



A Textron Company

## ALERT SERVICE BULLETIN

**505-18-09**

18 July 2018

Revision A, 5 June 2019

**MODEL AFFECTED:** 505

**SUBJECT:** ROTORCRAFT FLIGHT MANUAL TEMPORARY  
REVISION, REVISION TO ABNORMAL  
PROCEDURE OF HMU AUX CTRL

**HELICOPTERS AFFECTED:** PART I: Serial numbers 65011 through 65279.

**PART II:** Serial numbers 65011 through 65074,  
65077 through 65081, 65083 through 65132, 65134  
through 65141, 65143, 65144, 65146 through  
65148, 65151 through 65169, 65171 through 65180,  
65182 through 65184, 65187, 65188, 65190 through  
65193, 65195 through 65204, 65207 through 65209,  
65211 through 65214, 65218, 65234, 65241.

[Serial numbers 65075, 65076, 65082, 65133, 65142,  
65145, 65149, 65150, 65170, 65181, 65185, 65186,  
65189, 65194, 65205, 65206, 65210, 65215 through  
65217, 65219 through 65233, 65235 through 65240,  
65242 through 65279 and subsequent will have the  
intent of **PART II** accomplished prior to delivery].

**COMPLIANCE:** **PART I:** Within 30 days following the initial release  
date of this bulletin.

**PART II:** Refer to Safran Service Bulletin 319 73 4091  
application of modification TF-91.

### DESCRIPTION:

It was brought to Bell's attention by Safran Helicopter Engines (SHE) that a new failure mode was found to exist with the auxiliary fuel metering system on the Arrius 2R engine. If the Hydromechanical Unit (HMU) main metering valve is frozen, the auxiliary metering

valve controls fuel flow as commanded by the Electronic Control Unit (ECU) in Auxiliary Control Unit (ACU) mode and the HMU AUX CTRL Caution message is displayed. The ACU mode may not function properly above 13000 feet Hp (4000 meters) altitude, due to a minimum voltage discrepancy between the ECU and the auxiliary metering valve actuator. If the HMU main metering valve was to freeze at that altitude or above, the effects would be such that the fuel flow would decrease if the power demand was reduced but would not be able to increase if the power demand was to be increased. Safran is working an engine software change to address this issue.

This Alert Service Bulletin (ASB) introduces a temporary change to the Rotorcraft Flight Manual (RFM) Section 3 emergency and malfunction procedures in the event an HMU AUX CTRL Caution message was to be displayed in flight.

**Revision A** of this Alert Service Bulletin introduces a terminating action to the original release by the introduction of **PART II** of this bulletin. **PART II** requires the accomplishment of the attached Safran Helicopter Engines Service Bulletin 319 73 4091. The application of modification TF 91 to the Arrius 2R engine improves the functionality of the Electronic Engine Control Unit (EECU) software. Amongst other improved features, TF 91 incorporates improvements to the Flame Out Protection System (FOPS) test procedure rendering the functional check accurate. The BHT-505-FM Flight Manual Temporary Revision 5 (TR-5) introduces the procedural change to the FOPS test. Refer to the Safran Service Bulletin for all other improvements incorporated into this software release.

Accomplishment of **PART II** of this bulletin is considered as the terminating action to this ASB.

Owner/operators having accomplished the original release of this ASB are not required to accomplish **PART I** of this bulletin, as the intent is already met.

#### **APPROVAL:**

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

#### **CONTACT INFO:**

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering - Light Helicopters  
Tel: 450-437-2862 / 1-800-363-8023 / pselight@bellflight.com

#### **MANPOWER:**

Approximately 0.5 man-hours are required to complete **PART I** of this bulletin.  
Approximately 1.0 man-hour is required to complete **PART II** of this bulletin.  
This estimate is based on hands-on time and may vary with personnel and facilities available.

#### **WARRANTY:**

There is no warranty credit applicable for parts or labor associated with this bulletin.

**MATERIAL:**

**Required Material:**

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center.

| <u>Part Number</u> | <u>Nomenclature</u>                                | <u>Qty (Note)</u> |
|--------------------|----------------------------------------------------|-------------------|
| BHT-505-FM-1(TR-4) | 505 Rotorcraft Flight Manual<br>Temporary Revision | 1                 |
| BHT-505-FM-1(TR-5) | 505 Rotorcraft Flight Manual<br>Temporary Revision | 1                 |
| 70EMS01020         | Electronic Engine Control Unit<br>(EECU)           | 1 (1)             |

**NOTE 1:** Required for accomplishment of **PART II** and the Safran Helicopter Engines Service Bulletin 319 73 4091. The existing EECU P/N 70EMS01010 may be upgraded to the new configuration by contacting a Safran Helicopter Engines Approved Repair Center.

**SPECIAL TOOLS:**

None required.

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

BHT-505-FM-1 (TR-4), Flight Manual Temporary Revision  
BHT-505-FM-1 (TR-5), Flight Manual Temporary Revision  
SAFRAN Service Bulletin 319 73 4091 - Application of Modification TF 91

**PUBLICATIONS AFFECTED:**

**ACCOMPLISHMENT INSTRUCTIONS:**

**PART I – BHT-505-FM-1 (TR-4) Temporary Revision Introduction**

1. Insert BHT-505-FM-1 (TR-4) into BHT-505-FM-1 Rotorcraft Flight Manual.
2. Make sure to communicate to the model 505 pilots the content of the revised emergency and malfunction procedures in the event the HMU AUX CTRL Caution message was displayed in flight. In such an event, if the helicopter is flying at or above 13000 feet HP (4000 meters) altitude, the flight crew is to perform the amended (TR-4) procedure as detailed in the BHT-505-FM-1 Rotorcraft Flight Manual Section 3 Table 3-2 caution message procedure for HMU AUX CTRL.
3. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART I** of this Alert Service Bulletin.

**PART II: BHT-505-FM-1 (TR-5) Temporary Revision Introduction**

1. Comply with the Safran Helicopter Engines Service Bulletin 319 73 4091, application of modification TF 91 to the Arrius 2R engine.
2. Remove BHT-505-FM-1 (TR-4) from the BHT-505-FM-1 Rotorcraft Flight Manual.
3. Insert BHT-505-FM-1 (TR-5) into the BHT-505-FM-1 Rotorcraft Flight Manual.
4. Make sure to communicate to the model 505 pilots the removal of the BHT-505-FM-1 (TR-4), that was affecting the HMU AUX CTRL emergency procedure.
5. Make sure to communicate to the model 505 pilots and maintenance personnel the content of the revised Flame Out Protection System (FOPS) test procedure in the BHT-505-FM-1 (TR-5).
6. Compliance with **PART II** is considered as the terminating action to this Alert Service Bulletin.
7. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART II** of this Alert Service Bulletin.