
SERVICE BULLETIN

Modification <input checked="" type="checkbox"/>	Recurring action <input type="checkbox"/>	One-off action <input type="checkbox"/>
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No.**292 77 2101**

ARRIEL 2 B - C - C-PM - C1 - S1

Subject: Electrical control system. Installation of three ECET N2 speed sensors.**Application of modification TU 101A (Alternative to modification TU 89).**

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

This is the date all resources (parts, tools, documentation, etc.) required for this procedure are available.

Applicable from MAY 2004

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

Version: B**Reason for update:****Merger of SB No. 292 77 2101 and SB No. 292 77 2101M.**

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1. Compliance

A. Application

The manufacturer recommends this modification be incorporated as defined in this Service Bulletin.

Validity	Code
ARRIEL 2 B - C - C-PM - C1 - S1	2-C-1

Note 1: This modification will be deemed incorporated when the 3 identical ECET speed sensors P/N 9 550 17 580 0 have been installed.

Note 2: The assembly of 3 mixed speed sensors (2 IN-LHC sensors and 1 ECET sensor or 1 IN-LHC sensor and 2 ECET sensors) is authorized and covered by modification TU 121A (Service Bulletin No. 292 77 2121).

Note 3: If modification TU 89 is incorporated, the application of this modification is not required (modification TU 101A is an alternative to modification TU 89).

Conditions of application for engines in service

(1) Application at the operator's site or at a Safran Helicopter Engines-approved Maintenance Center

If replacing (discarding) the 3 N2 speed sensors.

(2) Application at a Safran Helicopter Engines-approved Repair Center

If replacing (discarding) the 3 N2 speed sensors.

B. Purpose

To facilitate provisioning by offering an alternative to modification TU 89.

C. Description (see appendix 1)

This modification consists of introducing, as an alternative use, ECET speed sensors with IN-LHC speed sensors.

D. Approval

- ARRIEL 2 B - C - C1 - S1 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 variant:
The technical information given in this document is approved by Safran Helicopter Engines.

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E. Manpower

- (1) **At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**
 - (a) **Personnel:** 1 mechanic.
 - (b) **Time required:** 1 man-hour (removal and installation of the 3 N2 speed sensors).
- (2) **At a Safran Helicopter Engines-approved Repair Center**
 - (a) **Personnel** of approved Repair Center.
 - (b) **Time** determined by the Repair Center as being appropriate for this level of intervention.

F. Material

Refer to paragraph 3.

G. Tooling

Mechanic's standard tooling.

H. Weight and balance

Not applicable.

I. References

- | | |
|---|----------------------|
| (1) ARRIEL 2 B Maintenance Manual..... | Ref. X 292 M5 450 2. |
| (2) ARRIEL 2 C Maintenance Manual..... | Ref. X 292 M1 450 2. |
| (3) ARRIEL 2 C-PM Maintenance Manual..... | Ref. X 292 P1 450 2. |
| (4) ARRIEL 2 C1 Maintenance Manual..... | Ref. X 292 N4 450 2. |
| (5) ARRIEL 2 S1 Maintenance Manual..... | Ref. X 292 L0 301 2. |
| (6) ARRIEL 2 Overhaul Manual..... | Ref. X 292 R1 500 2. |
| (7) Applicable Helicopter Maintenance Manual. | |

J. Other publications concerned

- | | |
|--|----------------------|
| (1) ARRIEL 2 B Spare Parts Catalogue..... | Ref. X 292 M5 700 2. |
| (2) ARRIEL 2 C Spare Parts Catalogue..... | Ref. X 292 M1 700 2. |
| (3) ARRIEL 2 C-PM Spare Parts Catalogue..... | Ref. X 292 P1 700 2. |
| (4) ARRIEL 2 C1 Spare Parts Catalogue..... | Ref. X 292 N4 700 2. |
| (5) ARRIEL 2 S1 Spare Parts Catalogue..... | Ref. X 292 L0 700 2. |
| (6) ARRIEL 2 B Illustrated Parts Catalogue..... | Ref. X 292 M5 600 2. |
| (7) ARRIEL 2 C Illustrated Parts Catalogue..... | Ref. X 292 M1 600 2. |
| (8) ARRIEL 2 C-PM Illustrated Parts Catalogue..... | Ref. X 292 P1 600 2. |
| (9) ARRIEL 2 C1 Illustrated Parts Catalogue..... | Ref. X 292 N4 600 2. |
| (10) ARRIEL 2 S1 Illustrated Parts Catalogue..... | Ref. X 292 L0 600 2. |

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2. Instructions to be incorporated

A. Implementation

Incorporation of this modification does not necessitate removing the engine.

(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center

Replace the 3 N2 speed sensors.

(2) At a Safran Helicopter Engines-approved Repair Center

Replace the 3 N2 speed sensors.

B. Operating instructions

(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center

(a) Remove the 3 N2 speed sensors PRE TU 101A: refer to the applicable ARRIEL 2 Maintenance Manual, task 77-12-00-900-801.

(b) Install the 3 N2 speed sensors POST TU 101A: refer to the applicable ARRIEL 2 Maintenance Manual, task 77-12-00-900-801.

(2) At a Safran Helicopter Engines-approved Repair Center

(a) Remove the 3 N2 speed sensors PRE TU 101A: refer to the ARRIEL 2 Overhaul Manual.

(b) Install the 3 N2 speed sensors POST TU 101A: refer to the ARRIEL 2 Overhaul Manual.

C. Reconditioning and checks

(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center

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

Note: Conduct a visual leak check of the 3 N2 speed sensors.

(2) At a Safran Helicopter Engines-approved Repair Center

Refer to the ARRIEL 2 Overhaul Manual.

D. Identification

(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center

(a) Record the application of this SB in sections A and E.

(b) Send back the fully-completed compliance certificate, links to the digital document

EngineLife Customer Portal: [Certificate 5.1 SB 292 77 2101 EN B](#) or



(2) At a Safran Helicopter Engines-approved Repair Center

(a) Record the application of this SB in section A.

(b) Send back the fully-completed compliance certificate, links to the digital document

EngineLife Customer Portal: [Certificate 5.1 SB 292 77 2101 EN B](#) or



E. Routine maintenance

Not applicable.

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3. Material information

A. Basic information

The parts list required for the incorporation of this Service Bulletin is for one engine.

B. List of parts

The parts will be available starting **AUGUST 2004**.

New Part Number	Key	Qty	Description *	Old Part Number	Key	Qty
9 550 17 580 0	A	3	N2 speed sensor	9 550 16 867 0	C	3

**Prices are available upon request.*

Key

A - Part incorporated by this modification.

C - Part eliminated by this modification.

C. Supply conditions

Order supplies as needed from:

your local Safran Helicopter Engines Support Center

or

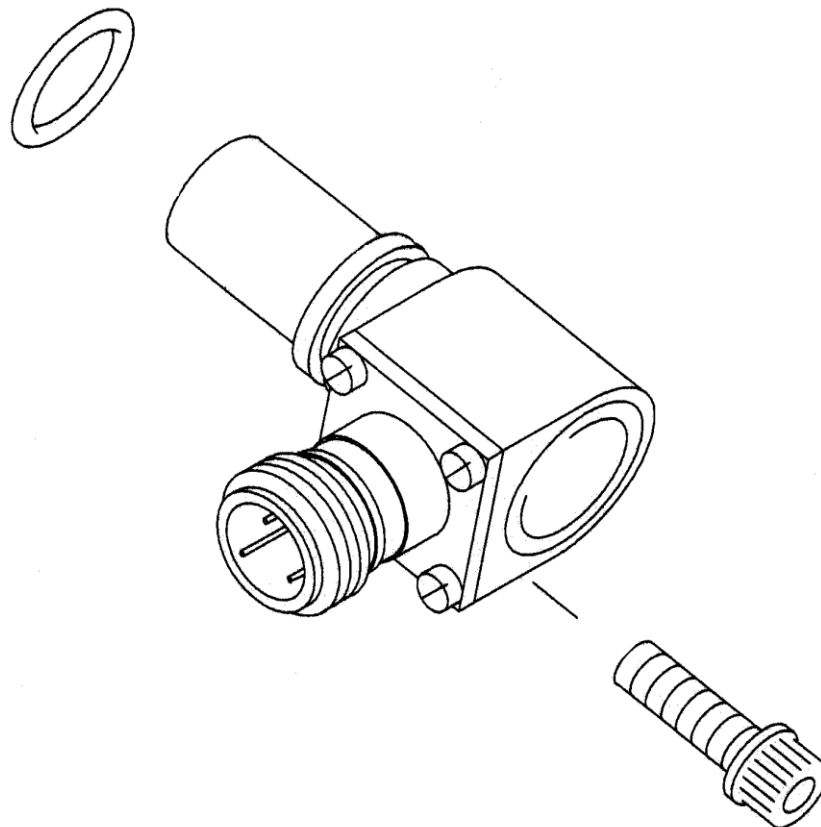
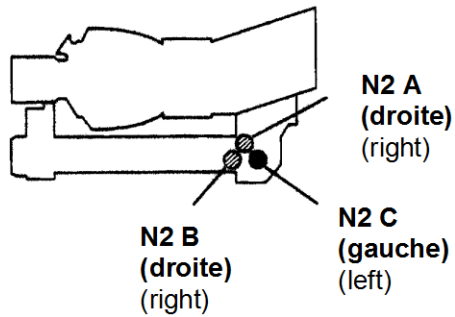
SAFRAN HELICOPTER ENGINES

Direction Support et Service

Département Commercial

40220 TARNOS - France

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Capteurs de vitesse N2
N2 speed sensors

ANNEXE 1 / APPENDIX 1

SERVICE BULLETIN

Subject: SB No. 292 77 2101 compliance certificate (TU 101A).

Important:

Fill in the compliance certificate after application of the instructions given in this SB
Mail or email it 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*	CSN HP*	CSN PT*
Engine					
Removed PRE TU 101A N2 speed sensors					
Installed POST TU 101A N2 speed sensors					

* TSN = Time Since New
CSN = Cycles Since New

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

Date [DD/MMMM (letters)/YYYY]	
Comments	

CERTIFICATE 5.1