

SERVICE BULLETIN No. 292 72 2218

Version: B

Date: 16 March 2022

Reason for update: SB extension to ARRIEL 2 L2 variant.

Modification

Recurring action

One-off action

Applicable from:
"MAY 2021"

Subject:
Module M05 - Replacement of the front and rear bearings of the intermediate gear.
Modification TU 218.

APPLICABLE ENGINE / VARIANT(S)	EFFECTIVITY CODE	MAINTENANCE LEVEL	CONDITION OF APPLICATION	OPERATIONAL EFFECT
ARRIEL 2 B, B1, B1A, C, C-PM, C1, C2, C2-CG, D, E, H, L2, N, S1, S2	2-A-3	1, 2, 3	Application upon customer request	Removal/installation of module M05
		4	Application upon first return to an approved Repair Center, if the repair/overhaul being performed provides access to the front or rear bearing of the intermediate gear	

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

CAUTION: APPLICATION OF MODIFICATION TU 218 NECESSITATES THE PRIOR OR SIMULTANEOUS APPLICATION OF ENGINE MODIFICATION:

- TU 99 ON ARRIEL 2 S1 AS PER SB NO. 292 72 2099 (INTERMEDIATE GEAR WITHOUT DAMPING RING).
- TU 139 ON ARRIEL 2 C2 AND C2-CG AS PER SB NO. 292 72 2139 AND SB NO. 292 72 2139M (INTERMEDIATE GEAR WITHOUT RING).
- TU 145 ON ARRIEL 2 B, B1, B1A, C, C-PM AND C1 AS PER SB NO. 292 72 2145 AND SB NO. 292 72 2145M (INTERMEDIATE GEAR WITHOUT RING).

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§1. GENERAL	§2. LEVEL 1, 2	§3. LEVEL 3	§4. LEVEL 4	§5. CERTIFICATES
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1. GENERAL

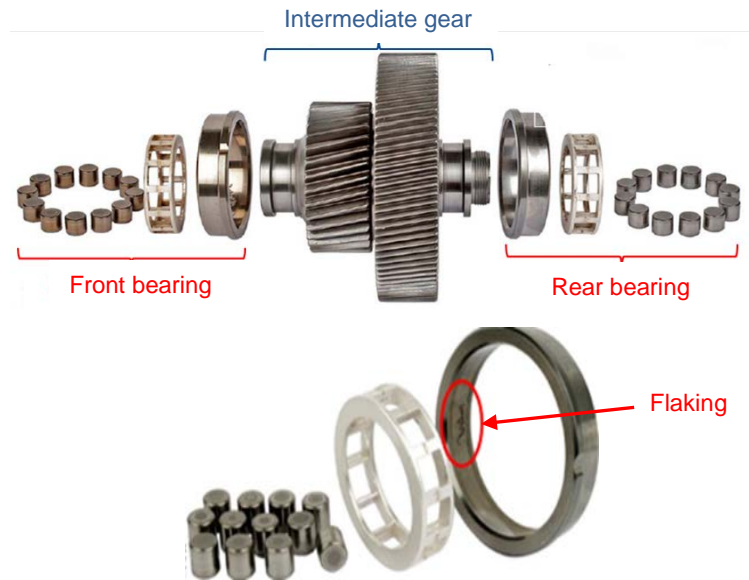
1.1. Background

1.1.1. Context

ARRIEL 2 operators reported cases of chips on the module M05 (reduction gearbox).

1.1.2. Analysis

Investigations of modules M05 removed from ARRIEL 2 engines after chip detection, predominantly show flaking from front and rear bearings of the intermediate gear.



1.1.3. Solution

Modification TU 218 introduces a change in the component material of the two bearings in order to improve their mechanical strength.

1.2. Approval

- ARRIEL 2 B - B1 - B1A - C - C1 - C2 - D - E - H - L2 - N - S1 - S2 variants:
The technical content of this document is approved under the authority of the DOA (Design Organisation Approval) ref. EASA.21J.070.
- ARRIEL 2 C-PM - C2-CG variants:
The technical information given in this document is approved by Safran Helicopter Engines.

1.3. Summary of updates

Version	Date	Primary cause for update
A	03/03/2021	First issue.
B	17/03/2022	SB extension to ARRIEL 2 L2 variant.

End of Section §1

“General”

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§1. GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§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: 2 man-hours (removal and installation of module M05).

2.2. Tooling and/or materials

- Mechanic's standard tooling.
- Removal and installation tool of the module M05: Refer to the applicable ARRIEL 2 Maintenance Manual, task 72-00-15-900-801.

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

POST TU 218 module M05.

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

2.4. Necessary procedures

Replacement of the PRE TU 218 module M05 with a POST TU 218 module M05: Refer to paragraph 2.6.

2.5. Block diagram for this SB

Not applicable.

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§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5. CERTIFICATES

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

Removal of the engine is necessary for this SB.

2.6.2. Operating instructions

- 2.6.2.1. Remove the PRE TU 218 module M05: Refer to the applicable ARRIEL 2 Maintenance Manual, task 72-00-15-900-801.
- 2.6.2.2. Install a POST TU 218 module M05: Refer to the applicable ARRIEL 2 Maintenance Manual, task 72-00-15-900-801.

2.6.3. Reconditioning and checks

Refer to the applicable ARRIEL 2 Maintenance Manual, task 05-50-00-200-801.

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. Update the log card of the installed module M05 and the log card of the removed module M05.
- 2.6.4.2. Record the replacement of the module M05 in section "B" of the engine log book and integrate the log card of the installed module M05.
- 2.6.4.3. Update the availability status in section "D" of the "current" engine log book and in section "E" of the "unique" engine log book.
- 2.6.4.4. Send back the fully-completed [compliance certificate in chapter 5.1](#) to tell Safran Helicopter Engines that this module M05 was replaced.

For the electronic engine log book:

Refer to Guide U797 (chapter Activities: SB / MODIFICATIONS).

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 5.2](#)

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 the applicable ARRIEL 2 Overhaul Manual.

4.3. Material information**4.3.1. Basic information**

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

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§1. GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5. CERTIFICATES

4.3.2. List of parts

New Part Number	Key	Qty	Description / Item	Old Part Number	Key	Qty
ARRIEL 2 B - B1 - C - C-PM - C1 - S1						
9 609 00 079 3	A	1	Bearing: - front bearing of the intermediate gear / 72-15-10-01-180 - rear bearing of the intermediate gear / 72-15-10-01-190	9 609 00 052 1 or 9 609 00 062 3 or 9 609 00 062 4 or 9 609 00 067 6 or 9 609 00 065 6	C	1
		1				1
9 609 00 079 4	A	1	Bearing: - front bearing of the intermediate gear / 72-15-10-01-180 - rear bearing of the intermediate gear / 72-15-10-01-190	9 609 00 073 4	C	1
		1				1
ARRIEL 2 B1A						
9 609 00 079 3	A	1	Bearing: - front bearing of the intermediate gear / 72-15-10-01-180 - rear bearing of the intermediate gear / 72-15-10-01-190	9 609 00 062 3 or 9 609 00 067 6 or 9 609 00 065 6	C	1
		1				1
9 609 00 079 4	A	1	Bearing: - front bearing of the intermediate gear / 72-15-10-01-180 - rear bearing of the intermediate gear / 72-15-10-01-190	9 609 00 073 4	C	1
		1				1
ARRIEL 2 L2						
9 609 00 079 3	A	1	Bearing: - front bearing of the intermediate gear / 72-15-10-01-180 - rear bearing of the intermediate gear / 72-15-10-01-190	9 609 00 067 6 or 9 609 00 065 6	C	1
		1				1
ARRIEL 2 C2 - C2-CG - D - E - H - N - S2						
9 609 00 079 3	A	1	Bearing: - front bearing of the intermediate gear / 72-15-10-01-180 - rear bearing of the intermediate gear / 72-15-10-01-190	9 609 00 067 6 or 9 609 00 065 6	C	1
		1				1
9 609 00 079 4	A	1	Bearing: - front bearing of the intermediate gear / 72-15-10-01-180 - rear bearing of the intermediate gear / 72-15-10-01-190	9 609 00 073 4	C	1
		1				1

Key

A	Part included by this modification
C	Part deleted by this modification

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§1. GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5. CERTIFICATES

4.3.3. 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

4.4. Necessary procedures

Replacement of the front and rear bearings of the PRE TU 218 intermediate gear with POST TU 218 bearings:
Refer to paragraph 4.6.

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 front and rear bearings of the PRE TU 218 intermediate gear: Refer to the ARRIEL 2 Overhaul Manual.
- 4.6.2.2. Install the front and rear bearings of the POST TU 218 intermediate gear: Refer to the ARRIEL 2 Overhaul Manual.

4.6.3. Reconditioning and checks

Refer to the applicable ARRIEL 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 on the Exchangeable Component Log Card (FMFE) of module M05.

Note: If necessary, update the availability status.

- 4.6.4.2. Send back the fully-completed [compliance certificate in chapter 5.2](#) to tell Safran Helicopter Engines that this SB was done.

For the electronic engine log book:

Refer to Guide U797 (chapter Activities: SB / MODIFICATIONS).

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§1. GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5. CERTIFICATES

4.7. Weight and balance

Not applicable.

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

SERVICE BULLETIN No. 292 72 2218

§1. GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5. CERTIFICATES

5.1- Compliance certificate for replacement of module M05 through application of SB No. 292 72 2218 (TU 218) - LEVEL 1, 2, 3
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 TU 218 module M05						
Installed POST TU 218 module M05						

* 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 Module M05 has been installed according to the directives of this SB.

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

Signature:

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§1. GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5. CERTIFICATES

5.2- Compliance certificate of SB No. 292 72 2218 (TU 218) - LEVEL 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 5
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						
Modified module M05						

* 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 (letter)/YYYY]	Name	Job title

Signature: