
MANDATORY SERVICE BULLETIN

Modification



Recurring action



One-off action



No.

292 72 2817

ARRIEL 2 B - B1 - B1A - C - C1 - C2 - D - E - N - S1 - S2

Subject: Return to service for civil operation of an ARRIEL 2 engine originating from an operator not controlled by a Civil Authority (military, paramilitary, etc.).

Date on which this Mandatory SB becomes effective and must systematically be complied with, according to the conditions of application.

Applicable from DECEMBER 2006

If resources (parts, tools, documentation, etc.) are available any earlier, the Mandatory SB may be applied prior to the effectivity date.

Version: C

Reason for update:

Upgrading and miscellaneous corrections.

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1. GENERAL

1.1. Purpose

Return to service, for use by an operator controlled by a Civil Authority, of equipment (engine, module, accessory or DECU) originating from an operator not controlled by a Civil Authority.

1.2. Reason

Use of equipment by an operator not controlled by a Civil Authority can lead to deviations from the type configuration approved by the Civil Authority.

Before its return to service for an operator controlled by a Civil Authority, it is necessary to make sure that there are no deviations but if there are, return-to-conformity actions must be performed.

1.3. Description

Equipment can only be declared Airworthy at a Safran Helicopter Engines-approved Repair Center.

This necessitates, for all equipment:

- presence of an identifier (identification plate or engraved part number),
- knowledge of the equipment configuration and proof of compliance with Safran Helicopter Engines-defined maintenance requirements,
- verification that there have been no modifications or repair procedures that are not approved by Safran Helicopter Engines to establish conformity with the approved definition file,
- compliance with the Airworthiness data approved by the Civil Authority,
- an "EASA Form One" or equivalent document.

For an engine, the following are also required:

- the creation of a civil engine log book in LMU (Unique Engine Log Book) format,
- verification that all engine components were manufactured under Safran Helicopter Engines control and that the initial new engine assembly was performed by Safran Helicopter Engines.

The owner of the equipment must provide documentation originating from the previous operator that indicates hours and cycles performed, as well as log cards records of minor or major engine maintenance operations to certify that operation and storage of the equipment complies with manufacturer requirements.

In the absence of these documents, the life-limited parts, use-limited parts and calendar-limited components will be replaced systematically.

An overhaul will be performed on all accessories that are subject to a TBO and that are returned to a Repair Center without their log card.

1.4. Approval

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

This Mandatory SB is subject to an Airworthiness Directive.

1.5. Conditions of application

The conditions of application for this Mandatory SB are specified in:

- Chapter §2 for application at the operator's site or at a Maintenance Center qualified for level 1, 2.
- Chapter §3 for application at a Maintenance Center qualified for level 3.
- Chapter §4 for application at a Safran Helicopter Engines-approved Repair Center.

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1.6. Update history

VERSION	CAUSE FOR UPDATING
B	To distinguish between the actions to be performed based on the equipment concerned. To introduce the D, E and N variants.
C	Upgrading and miscellaneous corrections.

END of section §1

"General"

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2. APPLICATION AT THE OPERATOR'S SITE OR AT A MAINTENANCE CENTER QUALIFIED FOR LEVEL 1, 2

2.1. Actions to be performed

Send equipment to a Repair Center.

2.2. Effectivity and compliance times

ENGINE/VARIANT	EFFECTIVITY CODE	CONDITIONS OF APPLICATION FOR ENGINES IN SERVICE
ARRIEL 2 B - B1 - B1A - C - C1 - C2 - D - E - N - S1 - S2 engines originally assembled by Safran Helicopter Engines and previously operated by an operator not controlled by a Civil Authority (military, paramilitary, etc.)	1	Immediate application before the next flight (upon receipt of this Mandatory SB).

Application of this Mandatory SB is considered mandatory as a result of a technical requirement which might affect the flight safety of engines in service. It may be done as defined by the effectivity code given in the table above.

Note: Engines originally assembled by Safran Helicopter Engines are identified by a Safran Helicopter Engines identification plate on the engine. If an engine was not originally assembled by Safran Helicopter Engines, it cannot be converted for civil operation.

2.3. Accomplishment Instructions

2.3.1. Implementation

Application of this Mandatory SB necessitates removing the equipment from the helicopter.

2.3.2. Procedure

Send equipment and its documentation, listed in § 2.4.2 to 2.4.4, to a Safran Helicopter Engines-approved Repair Center.

2.3.3. Reconditioning and checks

Not applicable.

2.3.4. Identification

Before shipment to a Safran Helicopter Engines-approved Repair Center:

- For an engine:
record the removal of the engine in section "E" of the engine log book and update the log cards of the relevant equipment,
- For an isolated accessory, module or DECU:
update the log card(s) of the relevant equipment.
- Record:
Notify Safran Helicopter Engines that this Mandatory SB has been applied by returning the fully-completed compliance certificate (Appendix 2.1) (one certificate for each relevant equipment).

2.3.5. Routine maintenance

No modification to the routine maintenance.

2.4. Information related to parts

2.4.1. Basic information

The parts list provided below and required for the application of this Mandatory SB is for one engine.

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2.4.2. List of parts for an engine

Key	Qty	Description / Item	Key	Qty
A	1	Engine Log Book *	C	1
A	1	A copy of the previous operator's Maintenance Manual		
A	1	A copy of the previous operator's Spare Parts Catalog		
A	1	A copy of the previous operator's Tools Catalog		
A	1	List of the previous operator's Service Letters		
A	1	List of Service Bulletins applied by the previous operator		
A	1	List of modifications applied by the previous operator		

* Per engine concerned

Key

A	Part required for the application of this Mandatory SB
C	Part deleted by this Mandatory SB

2.4.3. List of parts for an isolated accessory or module

Key	Qty	Description / Item	Key	Qty
A	1	The log card(s) of the relevant accessory/accessories or module(s)		
A	1	A copy of the previous operator's Maintenance Manual		
A	1	A copy of the previous operator's Spare Parts Catalog		
A	1	A copy of the previous operator's Tools Catalog		
A	1	List of the previous operator's Service Letters		
A	1	List of Service Bulletins applied by the previous operator		
A	1	List of modifications applied by the previous operator		

Key

A	Part required for the application of this Mandatory SB
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2.4.4. List of parts for a DECU

Key	Qty	Description / Item	Key	Qty
A	1	The log card		
A	1	List of the previous operator's Service Letters		
A	1	List of Service Bulletins applied by the previous operator		
A	1	List of modifications applied by the previous operator		

Key

A	Part required for the application of this Mandatory SB
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2.4.5. Supply conditions

Not applicable.

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2.5. Manpower

To be determined based on level of intervention required.

2.6. Tooling and/or products

Not applicable.

2.7. Weight and balance

Not applicable.

2.8. Publication references

Not applicable.

MANDATORY SERVICE BULLETIN

Objet : Attestation d'application du SB Impératif n° 292 72 2817 de remise en service pour utilisation civile.

Subject: Mandatory SB No. 292 72 2817 compliance certificate for return to service for civil operation.

Important / Important notice :

Après application des instructions spécifiées dans ce SB Impératif, veuillez compléter la présente attestation et la retourner par courrier ou courriel à :

After application of the instructions specified in this Mandatory SB, please mail or e-mail 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

Information concernant le matériel / Equipment information						
Utilisateur Customer					N° Appareil Aircraft S/N	
Matériel concerné/ Relevant equipment	N/S - S/N	Réf. - P/N	TSN*	TSO*	CSN*	CSO*

* **TSN = Time Since New** (Heures depuis neuf)
CSN = Cycles Since New (Cycles depuis neuf)

TSO = Time Since Overhaul (Heures depuis RG)
CSO = Cycles Since Overhaul (Cycles depuis RG)

Nom et adresse du propriétaire : Owner's name and adress:	
Nom du Centre de Réparation : Name of Repair Center:	
Civilisation faite par : Conversion for civil operation done by:	

Je certifie que la remise en service pour utilisation civile a été faite selon les directives de ce SB Impératif.
 I certify that the return to service for civil operation has been done according to the directives given in this Mandatory SB.

Date [JJ/MMMM (en lettre)/AAAA ou/or DD/MMMM (letter)/YYYY]	Nom / Name	Fonction / Job title

Signature :

ANNEXE 2.1 / APPENDIX 2.1

END of section §2

"Application at the operator's site or at a Maintenance Center qualified for level 1, 2"

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3. APPLICATION AT A MAINTENANCE CENTER QUALIFIED FOR LEVEL 3

Refer to the paragraphs that apply to Maintenance Centers, given in chapter 2.

END of section §3

"Application at a Maintenance Center qualified for level 3"

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4. APPLICATION AT A SAFRAN HELICOPTER ENGINES-APPROVED REPAIR CENTER

4.1. Actions to be performed

Examine and update the documentation, then apply the checks to the equipment per paragraph 4.3.

4.2. Effectivity and compliance times

ENGINE/VARIANT	EFFECTIVITY CODE	CONDITIONS OF APPLICATION FOR ENGINES IN SERVICE
ARRIEL 2 B - B1 - B1A - C - C1 - C2 - D - E - N - S1 - S2 engines originally assembled by Safran Helicopter Engines and previously operated by an operator not controlled by a Civil Authority (military, paramilitary, etc.)	1	Application before delivery.

Application of this Mandatory SB is considered mandatory as a result of a technical requirement which might affect the flight safety of engines in service. It may be done as defined by the effectivity code given in the table above.

Note: Engines originally assembled by Safran Helicopter Engines are identified by their Safran Helicopter Engines identification plate. If an engine was not originally assembled by Safran Helicopter Engines, it cannot be converted for civil operation.

4.3. Accomplishment Instructions

4.3.1. Implementation

The application of this Mandatory SB necessitates removing the relevant equipment from the helicopter.

4.3.2. For an engine or a module

4.3.2.1. Procedure

- (1) Examine the documentation originating from the previous operator, the follow-up of the inspections and frequencies, the archived work data pertaining to repair, general overhaul and storage (conditions/limitations).
- (2) Determine the hours and cycles performed to calculate the remaining availability.
- (3) Check the calendar availability according to the applicable Service Letter or Chapter 5 of the Maintenance Manual and the Overhaul Manual (Airworthiness limitation - Frequency - Inspection).
- (4) Check the time spent at Emergency Power ratings (twin-engine version only).
- (5) Record and assess:
 - any repair procedure that has not been approved by the manufacturer and the Civil Airworthiness Authority,
 - any component or equipment that is not mentioned in the certified definition of the concerned engine variant,
 - any concession that has not been approved by the Civil Airworthiness procedures.

Any non-approved repair procedure must:

 - either lead to replacement of the equipment concerned,
 - or be subject to a concession approved by Safran Helicopter Engines or a Civil Airworthiness Authority with either entity assuming responsibility for granting the concession.
- (6) Verify that the limitations of the life-limited and usage-limited components have not been exceeded.
- (7) Establish conformity with any Airworthiness Directive (AD).

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- (8) Analyze any possible helicopter and engine event (heavy landing, accident, presence of particles on the engine magnetic plug, SOA results, dilution results, visual check of engine that is outside criteria, identification record of equipment (equipment log cards) and accessible parts, etc.).
- (9) Verify that a minimum modification standard is applied.
This standard corresponds to all mandatory modifications and all modifications that are to be applied upon first return to an approved Repair Center, regardless of the reason for return (Codes 1 to 2-5). According to the level of disassembly, certain modifications could be mandatory if they are to be applied upon first return to an approved Repair Center, if the repair or overhaul being performed provides access to the part that is the subject of the modification (Codes 2-A-1 to 2-A-3).

In addition, the TBO will depend on the modification standard.

Note: For engine TBO and calendar availability, refer to the applicable Service Letters or to Chapter 5 of the Maintenance Manual and to the Overhaul Manual (Airworthiness limitation - Frequency - Inspection).

- (10) Verify that a minimum SB standard is applied.
This standard corresponds to all Mandatory SBs and all SBs that are to be applied upon first return to an approved Repair Center, regardless of the reason for return (Codes 1 to 2-5). According to the level of disassembly, certain SBs could be mandatory if they are to be applied upon first return to an approved Repair Center, if the repair or overhaul being performed provides access to the part that is the subject of the SB (Codes 2-A-1 to 2-A-3).

4.3.2.2. Reconditioning and checks

- (1) Test the engine on the test bench according to the "engine after repair" procedure by systematically carrying out all the checks described, except for the run-in operation if it is not necessitated by the work performed.
- (2) Create an "EASA Form One" or equivalent document and a civil engine log book. Archive the military engine log book. For an isolated module, create a new log card and archive the previous log card.

Refer to the applicable Maintenance Manual and Overhaul Manual.

4.3.3. For an isolated accessory

4.3.3.1. Procedure

- (1) Examine the documentation originating from the previous operator, the follow-up of the inspections and frequencies, the archived work data pertaining to repair, general overhaul and storage (conditions/limitations).
- (2) Determine the hours performed to calculate the remaining availability.
- (3) Check the calendar availability according to the applicable Service Letter or Chapter 5 of the Maintenance Manual.
- (4) Record and assess:
- any repair procedure that has not been approved by the manufacturer and the Civil Airworthiness Authority,
 - any component or equipment that is not mentioned in the certified definition of the concerned engine variant,
 - any concession that has not been approved by the Civil Airworthiness procedures.

Any non-approved repair procedure must:

- either lead to replacement of the equipment concerned,
- or be subject to a concession approved by Safran Helicopter Engines or a Civil Airworthiness Authority with either entity assuming responsibility for granting the concession.

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- (5) Establish conformity with any Airworthiness Directive (AD).
- (6) Analyze any possible event (incident or accident) concerning the equipment.
- (7) Verify that a minimum modification standard is applied.

This standard corresponds to all mandatory modifications and all modifications that are to be applied upon first return to an approved Repair Center, regardless of the reason for return (Codes 1 to 2-5). According to the level of disassembly, certain modifications could be mandatory if they are to be applied upon first return to an approved Repair Center, if the repair or overhaul being performed provides access to the part that is the subject of the modification (Codes 2-A-1 to 2-A-3).

In addition, the TBO will depend on the modification standard.

Note: For the hour TBO and calendar availability, refer to the Service Letter or to Chapter 5 of the Maintenance Manual.

- (8) Verify that a minimum SB standard is applied.
This standard corresponds to all Mandatory SBs and all SBs that are to be applied upon first return to an approved Repair Center, regardless of the reason for return (Codes 1 to 2-5). According to the level of disassembly, certain SBs could be mandatory if they are to be applied upon first return to an approved Repair Center, if the repair or overhaul being performed provides access to the part that is the subject of the SB (Codes 2-A-1 to 2-A-3).

4.3.3.2. Reconditioning and checks

- (1) Perform a Functioning Properly check (CBF - Contrôle de Bon Fonctionnement).
- (2) Create an "EASA Form One" or equivalent document and a new log card. Archive the previous log card related to military operation.

Refer to the Overhaul Manual, the Maintenance Manual and the Component Maintenance Manual.

4.3.4. For a DECU

4.3.4.1. Procedure

- (1) Examine the documentation originating from the previous operator, the follow-up of the inspections and frequencies, the archived work data pertaining to repair, general overhaul and storage (conditions/limitations).
- (2) Check the integrity of the seals to guarantee that there is no:
 - repair procedure that has not been approved by the manufacturer and the Civil Airworthiness Authority,
 - component or equipment that is not mentioned in the certified definition of the concerned engine variant.
- (3) Establish conformity with any Airworthiness Directive (AD).
- (4) Verify that a minimum modification standard is applied.

This standard corresponds to all mandatory modifications and all modifications that are to be applied upon first return to an approved Repair Center, regardless of the reason for return (Codes 1 to 2-5). According to the level of disassembly, certain modifications could be mandatory if they are to be applied upon first return to an approved Repair Center, if the repair or overhaul being performed provides access to the part that is the subject of the modification (Codes 2-A-1 to 2-A-3).

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- (5) Verify that a minimum SB standard is applied.

This standard corresponds to all Mandatory SBs and all SBs that are to be applied upon first return to an approved Repair Center, regardless of the reason for return (Codes 1 to 2-5). According to the level of disassembly, certain SBs could be mandatory if they are to be applied upon first return to an approved Repair Center, if the repair or overhaul being performed provides access to the part that is the subject of the SB (Codes 2-A-1 to 2-A-3).

4.3.4.2. Reconditioning and checks

- (1) Functioning Properly check (CBF - Contrôle de Bon Fonctionnement).
- (2) Create an "EASA Form One" or equivalent document and a new log card.
Refer to the Overhaul Manual, the Maintenance Manual and the Component Maintenance Manual.

4.3.5. Identification

4.3.5.1. For a complete engine

- (1) A new civil engine log book that is compliant with the Safran Helicopter Engines standard will be created by the Safran Helicopter Engines-approved Repair Center.
- (2) The engine will keep its original Serial Number.
- (3) Archive the initial military engine log book in compliance with the archiving rules. Refer to Guide U441.

4.3.5.2. For an isolated DECU, accessory or module:

- (1) The equipment will keep its original Serial Number.
- (2) Archive the initial military log card in compliance with the archiving rules. Refer to Guide U441.

4.3.5.3. For all equipment (engine, module, accessory or DECU)

Notify Safran Helicopter Engines that this Mandatory SB has been applied by returning the fully-completed compliance certificate (Appendix 4.1) (one certificate for each relevant equipment).

4.3.6. Routine maintenance

No modification to the routine maintenance.

4.4. Information related to parts

4.4.1. Basic information

The parts list required for the application of this Mandatory SB is for one engine.

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4.4.2. List of parts for an engine

Key	Qty	Description / Item	Key	Qty
A	1	Engine Log Book *	C	1
A	1	A copy of the previous operator's Maintenance Manual		
A	1	A copy of the previous operator's Spare Parts Catalog		
A	1	A copy of the previous operator's Tools Catalog		
A	1	List of the previous operator's Service Letters		
A	1	List of SBs applied by the previous operator		
A	1	List of modifications applied by the previous operator		

* Per engine concerned.

Key

A	Part required for the application of this Mandatory SB
C	Part deleted by this Mandatory SB

4.4.3. List of parts for an isolated accessory or module

Key	Qty	Description / Item	Key	Qty
A	1	Log card of the relevant accessory or module		
A	1	A copy of the previous operator's Component Maintenance Manual		
A	1	A copy of the previous operator's Spare Parts Catalog		
A	1	A copy of the previous operator's Tools Catalog		
A	1	List of the previous operator's Service Letters		
A	1	List of SBs applied by the previous operator		
A	1	List of modifications applied by the previous operator		

Key

A	Part required for the application of this Mandatory SB
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4.4.4. List of parts for a DECU

Key	Qty	Description / Item	Key	Qty
A	1	List of the previous operator's Service Letters		
A	1	List of Service Bulletins applied by the previous operator		
A	1	List of modifications applied by the previous operator		

Key

A	Part required for the application of this Mandatory SB
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4.5. Manpower

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

4.6. Tooling and/or products

Not applicable.

4.7. Weight and balance

Not applicable.

4.8. Publication references

Not applicable.

MANDATORY SERVICE BULLETIN

Objet : Attestation d'application du SB Impératif n° 292 72 2817 de remise en service pour utilisation civile.

Subject: Mandatory SB No. 292 72 2817 compliance certificate for return to service for civil operation.

Important / Important notice :

Après application des instructions spécifiées dans ce SB Impératif, veuillez compléter la présente attestation et la retourner par courrier ou courriel à :

After application of the instructions specified in this Mandatory SB, please mail or e-mail 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

Information concernant le matériel / Equipment information						
Utilisateur Customer					N° Appareil Aircraft S/N	
Matériel concerné/ Relevant equipment	N/S - S/N	Réf. - P/N	TSN*	TSO*	CSN*	CSO*

* **TSN** = Time Since New (Heures depuis neuf)
CSN = Cycles Since New (Cycles depuis neuf)

TSO = Time Since Overhaul (Heures depuis RG)
CSO = Cycles Since Overhaul (Cycles depuis RG)

Nom et adresse du propriétaire : Owner's name and adress:	
Nom du Centre de Réparation : Name of Repair Center:	
Civilisation faite par : Conversion for civil operation done by:	

Je certifie que la remise en service pour utilisation civile a été faite selon les directives de ce SB Impératif.

I certify that the return to service for civil operation has been done according to the directives given in this Mandatory SB.

Date [JJ/MMMM (en lettre)/AAAA ou/or DD/MMMM (letter)/YYYY]	Nom / Name	Fonction / Job title

Signature :

ANNEXE 4.1 / APPENDIX 4.1

END of section §4

"Application at a Safran Helicopter Engines-approved Repair Center"