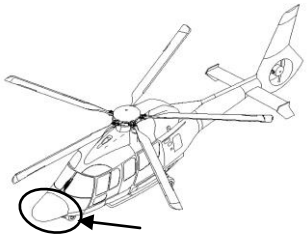
No. EC155-24-024

Civil version(s): B, B1

SERVICE BULLETIN

PROTECTIVE MEASURE

ELECTRICAL POWER - Radome
Check for interference between harnesses



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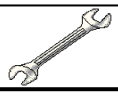
	

Revision No.	Date of issue
Revision 0	2021-04-29

Summary:

This Service Bulletin is applied to make sure that the routing is correct and that there is no damage on the harnesses located in the Radome.

Compliance:

Airbus Helicopters recommends that you comply with this Service Bulletin.

1. PLANNING INFORMATION

1.A. EFFECTIVITY

1.A.1. Helicopters/installed equipment or parts

All EC155 helicopters, versions B and B1.

1.A.2. Non-installed equipment or parts

Not applicable.

1.B. ASSOCIATED REQUIREMENTS

Not applicable.

1.C. REASON

During landing phase, a burnt smell was identified by the crew, proceeding to shut down as soon as possible.

After investigation it was identified cable “1PP33E” damaged due to interference with harness “11D38-BP1”.
The FADEC was damaged as well.
The rest of the concerned customer fleet was inspected searching similar damage identifying two additional helicopters with marks in the same zone (see example in Picture 1 below).

Consequently, Airbus Helicopters recommends checking the cable routing and making sure that there is no damage on the harnesses located in the Radome.

Picture 1 - General overview “11DEL” Patchboard and “1PP33E” cable

1.D. DESCRIPTION

The purpose of this Service Bulletin is to:
- do a check of the harnesses condition and routing in the radome,
- make sure that there is no interference between harnesses,
- if necessary:
  . improve the routing to prevent interference,
  . apply the repair criteria to the damaged wires.

1.E. COMPLIANCE

1.E.1. Compliance at H/C manufacturer level

Not applicable.

1.E.2. Compliance in service

The work must be performed on the helicopter by the operator.

Helicopters/installed equipment or parts:

Airbus Helicopters recommends that you comply with paragraph 3. of this Service Bulletin during one of the next maintenance inspections in relation to your operational availabilities/constraints.

Non-installed equipment or parts:

Not applicable.

1.F. APPROVAL

Approval of modifications:

Not applicable.

Approval of this document:

The technical information contained in this Service Bulletin Revision 0 was approved on April 28, 2021 under the authority of EASA Design Organization Approval No. 21J.700 for civil version helicopters subject to an Airworthiness Certificate.

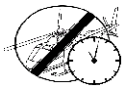
1.G. MANPOWER

For compliance with this Service Bulletin, Airbus Helicopters recommends the following staff qualification:

Qualification: 1 Electrical Technician.

The Estimated Man-hours are indicated for reference purposes only and based on a standard helicopter configuration.

Estimated Man-hours: 1 hour for the Electrical Technician (excluding the time to repair and improve the routing of the harnesses).



Estimated helicopter downtime is indicated for reference purposes only, based on a standard helicopter configuration.

Helicopter downtime is estimated at one hour.

1.H. WEIGHT AND BALANCE

Not applicable.

1.I. POWER CONSUMPTION

Not applicable.

1.J. SOFTWARE UPGRADES/UPDATES

Not applicable.

1.K. REFERENCES

The following documents are required for compliance with this Service Bulletin:

Aircraft Maintenance Manual (AMM):

AMM: 24-00-00-481: Power Supply - Electrical Power Systems
AMM: 24-00-00-911: General Safety Instructions - Electrical Power
AMM: 24-30-00-722: Tests - DC Power System

Standard Practices Manual (MTC):

MTC: 20-02-01-602: Cables insulation / continuity test procedure - General
MTC: 20-07-02-201: Helicopter parked in a repair shop - Safety instructions
MTC: 20-07-03-406: Instructions applicable when working on an aircraft electrical circuit and power generating systems - Technical instructions
MTC: 20-07-03-408: Appearance checks on an aircraft after inspection or repair - Technical instructions
MTC: 20-80-20-103: Repair Procedure for Single-Conductor, Two-Conductor, Three-Conductor and Four-Conductor Shielded Cables -Standard Practices - Electrical Power
MTC: 20-80-20-441: Installation of electrical cable bundles and optical fibers - Standard Practices - Electrical Power
MTC: 20-80-20-443: Repair Methods for Braided Electrical Harnesses - Standard Practices - Electrical Power

Information Notice (IN):

IN: 3481-I-00: The Marketplace: an AirbusWorld eOrdering service
IN: 3643-I-00: Introduction of the digital Service Bulletin reporting R-Tex

1.L. OTHER AFFECTED PUBLICATIONS

Not applicable.

1.M. PART INTERCHANGEABILITY OR MIXABILITY

Not applicable.

2. EQUIPMENT OR PARTS INFORMATION

2.A. EQUIPMENT OR PARTS: PRICE - AVAILABILITY - PROCUREMENT

Not applicable.

2.B. LOGISTIC INFORMATION

Not applicable.

2.C. EQUIPMENT OR PARTS REQUIRED PER HELICOPTER/COMPONENT

Consumables to be ordered separately:

As per the Tasks and Work Cards indicated in this Service Bulletin.

You can order the consumables from the AirbusWorld Marketplace through e-ordering (IN 3481-I-00).
If you can't get access to e-ordering, please contact your Logistic Focal Point.

Special tools:

As per the Tasks and Work Cards indicated in this Service Bulletin.

2.D. EQUIPMENT OR PARTS TO BE RETURNED

Not applicable.

3. ACCOMPLISHMENT INSTRUCTIONS

3.A. GENERAL

- As per Work Card 24-00-00-911 (AMM), read and comply with the general electrical instructions.
- As per Work Card 20-07-02-201 (MTC), read and comply with the safety instructions for a helicopter parked in a repair shop.

3.B. WORK STEPS

3.B.1. Preliminary steps

- Park the helicopter in a maintenance area.
- Disconnect all the electrical power supplies: refer to Work Card 20-07-03-406 (MTC).
- Install the appropriate access equipment.
- Open the radome.

3.B.2. Procedure

3.B.2.a. Checking for harnesses (Figure 1)

Refer to Figure 1
- Identify the cables with large cross-sections (a).
- Perform a visual check of the condition and routing of the cables with large cross-sections (a).
- Make sure that there is no interference between the cables with large cross-sections (a) and the surrounding components.

3.B.2.b. Interpretation of the results

- If there is no interference and no deteriorated cables:
  . comply with paragraph 3.B.4.
- If there is an interference and/or a deteriorated cable:
  . comply with paragraph 3.B.2.c.

3.B.2.c. Repair and improvement of the harnesses

- If a cable is deteriorated:
  . if only the sheath is deteriorated, repair the cable, refer to the Work Cards 20-80-20-103 (MTC) and 20-80-20-443 (MTC),
  . if the sheath and the cable are deteriorated, before resuming flights, contact the Airbus Helicopters Support Department to get an approved repair solution by creating a Technical Event (TE) on WebTEK: https://airbusworld.helicopters.airbus.com
- Improve the cable routing: refer to Work Card 20-80-20-441 (MTC).
- If at least one cable is repaired and/or unpluged/pluged:
  . comply with paragraph 3.B.3.

3.B.3. Tests

All cases

- Perform an insulation and a continuity test: refer to Work Card 20-02-01-602 (MTC).
- Comply with the preliminary steps of the Task 24-30-00-722 (AMM).
- Perform the following tests:

Case 1 with onboard battery system

. on the 12 ALPHA overhead panel, set the "BAT / ESS" switch to "ON" and make sure that:
.. the "BAT", "ESS" and "BUS TIE" messages are not displayed on the CAD,
. activate the red repeater warning lights,
. on the 12 ALPHA overhead panel, set the "EMERGENCY CUT OFF" control to "ON" and make sure that:
.. all the circuit breakers energize the helicopter power systems,
.. the "BUS TIE" message is no longer displayed on the CAD,
- on the 12 ALPHA overhead panel, set the "BAT / ESS" switch to "OFF".

Case 2 with ground power unit receptacle system

. energize the helicopter power systems sub-task 24-00-00-481-002 of the Task 24-00-00-481 (AMM),
. on the 12 ALPHA overhead panel, set the "BAT / ESS" switch to "ON" and make sure that:
.. the LH and RH "BAT" and "GEN" messages are displayed on the CAD,
.. + 28 V is on the outputs of the 1 ALPHA and 2 ALPHA units,
.. the 3 ALPHA, 4 ALPHA and 5 ALPHA circuit breaker panels (all circuit breakers) are energized,
. on the 12 ALPHA overhead panel, set the "BAT / ESS" switch to "OFF",
. de-energize the helicopter power systems: refer to sub-task 24-00-00-481-002 of the Task 24-00-00-481 (AMM).

All cases

Comply with the final steps of the Task 24-30-00-722 (AMM).

3.B.4. Final steps

- Close the radome.
- Remove the access equipment.
- Connect the electrical power supplies.
- Clean and restore the work zones and the helicopter: refer to Work Card 20-07-03-408 (MTC).
- Set the helicopter to flight conditions.

3.C. RECORD OF COMPLIANCE

Compliance with this document:

- Record full compliance with this Service Bulletin, with the revision number, in the helicopter documents.

- Record compliance with this Service Bulletin (see IN 3643-I-00 for instructions):
  QR-Code or hypertext link

SB EC155 24-024

NOTE

The recording of compliance with Service Bulletins in the R-Tex tool does not replace the recording in the helicopter documents.

3.D. OPERATING AND MAINTENANCE INSTRUCTIONS

Not applicable.

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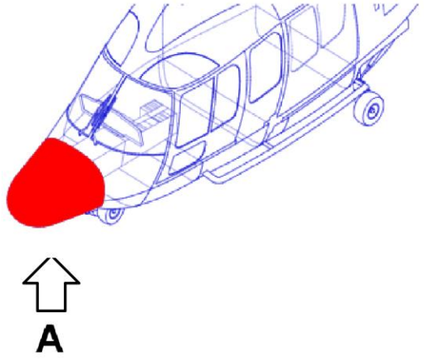

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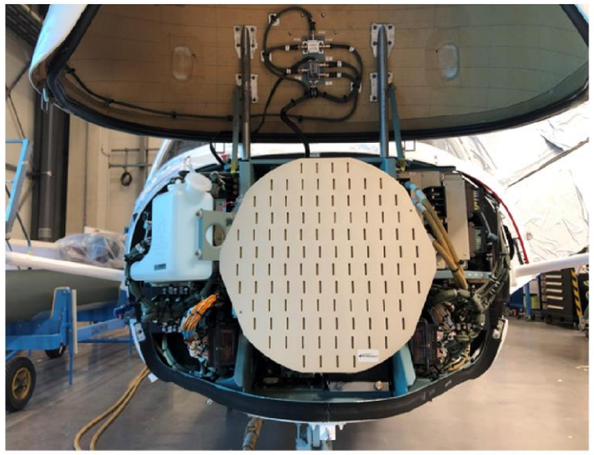

C

B

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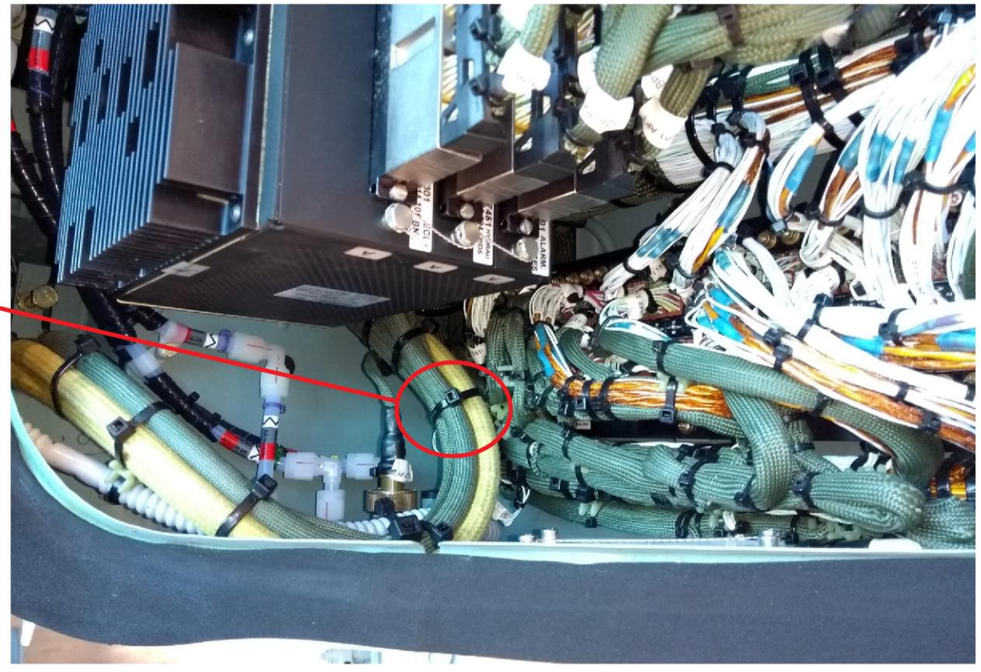
RH SIDE SHOWN



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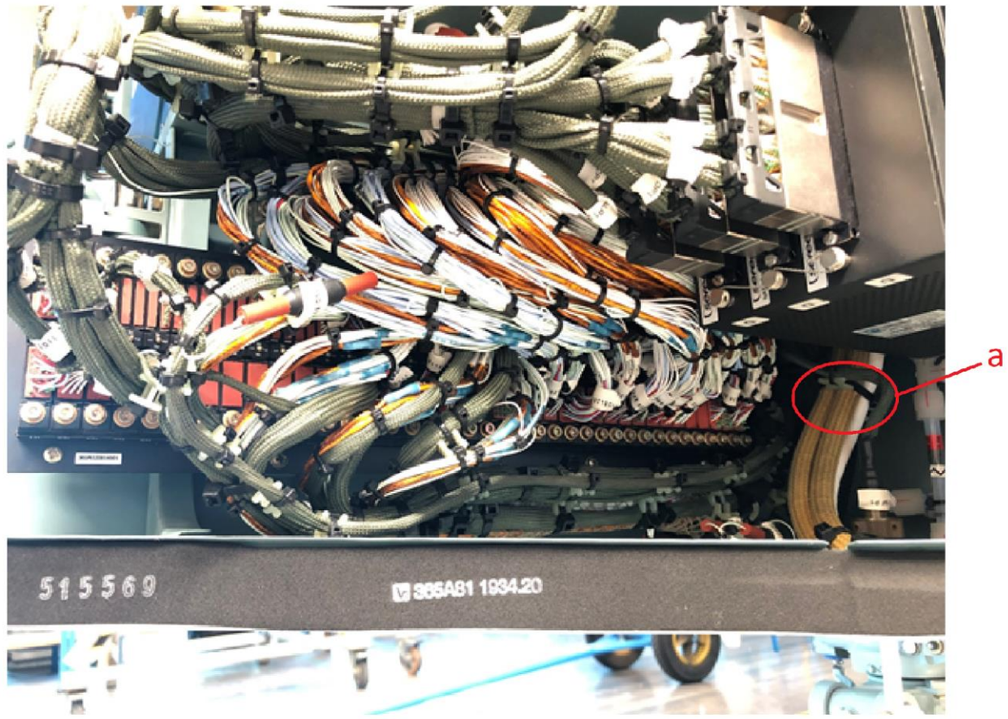
LH SIDE SHOWN



Return to paragraph 3.B.2.a.

Figure 1