



## Airworthiness Directive

**AD No.:** 2015-0090R1

**Issued:** 16 June 2020

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

### Design Approval Holder's Name:

SAFRAN HELICOPTER ENGINES

### Type/Model designation(s):

RTM 322 engines

**Effective Date:** Revision 1: 23 June 2020  
Original issue: 05 June 2015

**TCDS Number(s):** EASA.E.009

**Foreign AD:** Not applicable

**Revision:** This AD revises EASA AD 2015-0090 dated 22 May 2015.

## ATA 76 – Engine Controls – Electrical Wiring Harness – Modification

### Manufacturer(s):

SAFRAN Helicopter Engines (SAFRAN), formerly Turboméca, Rolls-Royce Turboméca

### Applicability:

RTM 322-01/9 and RTM 322-01/9A engines, all serial numbers, except those that have embodied SAFRAN modification (mod) C3064 in production, or the applicable modification SB, as defined in this AD, in service.

These engines are known to be installed on, but not limited to, NH Industries NH90 (military) helicopters.

### Definitions:

For the purpose of this AD, the following definitions apply:

**The MSB:** Turboméca Mandatory Service Bulletin (MSB) MSBP-M3-A-76-10-10-02A-A-A.

**The applicable modification SB:** SAFRAN Recommended Service Bulletin (SB) M3-A-76-00-00-02A-A-A.



**Reason:**

Over the last few years, the RTM 322 fleet experienced a number of standby captions linked to the inlet guide vane (IGV) / variable stator vane (VSV) resolver. The results of the technical investigations concluded that this is prevalent in hot and sandy environment. Although standby caption resulting from single lane failure in the engine electronic control unit would not affect engine operation, recent field survey showed an increasing occurrence rate of single lane failure of IGV / VSV resolver.

The investigation also identified the backing-off of ES2/3 harness connectors, in particular the IGV / VSV resolver connectors, as the cause of the in-service events. This disconnection is most likely due to the high level of wear within the ratchet mechanism. The wear is considered to be the result of repeated assembly and disassembly of the connectors which enabled ingress of foreign matter and self-generating debris. In case both IGV / VSV resolver lanes fail on the same engine during a single flight, this would result in the loss of IGV / VSV control, likely to cause a compressor surge.

This condition, if not corrected, may lead to an uncommanded engine in-flight shut-down (IFSD), possibly resulting in an emergency landing, with potential consequent damage to the helicopter and injury to occupants.

To address this potential unsafe condition, Turboméca issued the MSB, providing instructions for installation of a wire lock on the four IGV / VSV connectors (two IGV / VSV resolver connectors and two IGV / VSV actuator connectors), for engines operating in a hot and sandy environment. Consequently, EASA issued AD 2015-0090 to require installation of a wire lock on the IGV / VSV connectors.

Since that AD was issued, SAFRAN developed an improved ES2/3 harness, with a new standard of connectors that avoid the back-off issues identified in this AD. This AD is therefore revised to exclude engines having SAFRAN mod C3064 embodied in production, and introduces the applicable modification SB as optional terminating action for the requirements of this AD. This revised AD also introduces some editorial changes related to AD writing standards, without affecting the requirements.

**Required Action(s) and Compliance Time(s):**

Required as indicated, unless accomplished previously:

**Modification:**

- (1) Within 630 engine hours (EH) after 05 June 2015 [the effective date of the original issue of this AD], accomplish the following actions:
  - (1.1) Determine the engine history and operating conditions.
  - (1.2) If the engine operates, or has been operated, in a sandy environment (see Note 1 of this AD), or the operating conditions and/or operational history of the engine cannot be determined, modify the engine by installing a wire lock on the IGV / VSV connectors in accordance with the instructions of the MSB.

Note 1: The MSB provides a definition of a “sandy environment”.



- (2) After modification of an engine as required by paragraph (1.2) of this AD, each time the IGV / VSV connectors are disconnected on that engine (see Note 2 of this AD), before next flight after re-connection of the IGV / VSV connectors, install a wire lock on the IGV / VSV connectors.

Note 2: The applicable MSB provides a list of tasks that require connection and/or disconnection of the IGV / VSV connectors.

- (3) For an engine for which it has been determined, as required by paragraph (1) of this AD, that it does not operate in, and has never been operated in, a sandy environment (see Note 1 of this AD), if, at any time after the effective date of this AD, the type of mission or geographical operating area in which the engine is operated changes, within 630 EH after such a change, accomplish the actions as specified in paragraph (1.1) and, depending on determination, paragraph (1.2) of this AD.
- (4) From 05 June 2015 [the effective date of the original issue of this AD], do not install an engine on a helicopter, unless in compliance with the requirements of paragraphs (1), (2) and (3) of this AD.

**Terminating Action:**

- (5) Modification of an engine in accordance with the instructions of the applicable modification SB constitutes terminating action for the actions as required by paragraphs (1), (2) and (3) of this AD for that engine.

**Ref. Publications:**

Turboméca MSBP-M3-A-76-10-10-02A-A-A Issue 1 dated 24 March 2015.

SAFRAN SB M3-A-76-00-00-02A-A-A original issue dated 20 January 2020.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

**Remarks:**

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. The original issue of this AD was posted on 16 April 2015 as PAD 15-045 for consultation until 14 May 2015. No comments were received during the consultation period.
3. Enquiries regarding this AD should be referred to the EASA Programming and Continued Airworthiness Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the [EU aviation safety reporting system](#).



5. For any question concerning the technical content of the requirements in this AD, please contact your nearest SAFRAN Helicopter Engines technical representative, or connect to: [www.tools.safran-helicopter-engines.com](http://www.tools.safran-helicopter-engines.com).

