conclusions of the LMU Committee N°8 of April 2016
M	20/07/2016	Yann LE TOHIC	Consideration of the ENR0714_E Error correction in the new format
N	20/10/2016	Fabrice LABARRERE	Consideration of the latest versions of ENR 1808, ENR0714, ENR1694, ENR0696, ENR1814 and ENR1815 Calculation of the remaining TBO for variants with a different TBO
O	22 Aug 2017	Fabrice LABARRERE	Consideration of the conclusions of the LMU Committee N°9 of April 2017 Notation of hours and minutes – Change in the record of OEI values Precision on the use of ENR1808
P	27 Nov 2017	Fabrice LABARRERE	Deletion of Tab 2 of ENR1808
Q	20 Aug 2018	Kanhlagna KETAVONG	Taking into account the conclusions of the LMU Commission N°10 of 14 June 2018 - Information on binder standard - Scope of application of ENR1808 - Filling procedure in case of removal of the calendar limit replaced by a calendar visit - Addition of an illustration table and renumbering of figures
R	December 04, 2018	Kanhlagna KETAVONG	- Taking into account the conclusions of the LMU Commission N°11 of 27 September 2018 -Replacement of the filling procedure in case of deletion of the calendar limit replaced by a calendar visit by an organization chart -Update of the table of correspondences between the U441 and OEI guide denominations (appendix 3) -Deleting the P5 page
008264-3	March 13, 2019	Olivier DUMARTIN	Page 5 has been reintroduce pending the update of all documents related to this future deletion Switch to the OSR version of the document
008264-4	June 07, 2019	Olivier DUMARTIN	- -Appendix 3 Update of the table of correspondences between the U441 and OEI guide denominations (appendix 3) -Section A: 007764 (ENR1808) information on the status of Airworthiness Directives, Bulletins Services and Modifications; - § 1.1 : addition of the release document Envelope - Page A5/1 Basic TU followed by FM - OSR numbering

008264-5	May 05, 2020	Olivier DUMARTIN	-§2 Archiving in SAP of LMU or FMFE -§1 updating logigramme Calendar visit - Introduction of form 008957 (Maintenance operations performed in repair centres) - Page E3/U/x Application of VP form for MC 168 and 182 - Minor modification following LMU commission and QRQC 29166 CC 184957 - Updating of terms Work carried out §60, 83, 103, 160 and 171 - Processing of folders issued from BOOST - OEI names ANNETO 1K, ARRANO 1A et ARDIDEN 1U
008264-6	June 10, 2020	Olivier DUMARTIN	- Deleting the P5 page - Work carried out must be noted in French for the MCO engines and Module only - Particular case MAKILA 2 PI 4000hrs
008264-7	December 23, 2020	Jerome LEMAITRE	- Rule of hours - hundredths clarified. - Clarification of the rule for reissue of a document with mistakes. - Correction (in French) by adding the CTB reference to the equipment list. - Correction of Appendix 1: correction of codes.

6. BIBLIOGRAPHY

The applicable documents necessary to use this guide are available on the EngineLife Customer Portal. Website

6.1. REFERENCE DOCUMENTS

Reference documents used for creating and updating the engine log book:

- 007358 (ENR714) : Unique Engine Log book
- 007348 (ENR0696) : Exchangeable Component Log Card
- 007693 (ENR1694) : Equipment List
- 007764 (ENR1808) : Application of airworthiness directives and service bulletins at time of delivery
- 007770 (ENR1814) : Log Card RTM322 Core Module
- 007771 (ENR1815) : Log Card RTM322 Module
- 007782 (ENR1828) : Starting Overheat ARRIUS 2F Only

6.2. APPLICABLE DOCUMENTS

Applicable documents required to perform tasks hereafter are linked to this document through the EngineLife Customer Portal. website and OSR

GUIDE

INSTRUCTIONS FOR PREPARING AND UPDATING COMPONENT LOG CARDS

REFERENCE-VERSION :	"008175-4 (u015) "
PROPRIETARY PROCESS :	" SRV-05-MAINTAIN, REPAIR AND OVERHAUL PRODUCTS"
PROPRIETARY ORGANIZATION :	" D2S/MRO "

PURPOSE :

The purpose of this guide is to provide the necessary instructions for writing and updating personnel number (FM) sheets for equipment delivered by suppliers to SAFRAN HE or by SAFRAN HE to its customers (including spare parts and prototype "Flight Authorization" equipment).

SCOPE :

This guide is intended for those responsible for reparing and/or updating documents accompanying equipment for manufacturing, overhauls and repairs make by SAFRAN HE and external manufacture and repairs.

Warning: FM monitors accessories with time or calendar as well as accessories requiring special monitoring (e. g. digital calculator)

Note-

1. The need to establish the FM is notified, in new, on the definition document (article sheet or external supply sheet), and revision or repair on service Letter and/or maintenance manuel.

2. It applies within the framework of the EASA Production Approval Specifications for equipments intended for civil applications and RRD 100 for government equipment.

3. FM is a permanent document for the identification and the equipment technical inspection.

Its purpose is to know precisely and continuously the life of an individualized equipment by following:

His identification.

His initial state and the modifications made to it during its life.

The principal maintenance practice and product restoration make on this equipment

Ensure modifications check for complex equipment

To transcribe the existence of an operating limit.

TABLE OF CONTENTS

Note: If a chapter is not necessary, keep it and mention “not applicable”.

1. PROCESS

1.1. LOG CARD

1.1.1. FORM TO BE USED (FM)

- 007263 (ENR0441) Log Card Equipment, 007606 (ENR1567) Log Card Free wheel assembly Arriel1, Arriel2 and air intake Assembly ANETO or 007739 (ENR1759) ECU Makila 1 or 007784 (ENR1830) log Card C or 007785 (ENR1831) Log Card E

  Structure conform to RRD 100/02 specifications, i.e.

  Size A4 Landscape . Print both sides Return pages on small size

  - Paper: color “Chamois” or “white” blank, weight: 135 gsm ($^{+15}_{+0} gsm$), not perforated,

  For MTR390 requirement of the log cards as per the 008134 (LIS2260).

1.1.2. INFORMATION TO BE RECORDED ON THE FM

1.1.2.1. RULES

The printed text on the FM form must not be altered by the originator under any circumstance.

The FM must be accurately completed by the different persons entering data on it: in particular erasing, obliterating, staining and folding are not permitted.

No sheet should be stapled or glued to another sheet.

Any FM not inserted in the engine log book must be protected against risks of damage. It must be placed in a rigid envelope, ensuring its protection from physical damage (folding) and chemical damage (stains), unfolded or folded in half (A5 format). The equipment packaging must be large enough to place the envelope inside without folding.

In the event of a detected anomaly (deterioration, erroneous wording, loss, etc.), the FM can be re-issued by the site’s final inspection department according to the following conditions:

- Deteriorated FM:
FM is re-issued identical to the previous one by transmitter site final inspection or site identifying the anomaly. Cross out the old log card front page diagonally and write:
"DUPLICATA created on DD/MM/YYYY due to XXXXXXX"
Both FM are scanned into the log book computing archive.

- FM badly worded

After correction / inspection of the printing template by the supplier (e.g.: CCIH final inspection), FM is re-issued identical to the previous one by transmitter site final inspection or site identifying the anomaly.
Cross out the old log card front page diagonally and write :
"DUPLICATA created on DD/MM/YYYY due to XXXXXXX"
Both FMs are scanned for log book computer archives.

- FM absent or lost before equipment is put into service:
The customer (e.g: **new engine assembly/tests**) informs the supplier (e.g: CCIH) that the FM is missing. The FM is re-issued by the supplier. The FM will have the same order number as that which it replaces. To keep a record of the re-issue, the inspector draws up an SAP recommendation linked to the delivered product as per instruction 006968 (13DQ038000) with the indication “DUPLICATA” in the “DECISION/ACTION” tab and the indication “DUPLICATA” will be entered on the FM under order N° in the zone No.1 and the new FM will be scanned and attached to the issued SAP advice.

- FM absent or lost after equipment is put into service:
A new FM can be re-issued with a view to a specific declaration of loss by the Regulatory Authority in accordance with CP200. To trace the re-issued, It will be issued an SAP advice linked at product delivered according to instruction 006968 (13DQ038000) with the mention “DUPLICATA” in the “DECISION/ACTION”. The new FM shall be scanned and attached to the issued SAP advice. The indication "DUPLICATA" shall be written on the FM under order N° in the zone N°1.

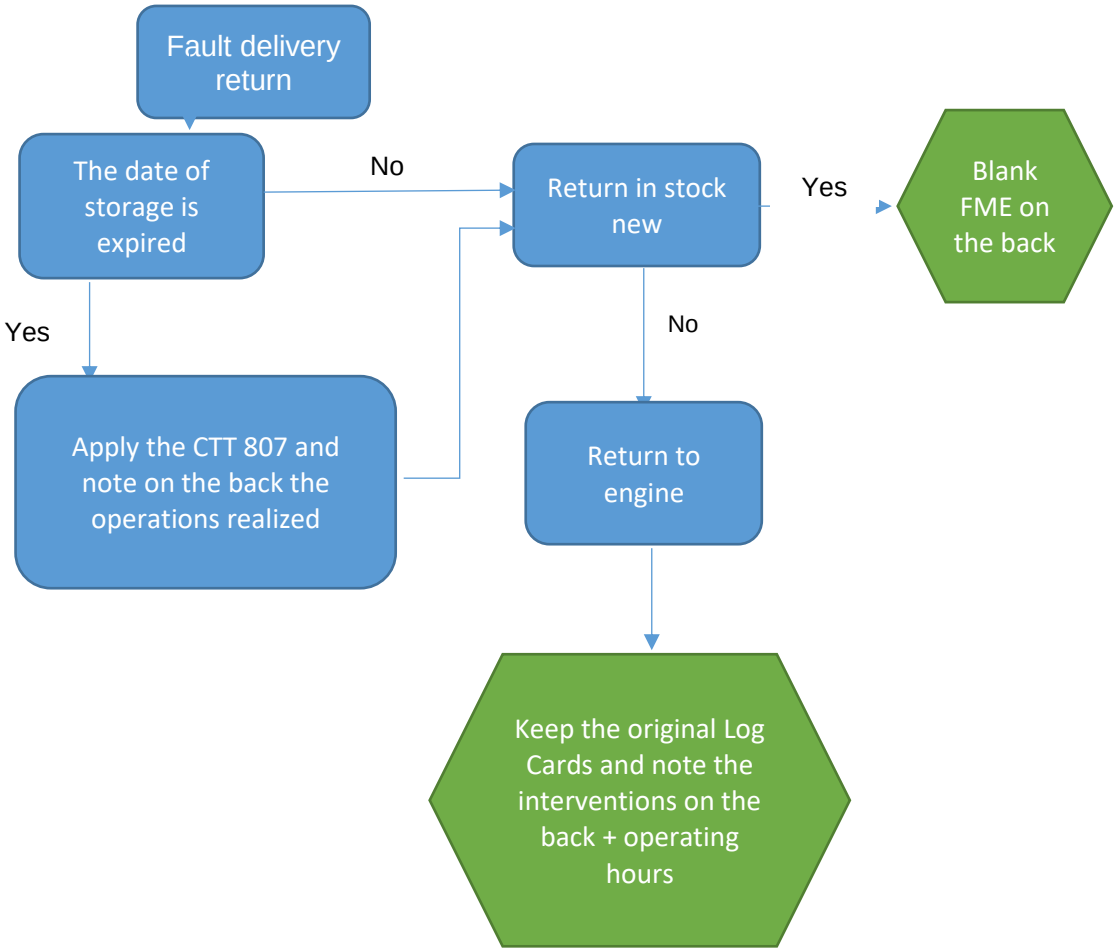
The FM can also be re-issued based on a photo of the equipment’s identification plate in the event of it being physically missing (only for new equipment not installed on an aircraft).

A FM has been introduced in this type of accessory between the entry into service and return in reparation. It will be re-issued by the maintenance center or the repair center as per the latest applicable standard. The creation date indicated will be that a first repair released with a FM.

When fault delivery of a production (without changing P/N)
Case No.1: the equipment will be put back in the new stock after overhauls.
If the Log cards is not damage and that the reverse side is blank, the Log Cards is not re-issued.
If not, the FM is re-issued according to the last applicable standard but carries the same release date as the initial and the reverse side remains blank (in zone 10).
Case No.2: the equipment will be remove on Its original engine (without changing the reference).
The original Log card is retained and at the end of the overhaul, on the back of the log cards will be added the hours of test benches and the works realized (In zone 10).
Except in special cases for MTR390 (see 008134 (LIS 2260)).

For CCIH new production customer returns following out of time storage (according to CCT 807), the works performed will have to be mentioned on the back of the FM (in area (10)).

LOGIGRAMME



1.1.2.2. FILLING THE FM

The areas are identified according to the FM attached as an appendix.

Front page: Figure **01** 007263 (ENR0441), Figure **03** 007606 (ENR1567), Figure **05** 007739 (ENR1759).

For MTR390 007784 (ENR1830) or 007785 (ENR1831) refer to the 008134 (LIS2260)

The component log cards are inserted in section C of the engine log book.

Areas (1), (2), (5), (6), (8/9) and (12) are to be filled in by the manufacturer.

(1). FM No.:

Enter the FM number: Enter No. 1 for the original issue of a FM, (even if it is a copy or during application of a civilisation service bulletin)

The successive issues of the different FMs of the same equipment unit must be kept in the engine log book.

REMARKS:

If following modification(s), the part number of the equipment unit is changed, a new FM must be issued, whatever the possibilities remaining for the previous FM, and numbered with the next consecutive chronological number (2, 3, etc.). It must then be added after the previous FM.

When the P/N is changed before entry into service (e.g.: Production Return), a new FM is filled in to replace the old one. It is given the No.1 and the new release date.

For the prototypes equipment, subject at transformation we apply:

Front of the log Cards:

- Sheet n°: increment the previous number (after transformation sheet No.1 becomes sheet No.2….)
- Date de fabrication/Date of manufacture: It's the date of the first manufacture of the product. This is not the transformation date.

(2). Material identification:

Name: Enter the designation, in French and in English, of the equipment unit concerned according to the item sheet in GEODE.

- Start writing the designation in the first cell to the left and leave a blank cell between each word. The designation (translation) in English must be indicated in brackets.
- **Parts list**: Not Applicable (unless specifically requested).
- **Manufacturer part number**: Enter the manufacturer part number of the equipment unit starting from the first cell on the left, leaving no cells empty, skip two cells and fill in the SAFRAN HE code No. (if the manufacturer is not SAFRAN HE)
- **Manufacturer code**: Enter the NATO code of the manufacturer (e.g. F0228 for SAFRAN HE).
- **Serial number**: Enter the serial number of the equipment unit, as per standard ST 00020. Handwriting is not allowed.
- - Do not enter the prefix : SER, ANR or BNR (S/N, A/N, B/N for parts manufactured with anterior versions of the standard ST 00020).

- - Do not enter the spaces and the non significant zeros.
- Enter all the other alphanumeric characters (letters or number), “ / “ or “–“ included.
- -Suppliers logos as defined by the standard ST 00020 will be entered after the S/N if the distance is lower than 3 times the height of a character.
-

Examples :

*1. Part marked SER 00**1234 ABC / 12**, enter **1234ABC/12**.*

*2. Part marked SER **ADH0087AD**, enter **ADH0087AD**.*

*3. Part marked SER **ADH0087AD TI** (logo of the supplier « TI » separated from the S/N with only one space, enter **ADH0087ADTI***

- **Amendments**: Complete with the index number on the equipment unit's identification plate, if there is one.
- **Trade mark**: Enter the name of the manufacturer of the equipment unit.
- **Type**: Fill in the engine variant(s) and version(s) upon which the equipment unit is installed (e.g.: B, S2, etc.).
- Related assembly or sub-assembly identification:
- Code: Not Applicable.
- Name: Enter the family / type of the engine on which the equipment unit is installed (e.g.: ARRIEL 2).

(3)Contract or order: Not Applicable.

(4)Guarantee: Not Applicable.

(5)Special information:

Enter all the information deemed necessary for the operators: recordable concessions, application of Airworthiness Directives and inspection SB, equipment settings if any, operations to be performed prior to entry into service, SL and/or Maintenance Manual revision referring to TBO extension, etc.

Nota : The Questions/Answers don't have to be mentioned.

Indicate the product manufacture date or the software upload date (month / year : MM/YYYY) and apply the authorized inspector's stamp.

"Date de fabrication / Date of manufacture":
It's the date of manufacture of the serial associated to the equipment.
This date is the same as the date on the plate of the equipment. (for ECU : plate of the ECU unloaded).

« **Date de chargement logiciel / Date of software downloading**» :
This area has only to be mentioned for loaded ECU (with Safran HE application software).
This date is the same as the one on the plate of the ECU loaded
If several loadings have been done, write only the last date.

« Date de test de réception/ Date of acceptance test» :
This area is mentioned only if the date is different from the manufacturing date (for equipments) or loading date (for ECU).
Test de reception / acceptance test : means check of good functioning for ECU according CCT and/or an acceptance test for equipments according CCT. Write only the last date of test.

NOTE: In the case of prototype equipment to be used for flight testing, Safran DQ must add the mention "Flight-worthy" (after review of the airworthiness documents).

Failing this, the prototype equipment may not be considered as "flight-worthy" and used for flight testing.

(6)Operating limit: Enter the operating time limit in hours of the equipment unit, as specified by the relevant Service Letter or chapter 5 of the maintenance manual. In case of TBO extension cross the old TBO value, and write the new TBO

Particular case of Arriel 2 Free wheel Assembly:

- **On** 007739 **(ENR1567) only (see Figure 03)**
- enter the operating time limit in hours and years if the effective documentation require it (Airbus Helicopters trend Mark notably)
- first limit reached making the Time Between Overhauls (TBO).

(7) Checking of modification performance:

This paragraph is only for repair centers. For new production, the part number is the only information written. The modifications are not mentioned anymore.

- **No.:** Enter the number of the modification embodied on the equipment unit (according to the directory of modifications for the engine concerned).
-
- **Type of modification**: Enter the title of the modification, the number of the Service Bulletin associated with the modification or the part number change.
- Note: For new products, the nature of the modification is not specified.
- **Performing unit or contractor**: Enter the name of the company who embodied the modification.
- **Performing date and inspection stamp**: enter the date (in month/year format: MM/YYYY) of the modification's embodiment and apply the authorized inspector's stamp.
-

(8) Calendar limit table 007263 **(ENR0441) only, Figure 01) :**

- **1/ Calendar TBO**: Enter the calendar TBO limit (total duration) of the equipment unit, as specified by the relevant Service Letter or chapter 5 of the maintenance manual.
- **2/ Date of 1st entry into service**: Enter date of 1st entry into service on aircraft.
- **3/ Operating limit date**: Enter the operating limit date, month and year, of the equipment unit (date of 1st entry into service + calendar TBO).
-
- NOTE : The "Date of 1st entry into service" and the "Operating limit date" are filled in by the operators.
- NOTE : « If during the intervention calendar limit has been reset note : "Calendar life reset »

(9) Table of use-limited parts 007606 (ENR1567) only, Figure 03) :

1 / Designation : enter the part description.

2 / PART NUMBER : enter the part number as per chapter 5 of MM or LS.

3 / SERIAL NUMBER : enter the serial number of the part, as per CTB task 70-30-01-660-801.

4 / Total operating hours : enter the operating hours in operation performed by the part.

5 / Availability in hours : enter the result, in hours, of the TBO minus the total operating hours, for the part.

6 / Total MGB cycles performed : enter the MG cycles performed by the part. For engines or parts not concerned by the monitoring of MGB cycles, enter a " / ".

7 / MGB cycle availability : enter the result, in MGB cycles, of the TBO minus the cycles performed by the part. For engines or parts not concerned by the monitoring, of MGB cycles, enter a " / ".

Back page : Figure **02** (007263 (ENR0441)), Figure **04** (007606 (ENR1567)), Figure **06** (007739 (ENR1759))

(10) Successive locations, minor and major maintenance and overhaul operations (007263 (**ENR0441**) **Figure 02, and** 007739 (**ENR1759**) **Figure 06 only) :**

The first line is filled in at the time of new production (first assembly) if necessary by the new engine test/assembly department.

- **Unit or company:** Enter the name of the company who performs the transfer of the equipment unit.
- **Date:** Enter the date of transfer of the equipment unit.
- **Location:** Enter the variant/version and the individual number of the engine on which the equipment unit is installed.
- Nota :
- For PCB assembled in a box, write in the "date" area, the date of installation of the card and in the "position" area, the serial number of the box.
- Nota :
- In the follow-up of sub-component of HMU with hour potential (example Fuel pump HP/BP on the family/type ARRIEL 2E/2N and ARRIUS 2R) in the section "date" indicate the date of the installation of the component on the HMU, in section "Position" indicate serial number of the sub-component and hours performed, in section "Modification " Pose/installed".)
- Operation:

♦ **Support: Enter the total hours since new of the engine on which the equipment unit is installed.**

♦ **Partial: Enter the partial hours of the equipment unit by the date of transfer (hours run on the same assembly since the last transfer).**

♦ **Total: Enter the total hours of the equipment unit, if never overhauled; otherwise enter the total hours since overhaul by the transfer date (total hours at the time of installation of the equipment item + partial hours of the equipment item).**

-
- Reason for transfer (code and symptoms) – Work carried out – Replaced parts:

Enter all the transfer operations and work carried out on the equipment unit.

(11) Successive locations, minor and major maintenance and overhaul operations 007606 (**ENR1567) only, Figure 04) :**

The first line is filled in at the time of new production (first assembly) if necessary by the new engine test/assembly department.

-
- **Unit or company:** Enter the name of the company who performs the transfer of the equipment.
- **Date:** Enter the date of transfer of the equipment.

- **Location:** Enter the variant/version and the individual number of the engine on which the equipment unit is installed.
- Operation:

Support (Engine) Operation:

1- TSN Engine Hours: enter the total hours since new of the engine on which the FW Assy. is installed.

2- Partial Engine hours: enter the partial hours of the FW Assy. on the date of removal (hours worked on the same engine since install.)

3- MGB CSN Cycles: enter the total cycles of the MGB on which the FW Assy. is installed. This column is the responsibility of the operator. The operator should systematically fill the total cycles of the MGB during each fitting / removal of the engine.

4- Partial MGB cycles: enter the partial cycles of the MGB at the date of the movement (cycles carried out on the same support since the last movement) in order to allow monitoring of MGB cycles for Life limit components.

FW Assy. Operation:

5- TSO Hours: Fill in the hours of the equipment since New or last Overhaul

6- CSO cycles: Fill in the cycles of the FW Assy. since New or last Overhaul

Rule for the resetting to '0' of the counters:

For Arriel 1B/ 1D/ 1D1 FW Assy. only:

Put a « / » in cases 3,4 et 6.

New or Overhauled FW Assy.

TSO = record "0"

CSO = record "/"

Repaired FW Assy.:

TSO removal = record TSO installation + Partial Hours

CSO removal = record "/"

For Arriel 2B / 2B1 / 2D FW Assy. only:

New or Overhauled FW Assy.

TSO = record "0"

CSO = record "0"

Repaired FW Assy.:

TSO removal = record TSO installation + Partial Hours

CSO removal = record CSO installation + Partial Cycles

For Arriel 2B / 2B1 / 2D FW Assy. only:

For FW Assy. with components monitored by MGB cycles “MGB CSN Cycles": This column is the responsibility of the operator.

The operator must systematically record the total MGB Cycles of the equipment during each fitting / removal of the FW Assy. of the aircraft airframe (usually during engine removal / fitting) in order to allow the monitoring in BTP cycles. for the concerned components.

In the event that the MGB cycles consumed are not recorded, contact the operator

-Enter the data communicated by the operator

Caution:

- Only in the event that the consumed MGB cycles are not known during the initialization of the number of FW Assy. cycles counting for the ARRIEL 2B / 2B1 POST TU130., Airbus authorizes the application of a calculation method to assign to the FW Assy. the number of MGB cycles as described in SIN 2808-S-71-REV-2 issued by Airbus helicopters. This method is applicable only once.

The initialization of the cycle count corresponds to the transfer of responsibility for the airworthiness monitoring from Safran Helicopter Engines to Airbus Helicopter.

♦ **Reason for transfer (code and symptoms) – Work carried out – Replaced parts :**

Enter all the transfer operations and work carried out on the equipment item followed by the name and signature of the technician.

NOTA: When the equipment item is installed on another engine, use two lines to enter the corresponding information, the first for Removal and the second for Installation.

NOTA : In use, at the service center or at the repair center, the special information (Concessions, Airworthiness Directives, inspection SB etc.) is mentioned in this table

NOTA : For FCU and HMU precise than "All the periodic inspection applied during the intervention"

NOTA : If during the intervention calendar limit has been reseted indicate : "Calendar life reset »

(12) Modules (007739 (**ENR1759) only, Figure 05):** Enter part number and serial number of each module listed in the cells and which composed the ECU.

In order to facilitate FM editing, models are attached in the appendices.

A copy of the FM, identical to that sent by CCIH, is archived with the equipment unit’s assembly schedule.

Figure 01

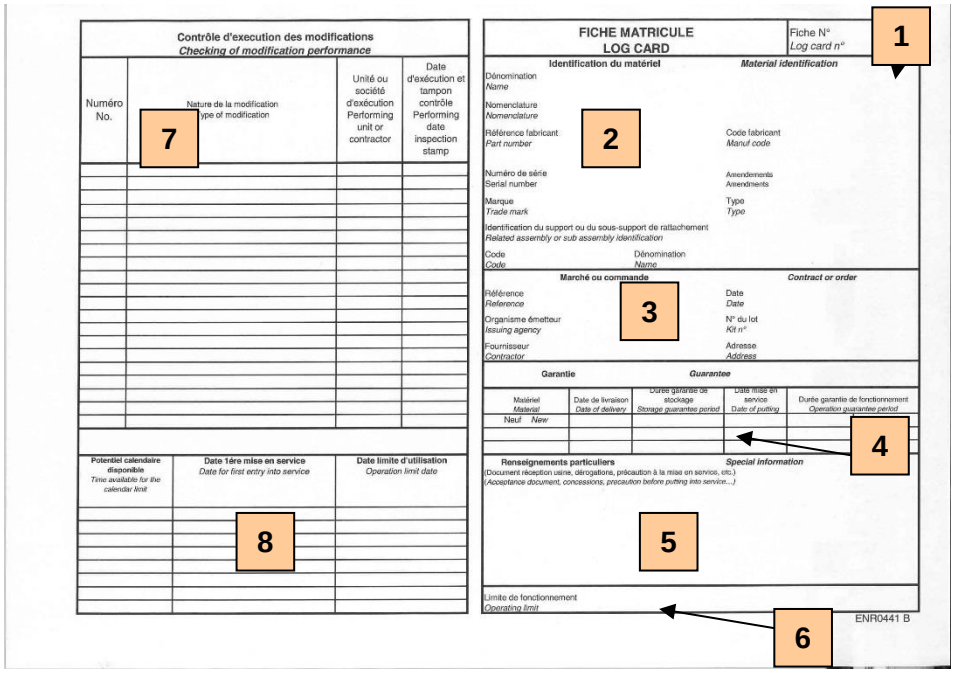


Figure 02

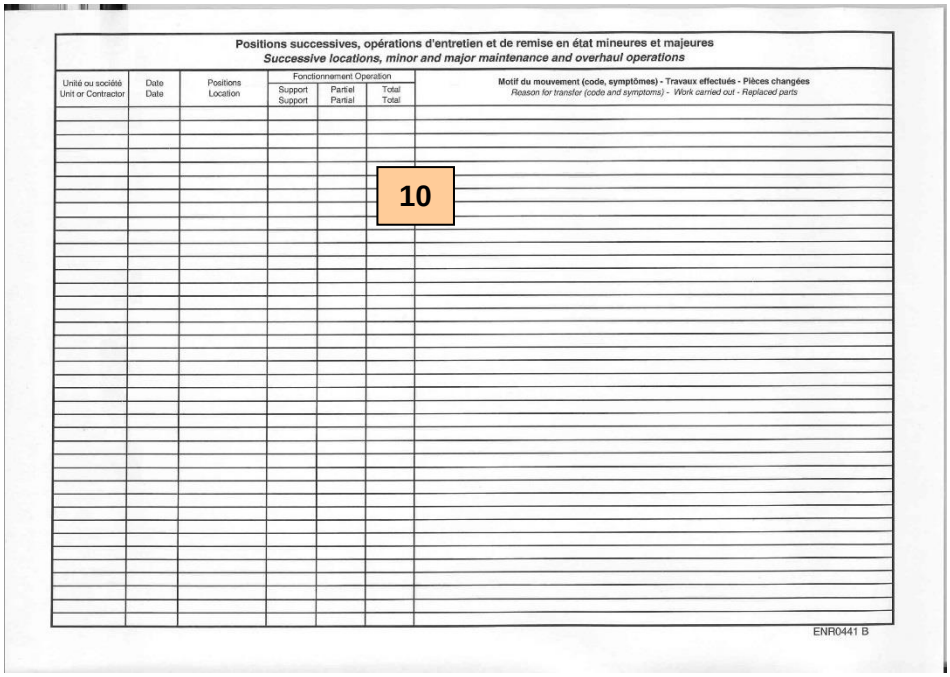


Figure 03

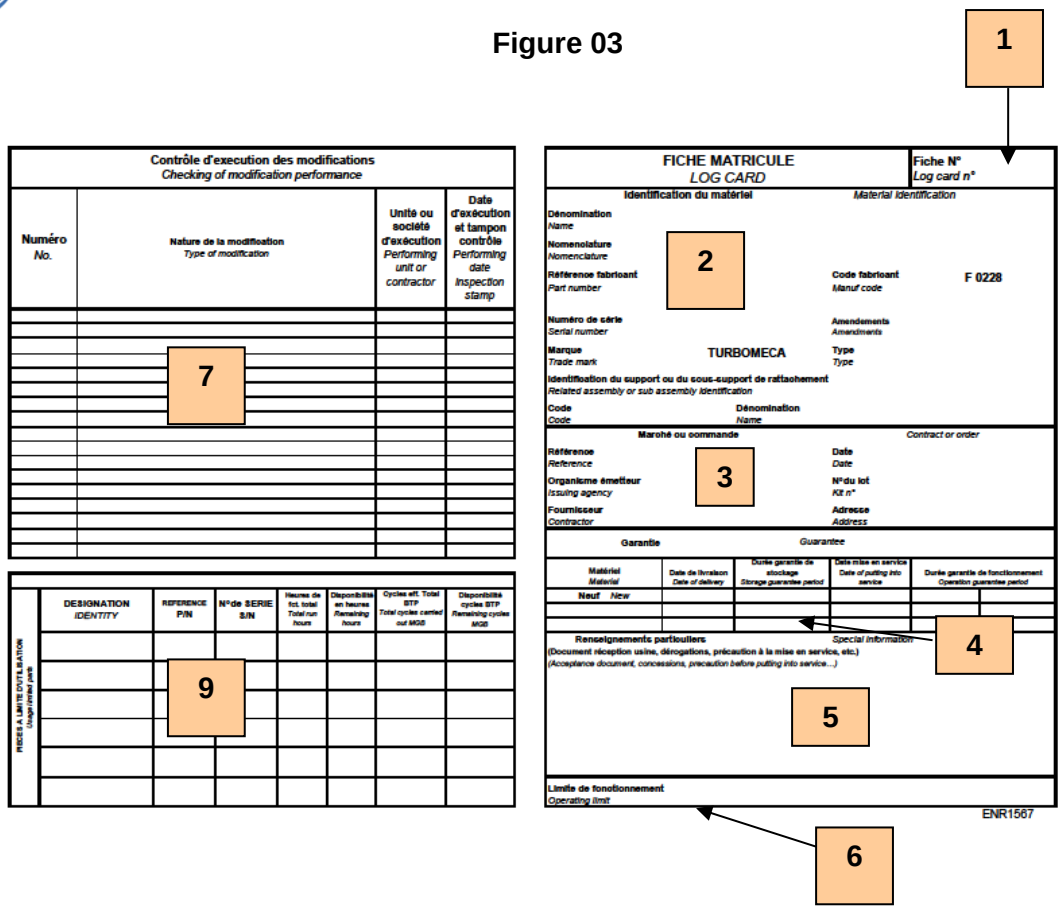
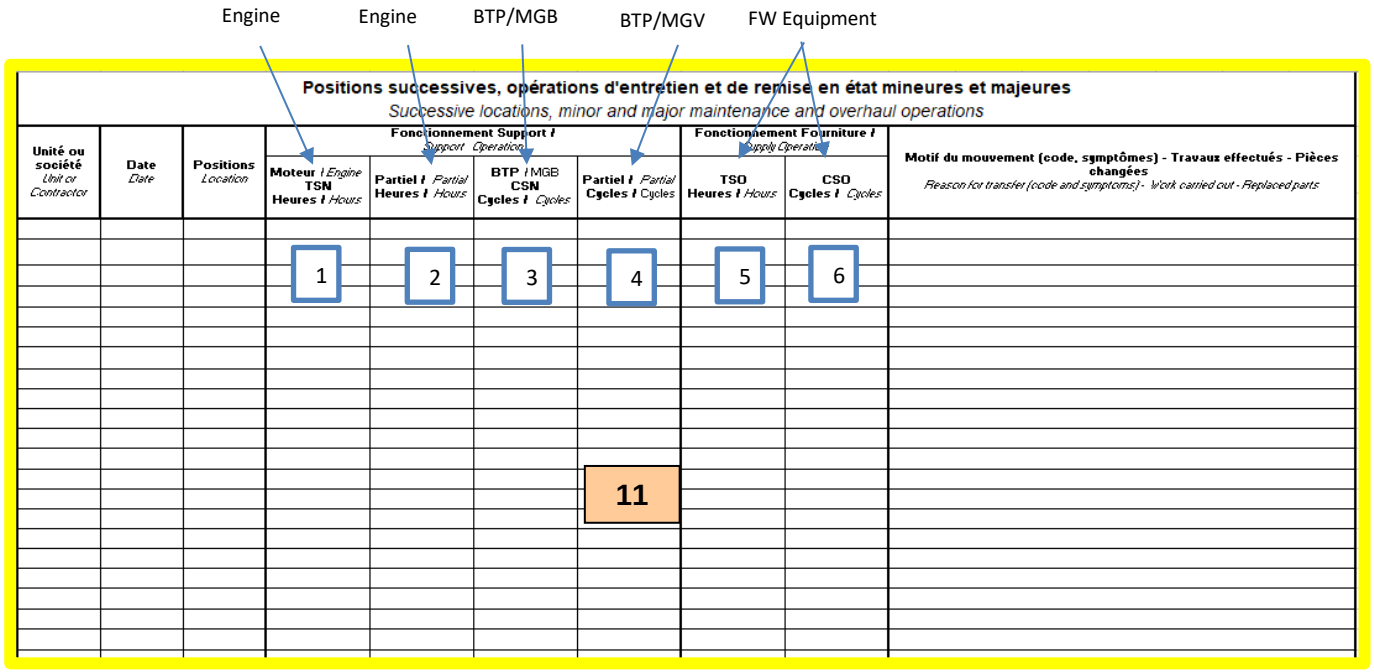


Figure 04



INFORMATION FOR MAINTENANCE CENTERS FOR OLD LOG CARD FREEWHEEL ASSEMBLY

On old Log Cards, operators must note the construction cycles when installing and removing the freewheel assembly in the movement box below to keep the traceability of the cycles. Indeed on these old log cards no box is available to guarantee the traceability of the cycles carried out.

Noted :

Installed : Engine installed at TSN xxxxhrs on engine (Number of engine cell) at xxxx cycles MGB/BTP
Example: Engine installed at TSN 1000 hrs on engine A/C C-GPN at 12000 cycles MGB/BTP

Removed: Engine removed at TSN xxxxhrs on engine (Number of engine cell) at xxxx cycles MGB/BTP
Example: Engine removed at TSN 1350 hrs on engine A/C C-GPN at 21450 cycles MGB/BTP

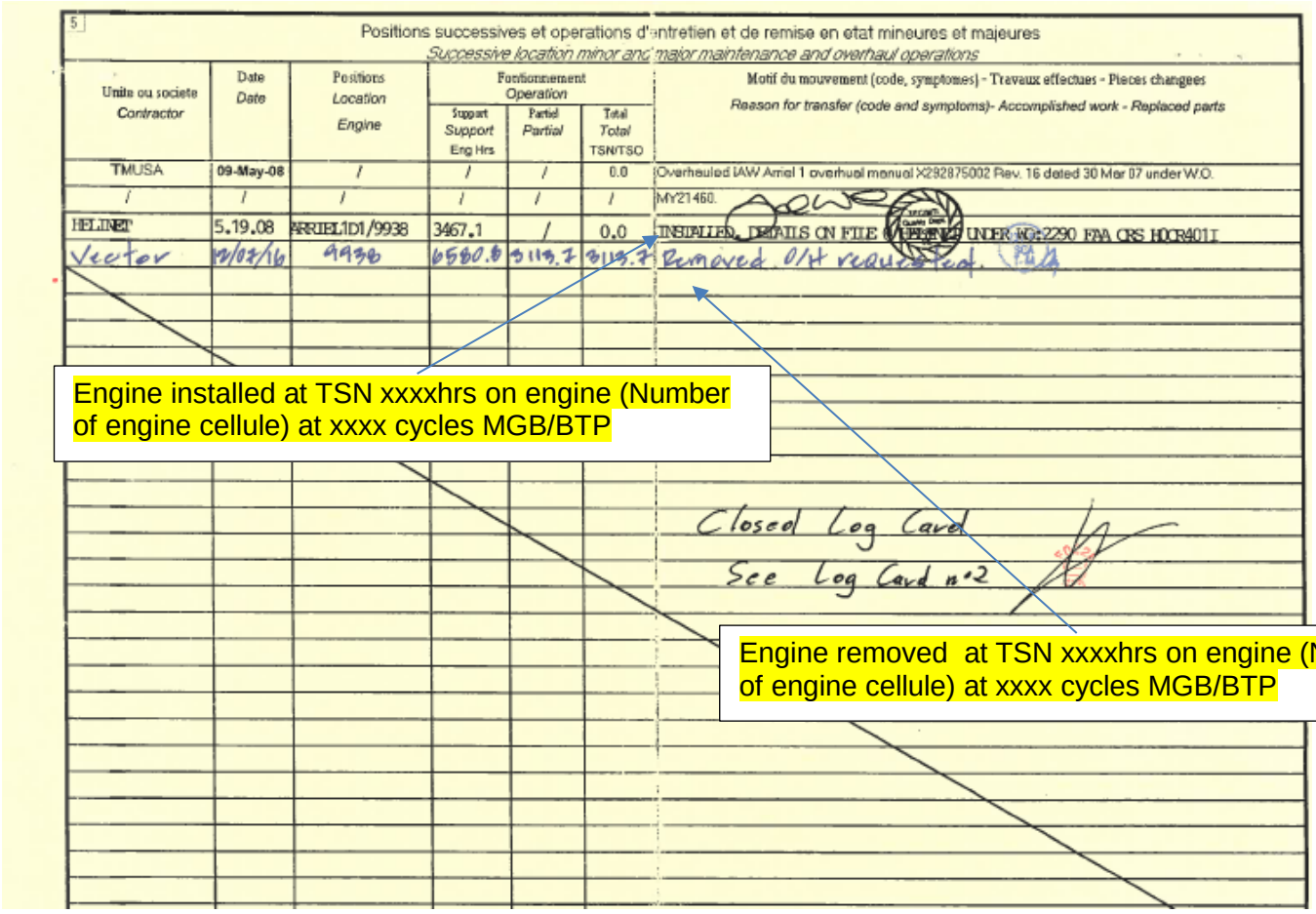


Figure 05

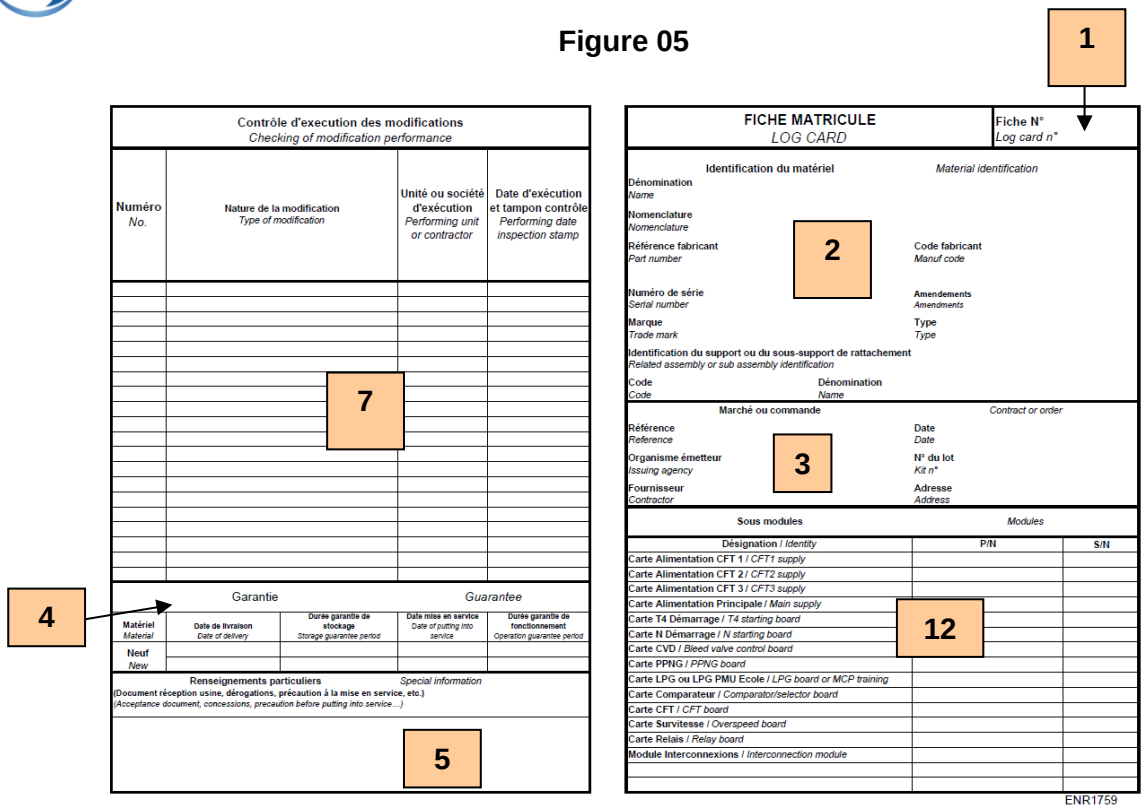
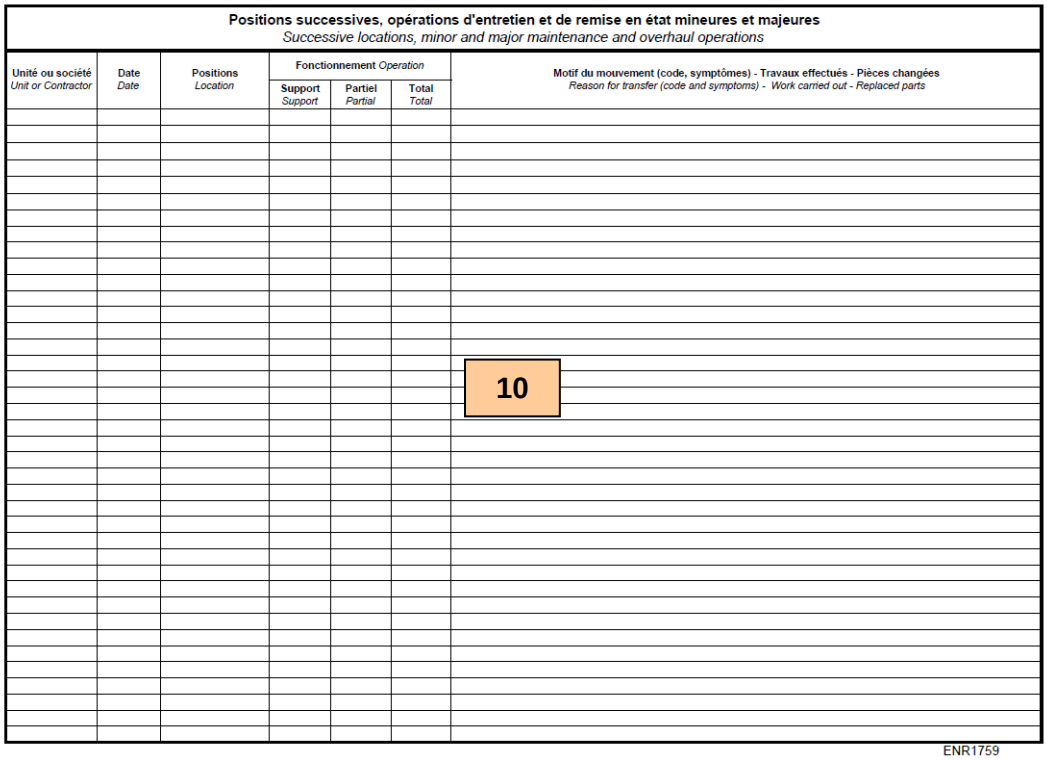


Figure 06



APPENDIX 1 – CCIH EQUIPMENT ITEM LOG CARD MODEL (**front page**

Contrôle d'execution des modifications
Checking of modification performance

Numéro *No.*	**Nature de la modification** *Type of modification*	**Unité ou société d'exécution** *Performing unit or contractor*	**Date d'exécution et tampon contrôle** *Performing date inspection stamp*

Potentiel calendaire disponible *Time available for the calendar limit*	**Date 1ére mise en service** *Date for first entry into service*	**Date limite d'utilisation** *Operation limit date*
10 ans / years		

FICHE MATRICULE *LOG CARD*

Fiche N° *Log card n°* **1**

Identification du matériel *Material identification*

Dénomination *Name*: **ENS. REGULATEUR REGLE (FUEL CONTROL UNIT,ADJUSTED)**

Nomenclature *Nomenclature*:

Référence fabricant *Part number*: **0319870100** — **Code fabricant** *Manuf code*: **F0228**

Numéro de série *Serial number*: **47042** — **Amendements** *Amendments*:

Marque *Trade mark*: **TURBOMECA** — **Type** *Type*: **F**

Identification du support ou du sous-support de rattachement
Related assembly or sub assembly identification

Code *Code*: — **Dénomination** *Name*: **ARRIUS 2**

Marché ou commande *Contract or order*

Référence *Reference*: — **Date** *Date*:

Organisme émetteur *Issuing agency*: — **N° du lot** *Kit n°*:

Fournisseur *Contractor*: — **Adresse** *Address*:

Garantie *Guarantee*

Matériel *Material*	**Date de livraison** *Date of delivery*	**Durée garantie de stockage** *Storage guarantee period*	**Date mise en service** *Date of putting into service*	**Durée garantie de fonctionnement** *Operation guarantee period*	
Neuf *New*					

Renseignements particuliers *Special information*

(Document réception usine, dérogations, précaution à la mise en service, etc.) **03/2011**
(Acceptance document, concessions, precaution before putting into service…)

SB n° A 319 73 482 3 appliqué / applied
CN n° F-2005-88 appliquée / applied

Correcteur thermique: **11146** **Course à 80°: 0,599 mm**

Limite de fonctionnement *Operating limit*: **2800 H**

APPENDIX 2 – CCSR EQUIPMENT ITEM LOG CARD MODEL (**FRONT PAGE**)

Contrôle d'execution des modifications
Checking of modification performance

Numéro *No.*	**Nature de la modification** *Type of modification*	**Unité ou société d'exécution** *Performing unit or contractor*	**Date d'exécution et tampon contrôle** *Performing date inspection stamp*

Potentiel calendaire disponible *Time available for the calendar limit*	**Date 1ére mise en service** *Date for first entry into service*	**Date limite d'utilisation** *Operation limit date*

Utiliser le fichier Excel figé lors du DVI et changer les zones colorées
Use the Excel file frozen with the FAI and change the colored area

FICHE MATRICULE *LOG CARD*

Fiche N° *Log card n°* **1**

Identification du matériel *Material identification*

Dénomination *Name*: **ELECTRONIC CONTROL UNIT / CALCULATEUR NUMERIQUE**

Nomenclature *Nomenclature*:

Référence fabricant *Part number*: **70XX010X0**

Code fabricant *Manuf code*: **FXXX**

Numéro de série *Serial number*: **1567**

Amendements *Amendments*:

Marque *Trademark*: **Manufacturer name**

Type *Type*: **S2**

Identification du support ou du sous-support de rattachement
Related assembly or sub assembly identification

Code *Code*:

Dénomination *Name*: **ARRIEL 2**

Marché ou commande *Contract or order*

Référence *Reference*:

Date *Date*:

Organisme émetteur *Issuing agency*:

N° du lot *Kit n°*:

Fournisseur *Contractor*:

Adresse *Address*:

Garantie *Guarantee*

Matériel *Material*	**Date de livraison** *Date of delivery*	**Durée garantie de stockage** *Storage guarantee period*	**Date mise en service** *Date of putting into service*	**Durée garantie de fonctionnement** *Operation guarantee period*	
Neuf *New*					

Renseignements particuliers *Special information*
(Document réception usine, dérogations, précaution à la mise en service, etc.)
(Acceptance document, concessions, precaution before putting into service…)

Date de fabrication / Date of manufacture 06/2011 F1234 01

Date de chargement logiciel / Date of software downloading 07/2011 F1234 01

Date de test de réception/ Date of acceptance test 05/2012 F1234 01

Limite de fonctionnement
Operating limit

2. QUALITY RECORDS

The quality records are performed in accordance to the G130. In the case of specific requirements, they are defined in:

The inspector issuing the Approval for return to Service signs:
The FMFs as the inspector authorized by the relevant authority.

All the boxes to be signed shall include signature and stamp.

The new and repair centre completes the FM pages in duplicate; the original is sent to the user and a paper and/or .pdf copy is archived by the new and repair centre in SAP.

3. TERMINOLOGY – DEFINITIONS

See 007865 (G009)

- The FM is a permanent, official document used for identifying and controlling a component installed on a turboshaft-engine.
- In the log card, **Aircraft Manufacturer** is used as a general term to designate the Company integrating the SAFRAN HE engine into the aircraft, and **Aircraft** is used as a general term to designate the vehicle on which the SAFRAN HE engine is installed (helicopter, plane, etc.).

4. INITIALS – ABBREVIATIONS – ACRONYMS

- MGB : Main gear box
- ECU : Electronic Control Unit
- SMQ/SQ : Safran HE Quality Modernization Department / Quality Department
- DQ: Safran HE Quality Division
- DSO: Safran HE Operator Support Division
- EASA: European Aviation Safety Agency
- FM: Log card (Fiche Matricule)
- FFE: External component Log Card.
- SL : Service Letter
- MM : Maintenance Manual
- RRD: Documentation for controlling French Air Force's technical equipment units.

- SH: SAFRAN HE.
- TBO : Time Between Overhaul

- ST 00020 : Standard 20

VBF : Functional test

5. HISTORY OF CHANGES

Version	Date	Author	Purpose of the modifications
L	08/02/2017	Alain CALIOT	Add white color of paper
			Precisions for treatment of FM of sub component
			Replace le Word "réparation" by "intervention"
			Add a precision for accessories which could be installed of different versions of engine.
			Add a precision to inform for reset calendar limit
			Precise information's to note for a SN of civilization
M	22/03/2018	Alain CALIOT	1.11.2 = Correction du mot "reset" on English version
			4. = Integration of initials « VBF » pour "Functional test »
			1.1.2.1 = Add the rule of creation of a FM when the rule of follow-up evolved between the putting into service of the product and its return in repair.
			1.1.2.2 point 6 = Add the information concerning year potential in second limit (ENR1567)
			1.1.1 Modele : Precision concerning format and print operation of the FM
			Introduction : Delete the reference to the general LS N° 2462/06
008175-2 (sous OSR)	25/06/2019	Olivier DUMARTIN	OSR numbering
			Rule: No sheet be stapled or glued to another sheet
			Modification following customer feedback C1 & C2 + CCIH need
008175-3	06/09/2019	Olivier DUMARTIN	Name change of 07606 (ENR1567) « Log Card Free wheel assembly Arriel1, Arriel2 and air intake Assembly ANETO » to take into accont ANETO air intake assembly Quality records
008175-4	22/04/2020	Olivier DUMARTIN	Modification and instruction to fill in the Log Card 007606 (ENR1567) Free wheel assembly

6. BIBLIOGRAPHY REFERENCES

6.1. REFERENCE DOCUMENTS

- 007263 (ENR0441) Fiche Matricule / Log Card
- 007606 (ENR1567) Free wheel assembly Arriel1, Arriel2 and air intake Assembly ANETO
- 007739 (ENR1759) : Fiche Matricule BER MAKILA 1 / Log Card BER MAKILA 1
- RRD100/02 (évolution du RRD 100 le 16/01/02)
- 007784 (ENR1830) : LOG CARD -2C
- 007785 (ENR1831) : LOG CARD
- 008134 (LIS2260) RTM322 and MTR390 Release documents and log card template to produce

6.2. APPLICABLE DOCUMENTS

Applicable documents required to perform tasks hereafter are linked to this document through OSR (One Safran referential), and by consequence are listed on the front page.

GENERAL SERVICE LETTER

SUPPORT AND SERVICE DIVISION
40220 Tarnos – France
Tel. (33) (0) 5 59 74 40 00

JFE/OD/CL

General Service Letter No. 3059/20

Subject: All engines
Reminder of the rules for filling in the counters in the Safran Helicopter Engines Unique Engine Log Book.

Dear Sir or Madam,

The purpose of this Service Letter is to remind you of the rules for filling in the counters in the Unique Engine Log Book (LMU), the Exchangeable Supply Log Card (FMFE) and the Log Card (FME).

1° User guides:

Two guides are available in EngineLife Customer Portal: guide no. 008264 (U441) for the LMU and FMFE (modules) and guide no. 008175 (U015) for the FME (accessories).

These guides go over all the data contained in the LMU, FMFE or FME and describe:

- How to fill in and/or check the data
- The effectivity of the LMU pages depending on the usage point
- The reference documentation to be used when filling in the pages of each LMU section.

These guides are now available in the “Quality documentation” tab of our EngineLife® Customer Portal.

2° General rating rules:

Ratings on delivery in the LMU are written in hundredths for hour, cycle and creep damage counters, except for OEI counters.

The decimal separator is a dot ". ". For a value 0, note 0.00

2.1 Rules for hour counters

Ratings on delivery in the LMU are in hours and hundredths.
The counter data must be filled in Hours and Hundredths with 2 decimals.

Rounding is not allowed.

The decimal separator is a dot (.).

007321_02

Note that all ratings upon receiving LMU, FMFE and FME shall be interpreted in hours and hundredths.

- **Examples: 100h49; 100:49; 100,49; 10049 and 100.49 shall be interpreted 100.49**

2.2 Rules for cycle counters

Ratings on delivery in the LMU are in hundredths.

The counter data must be filled in with 2 decimals.

Rounding is not allowed.

The decimal separator is a dot (.)

- Example: 67.80 82.00 0.00

2.3 Rules for creep damage counters

The rules apply for either a percentage or a gross value without units.

The counter data must be filled in hundredths with 2 decimals for percentage or point counting.

Rounding is not allowed.

The decimal separator is a dot (.)

- Example: 42.90 56.00

2.4 Rules for OEI counters

OEI ratings on delivery in the LMU are in minutes and/or seconds.

- When the stop is > 1 min: in minutes and seconds; note m min ss seconds or m min ss s.

Examples: 10 min 03 seconds or 10 min 03 s

- When the stop is < 1 min: in seconds only; note ss seconds or s.

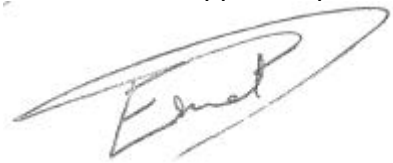
Examples: 05 seconds or 05 s

- Note “/” for non-existing OEIs or whose limit values are not existing.

Please contact us if you require further information or assistance.

Yours faithfully,

Technical Support Department



J.F. ESCURET

Historique du matériel â durée de vie limitée
Life Limited Material History Record

Numéro du dessin ST3582-01 - Drawing Number ST3582-01

P&WC JR3-6834 E |6834] (2012-10)

Pratt & Whitney Canada
Une societe de United Technologies/A United Technologies Company

Pratt & Whitney Canada Cie. /
Pratt & Whitney Canada Corp.
1000, Marie-Victorin
Longueuil, Quebec
Canada J4G 1A1

designation du materiel Material Name		Code de traitement thermique Heat Code		Emis Ie (A-M-J) Issue Date (Y-M-D)
N° du matériel Material No.	N° de série du matériel Material Serial No	N° de série du mat'I. forge Forging Mat'l. Serial No	Temps depuis neuf Time Since New	Cycles depuis Neuf Cycles Since New

Nota: Pour connaitre les durées de vie accumulee et résiduelle du matériel, consulter Ie Manuel d'entretien du moteur ou Ie Bulletin de service approprié, selon le cas.

Note: For determination of accumulated and remaining lives on this material, refer to the engine Maintenance Manual or Service Bulletin, as applicable

Données sur Ie motcur / module - Engine / Module Data				Données sur ie maléríel - Material Data					
Temps de fonctionnement depuis l'inslaIlalion du matériel Engine/Module TSN When Material Installed	N° de série du moteur / module Engine / Module Serial No.	Modéle Model	Temps de fonctionnement depuis l'enlévement du matériel Eng / Module TSN When Material Removed	Cumul. de cette installation Accumulated This Installation		Cumul. jusqu'a présent Total Accumulated To Date		Date (A-M-J) (V-M-D)	Observations (Installation d'entretien, de révision, Bulleti de vente et timbre du vérificateur) Remarks (Maintenance/Overhaul, Facility. Sales Order & inspection stamp)
				Temps – Time	Cycles	Temps – Time	Cycles		

Insérer Ie présent historique dans le livre du moteur ou du module ou la piéce est installée. - This record must be kept with the engine/module logbook where this part is installed.

Historique du matériel â durée de vie limitée
Life Limited Material History Record

Numéro du dessin ST3582-01 - Drawing Number ST3582-01

Pratt & Whitney Canada
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P&WC JR3-6834 E |6834] (2012-10)

designation du materiel [1]Material Name		Code de traitement thermique [4]Heat Code	Emis Ie (A-M-J) [5]Issue Date (Y-M-D)	
N° du matériel [2]Material No.	N° de série du matériel [3]Material Serial No	N° de série du mat'I. forge [6]Forging Mat'l. Serial No	Temps depuis neuf [7]Time Since New	Cycles depuis Neuf [8]Cycles Since New

Nota: Pour connaitre les durées de vie accumulee et résiduelle du matériel, consulter Ie Manuel d'entretien du moteur ou Ie Bulletin de service approprié, selon le cas.

Note: For determination of accumulated and remaining lives on this material, refer to the engine Maintenance Manual or Service Bulletin, as applicable

Données sur Ie motcur / module - Engine / Module Data				Données sur ie maléríel - Material Data					
Temps de fonctionnement depuis l'inslaIlalion du matériel [9]Engine/Module TSN When Material Installed	N° de série du moteur / module [10]Engine / Module Serial No.	Modéle [11]Model	Temps de fonctionnement depuis l'enlévement du matériel [12]Eng / Module TSN When Material Removed	Cumul. de cette installation Accumulated This Installation		Cumul. jusqu'a présent Total Accumulated To Date		[17]Date (A-M-J) (Y-M-D)	Observations (Installation d'entretien, de révision, Bulleti de vente et timbre du vérificateur) [18]Remarks (Maintenance/Overhaul, Facility. Sales Order & inspection stamp)
				[13]Temps – Time	[14]Cycles	[15]Temps – Time	[16]Cycles		

Insérer Ie présent historique dans le livre du moteur ou du module ou la piéce est installée. - This record must be kept with the engine/module logbook where this part is installed.

GalaxyAerospace maintenance . repair . overhaul	**INSTRUCTION FOR COMPLETING FORM** P&WC JR3-6834-E [6834] (2012-10)

NO	ITEM	INSTRUCTIONS
1.	MATERIAL NAME	Enter the component's name/description
2.	MATERIAL NO.	Enter the component's part number
3.	MATERIAL SERAL NO.	Enter the component's serial number
4.	HEAT CODE	Enter the component's heat code as per Engine Serialized Component Summary, if any.
5.	ISSUE DATE (Y-M-D)	Enter the component's date of manufacture in format Y-M-D, where: Y = Year M = Month D = Day
6.	FORGING MAT'L, SERIAL NO.	Enter the forging material serial number as per Engine Serialized Component Summary, if any.
7.	TIME SINCE NEW	Enter the component's Time Since New
8.	CYCLES SINCE NEW	Enter the component's Cycles Since New
9.	ENGINE/MODULE TSN WHEN MATERIAL INSTALLED	Enter the Engine / Module Time Since New when the component installed to the Engine / Module in Item 10
10.	ENGINE/MODULE SERIAL NO.	Enter the Engine / Module Serial Number
11.	MODEL	Enter the Engine Model
12.	ENG./MODULE TSN WHEN MATERIAL REMOVED	Enter the Engine / Module Time Since New when the component removed from the Engine / Module in Item 10
13.	TEMPS – TIME	Enter the component's time accumulated when installed to the Engine / Module in Item 10
14.	CYCLES	Enter the component's cycles accumulated when installed to the Engine / Module in Item 10
15.	TEMP – TIME	Enter the component's total time accumulated to date
16.	CYCLES	Enter the component's cycles accumulated to date
17.	DATE (Y-M-D)	Enter the date when the component removed from Engine / Module in Item 10 in format Y-M-D, where: Y = Year M = Month D = Day
18.	REMARKS	Enter any remarks that need to be highlighted (e.g. reason for removal) and Technical Record Personnel Signature and Stamp