

SERVICE BULLETIN No. 319 77 4097

Version: A

Date: 25 March 2021

First issue

Modification

Recurring action

One-off action

Applicable from:
"MAY 2021"

Subject:

Engine indicating - Pyrometric harness - Change in the material of the thermocouple probes and routing modification.
Modification Tf 97.

APPLICABLE ENGINE / VARIANT(S)	EFFECTIVITY CODE	MAINTENANCE LEVEL	CONDITION OF APPLICATION	OPERATIONAL EFFECT
ARRIUS 2 F	2-C-1	1, 2, 3	Application if the pyrometric harness is replaced (discarded)	Removal/installation of the pyrometric harness
		4	Application if the pyrometric harness is replaced (discarded)	

This SB must be done in full compliance with manufacturer instructions. Refer to the Effectivity Code found in the table above.

Note: This modification makes it necessary to do modification Tf 18.

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§1.GENERAL

§2.LEVEL 1, 2

§3.LEVEL 3

§4.LEVEL 4

§5.CERTIFICATES

1. GENERAL**1.1. Background****1.1.1. Context**

Safran Helicopter Engines and customers observed:

- During removal/installation operations of the pyrometric harness: ruptures of a cable or a T45 thermocouple probe.
- During inspections of the pyrometric harness: burnt T45 thermocouple probes.

1.1.2. Analysis

- To do the scheduled replacement of the injection manifold assembly, it is necessary to do a prior removal of the pyrometric harness. The current design of the pyrometric harness and its reduced accessibility on an installed engine make the maintenance operation more difficult and can cause damage to the pyrometric harness.
- During starting phases, T45 thermocouple probes are subject to a punctually high temperature and can age prematurely, including the T45 thermocouple probe that is located in the preference injector area.

1.1.3. Solution

This Service Bulletin (SB) replaces the PRE Tf 97 pyrometric harness with a POST Tf 97 pyrometric harness. This modification:

- Changes the routing of the pyrometric harness, which allows the right and left injection half-manifolds to be replaced without prior removal of the pyrometric harness. Therefore, the removal/installation operations of the pyrometric harness will be limited.
- Increases heat resistance of the four T45 thermocouple probes through a change in material.

1.2. Approval

The technical content of this document is approved under the authority of the DOA (Design Organisation Approval) ref. EASA.21J.070.

1.3. Summary of updates

Not applicable.

End of Section §1

“General”

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§2.LEVEL 1, 2

§3.LEVEL 3

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§5.CERTIFICATES

2. PROCEDURE DONE AT THE OPERATOR'S SITE OR AT A MAINTENANCE CENTER APPROVED FOR LEVEL 1, 2

 Refer to the [compliance certificate in Chapter 5.1](#)
2.1. Manpower

- Personnel: 1 mechanic.
- Necessary time: 1 man hour (removal and installation of the pyrometric harness).

2.2. Tooling and/or materials

- Mechanic's standard tooling.

2.3. Material information
2.3.1. Basic information

The parts list below, necessary for this SB, is for one engine.

2.3.2. List of parts

2.3.2.1. Parts necessary for this SB.

New Part Number	Key	Qty	Description* / Item	Old Part Number	Key	Qty
ARRIUS 2 F						
9 550 75 342 0	A	1	Pyrometric harness (77-21-00-01-010)	9 550 17 027 0 9 550 17 568 0 9 550 17 712 0 9 550 17 758 0	C	1
			Spacer (77-21-00-01-038)	0 292 76 013 0	C	4
9 794 15 025 3	B	1	Preformed packing (79-29-00-01-380A)	9 794 15 025 3	B	1

* Please tell us if you would like pricing information.

A full list of the old item part numbers above is given in the Spare Parts Catalog.

Key

A	Part included by this SB
B	Part not included by this SB, but necessary for its completion
C	Part deleted by this SB

2.3.2.2. Parts necessary for the application of the maintenance tasks referred to in this SB

Refer to the ARRIUS 2 F Maintenance Manual or Spare Parts Catalog.

2.3.3. Supply conditions

Order supplies from:

Your local Safran Helicopter Engines Support Center

or

SAFRAN HELICOPTER ENGINES

Direction Support et Service

Département Commercial

40220 TARNOS - France

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§2.LEVEL 1, 2

§3.LEVEL 3

§4.LEVEL 4

§5.CERTIFICATES

2.4. Necessary procedures

Replacement of the PRE Tf 97 pyrometric harness with a POST Tf 97 pyrometric harness, refer to paragraph 2.6.

2.5. Block diagram for this SB

Not applicable.

2.6. Instructions on how to do the procedure**2.6.1. Implementation**

Removal of the engine is not necessary for this SB.

2.6.2. Operating instructions

- 2.6.2.1. Remove the PRE Tf 97 pyrometric harness: refer to the ARRIUS 2 F Maintenance Manual, task 77-21-00-900-801.
- 2.6.2.2. Install a POST Tf 97 pyrometric harness: refer to the ARRIUS 2 F Maintenance Manual, task 77-21-00-900-801.
- 2.6.2.3. Return the PRE Tf 97 pyrometric harness to a Safran Helicopter Engines-approved Repair Center.

2.6.3. Reconditioning and checks

Do a ground run check: Refer to the applicable ARRIUS 2 F Maintenance Manual, task 71-02-13-280-801.

2.6.4. Identification

Refer to the following Guides for instructions on how to record this SB in the engine log book:

- Guide U441 or U015 if the paper engine log book is the official record for equipment that is subject to this SB.
- Guide U797 if the electronic engine log book is the official record for equipment that is subject to this SB.

For the paper engine log book:

- 2.6.4.1. Record the application of this SB in section "A" and in section "E" of the unique engine log book.
- 2.6.4.2. Send back the fully-completed [compliance certificate in chapter 5.1](#) to tell Safran Helicopter Engines that this SB was done.

For the electronic engine log book:

Refer to Guide U797.

2.7. Weight and balance

Not applicable.

End of Section §2

“Procedure done at the operator’s site or at a Maintenance Center approved for Level 1, 2”

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§1.GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5.CERTIFICATES

3. PROCEDURE DONE AT A MAINTENANCE CENTER APPROVED FOR LEVEL 3 OR AT THE OPERATOR'S SITE BY A MAINTENANCE CENTER APPROVED FOR LEVEL 3

Refer to the paragraphs that pertain to Maintenance Centers approved for Level 1, 2 given in [§2](#).

End of section §3

“Procedure done AT a Maintenance Center approved for Level 3 OR AT THE OPERATOR'S SITE BY a Maintenance Center approved for Level 3”

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§1.GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5.CERTIFICATES

4. PROCEDURE DONE AT A REPAIR CENTER APPROVED FOR LEVEL 4

 Refer to the [compliance certificate in Chapter 5.1](#)
4.1. Manpower

- Personnel of approved Repair Center.
- Time calculated by the Repair Center as being applicable for this level of intervention.

4.2. Tooling and/or materials

Refer to ARRIUS 2 Overhaul Manual.

4.3. Material information
4.3.1. Basic information

The parts list below, necessary for this SB, is for one engine.

4.3.2. List of parts

New Part Number	Key	Qty	Description / Item	Old Part Number	Key	Qty
ARRIUS 2 F						
9 550 75 342 0	A	1	Pyrometric harness (77-21-00-01-010)	9 550 17 027 0 9 550 17 568 0 9 550 17 712 0 9 550 17 758 0	C	1
			Spacer (77-21-00-01-038)	0 292 76 013 0	C	4
9 794 15 025 3	B	1	Preformed packing (79-29-00-01-380A)	9 794 15 025 3	B	1

Key

A	Part included by this SB
B	Part not included by this SB, but necessary for its completion
C	Part deleted by this SB

4.3.1. Supply conditions

Order supplies from:

Your local Safran Helicopter Engines Support Center

or

SAFRAN HELICOPTER ENGINES

Direction Support et Service

Département Commercial

40220 TARNOS - France

4.4. Necessary procedures

Replacement of the PRE Tf 97 pyrometric harness with a POST Tf 97 pyrometric harness, refer to paragraph 4.6.

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§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5.CERTIFICATES

4.5. Block diagram for this SB

Not applicable.

4.6. Instructions on how to do the procedure**4.6.1. Implementation**

Not applicable.

4.6.2. Operating instructions

4.6.2.1. Remove the PRE Tf 97 pyrometric harness: Refer to ARRIUS 2 Overhaul Manual.

4.6.2.2. Install the POST Tf 97 pyrometric harness: Refer to ARRIUS 2 Overhaul Manual.

4.6.3. Reconditioning and checks

Refer to ARRIUS 2 Overhaul Manual.

4.6.4. Identification

Refer to the following Guides for instructions on how to record this SB in the engine log book:

- Guide U441 or U015 if the paper engine log book is the official record for equipment that is subject to this SB.
- Guide U797 if the electronic engine log book is the official record for equipment that is subject to this SB.

For the paper engine log book:

4.6.4.1. Record the application of this SB in section "A" and in section "E" of the unique engine log book.

4.6.4.2. Send back the fully-completed [compliance certificate in chapter 5.1](#) to tell Safran Helicopter Engines that this SB was done.For the electronic engine log book:

Refer to Guide U797.

4.7. Weight and balance

Not applicable.

End of Section §4**“Procedure done at a Repair Center approved for Level 4”**

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§1. GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5. CERTIFICATES

5.1- Compliance certificate of SB No. 319 77 4097 (Tf 97) - LEVEL 1, 2, 3, 4
Important:

After application of the instructions given in this SB, please mail or email the fully-completed compliance certificate to:

SAFRAN HELICOPTER ENGINES
 Equipe Administration Base installée / Fleet Data Administrator Team, BP 25
 40220 TARNOS - France
 Email: data-fleet.fr.she@safrangroup.com

Equipment information						
Customer				Aircraft S/N		
	S/N	P/N	TSN*	TSO*	CSN*	CSO*
Engine						
Removed PRE Tf 97 pyrometric harness						
Installed POST Tf 97 pyrometric harness						

* TSN = Time Since New
 CSN = Cycles Since New

TSO = Time Since Overhaul
 CSO = Cycles Since Overhaul

Work done by:

I certify that the above-mentioned engine has been modified according to the directives given in this SB.

Date [DD/MMMM (letters)/YYYY]	Name	Job title

Signature: