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SERVICE BULLETIN

N° **139-704**

**RECOMMENDED**

DATE: March 21, 2024

REV. : /

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**TITLE**

ATA 93 - OPLS ELECTRICAL INSTALLATION IMPROVEMENT

**REVISION LOG**

First Issue

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An appropriate entry should be made in the aircraft log book upon accomplishment.  
If ownership of aircraft has changed, please, forward to new owner.

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# 1. PLANNING INFORMATION

## A. EFFECTIVITY

All AW139 helicopters up to S/N 31976 and up to S/N 41571 included that install electrical provision P/N 3G9360A00211 or P/N 3G9360A00212 of kit OPLS P/N 4G9360F00211.

## B. COMPLIANCE

### NOTE

The compliance time is subject to the same tolerances as per AMPI Chap. 05 DM 39-A-05-11-00-00A-028E-P Permitted inspection/check interval tolerances - General.

Within and not later than 300 flight hours or 12 months whichever occurs first after the issue of this Service Bulletin.

LH recommends the implementation of this SB in accordance with the indicated compliance time, with related tolerances as applicable. It is Operator's responsibility to properly plan and execute the SB application i.a.w. LH recommendations. The Operator remains liable for any deviation.

## C. CONCURRENT REQUIREMENTS

N.A.

## D. REASON

Following reported cases of slightly corroded OPLS connectors and chafing of their cables against the front firewall, LH has improved the electrical installation of the kit in order to assure a better protection of the connectors and a better fixing of the cables.

This Service Bulletin is aimed to introduce those upgrades on the in-service helicopters equipped with the electrical provision of kit OPLS P/N 4G9360F00211.

LH issued this SB for the following reason:

Helicopter Reliability/Maintainability	
Product Improvement	✓
Obsolescence	
Customization	
Product/Capability Enhancement	

## E. DESCRIPTION

This Service Bulletin provides the necessary instructions to improve the OPLS electrical provision P/N 3G9360A00211 or P/N 3G9360A00212. This is done by protecting the laser sensor units connectors on the upper deck with the use of a thermofit sleeve and by replacing their existing fixings on the front firewall in order to avoid chafing of their cables.

## F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives. If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

## G. MANPOWER

To comply with this Service Bulletin sixteen (16) MMH are deemed necessary.

MMH are based on hands-on time and can change with personnel and facilities available.

## H. WEIGHT AND BALANCE

N.A.

## I. REFERENCES

### I.1 PUBLICATIONS

Following Data Modules refer to AMP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	-
DM02 39-A-06-41-00-00A-010A-A	Access doors and panels - General data.	-
DM03 39-A-20-10-19-00A-920A-A	Plastic loom support – Replacement.	-

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM04 39-A-20-10-09-00A-920A-A	Bonded studs – Replacement.	-

## **I.2 ACRONYMS & ABBREVIATIONS**

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
LH	Leonardo Helicopters
MMH	Maintenance Man Hours
OPLS	Object Proximity Lidar System
P/N	Part Number
S/N	Serial Number

## **I.3 ANNEX**

N.A.

## **J. PUBLICATIONS AFFECTED**

N.A.

## **K. SOFTWARE ACCOMPLISHMENT SUMMARY**

N.A.

## 2. MATERIAL INFORMATION

### A. REQUIRED MATERIALS

#### A.1 PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	NAS1149D0332J		Washer	2	.		139-704L1
2	MS21043-3		Nut	2	.		139-704L1
3	AW001CB05H		Clamp	2	.		139-704L1
4	A366A3E10C75		Stud	2	.		139-704L1

Refer also to IPD for the spares materials required to comply with the AMP DMs referenced in the accomplishment instructions.

#### A.2 CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
5	EN6049-006-25-5	Nomex braided sleeving	AR	(1)	-
6	M23053/5-109-0	Tubing	AR	(1)	-
7	Commercial	Adhesive Raychem S1125 (C373)	AR	(1)	-
8	AW001CK03LC or 900004953	Tie strap	AR	(1)	-
9	MMM-A-132, Type 2, Class II 199-05-002 Type I, Class II	Adhesive EA 9309.3NA AERO (C021)	AR	(1)	-
10	99999999000001675	Adhesive CB200-40 (C356)	AR	(1) (2)	-

Refer also to AMDI for the consumable materials required to comply with the AMP DM referenced in the accomplishment instructions.

#### A.3 LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
139-704L1	1		-

#### NOTE

- (1) Item to procured as local supply.
- (2) As an alternative to Adhesive EA 9309.3NA AERO (C021).

### B. SPECIAL TOOLS

N.A.

## **C. INDUSTRY SUPPORT INFORMATION**

Owners/Operators who comply with the instructions of this Service Bulletin no later than the applicable date in the “Compliance” section will be eligible to receive required materials on free of charge basis, except for Consumable Materials and Special Tools.

NOTE: Customers who fail to comply with the instructions in this Service Bulletin before the compliance date are not eligible for the aforementioned special policy.

Please Issue relevant MMIR form to your Warranty Administration Dpt. including Chart A page showing evidence of kit OPLS installation on the helicopter S/N. If the requested attachment is not provided MMIR will be provided.

### **3. ACCOMPLISHMENT INSTRUCTIONS**

#### **GENERAL NOTES**

- a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.
  - b) Shape the cables in order to prevent interference with the structure and the other existing installations, using where necessary suitable lacing cords and plastic cable tiedown.
  - c) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
  - d) All lengths are in mm.
1. In accordance with DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
  2. In accordance with DM 39-A-06-41-00-00A-010A-A and with reference to Figures 1 and 2, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform the following procedure:

#### **NOTE**

Perform the following step only if the connectors are stowed.

- 2.1 With reference to Figure 1 Detail C, free the connectors A445P1, A445P2, A447P1, A447P2, A446P1, and A446P2 from the stowage.

#### **NOTE**

Perform the following step only if the connectors are connected.

- 2.2 With reference to Figure 1 View A and Figure 2 View B-B Was, disconnect the connectors A445P1, A445P2, A447P1, A447P2, A446P1, and A446P2 from the laser sensor units.
- 2.3 In accordance with applicable steps of AMP DM 39-A-20-10-19-00A-920A-A and with reference to Figure 2 View B-B Was, remove n°2 supports P/N AW001CL001-N6 from the firewall.

- 2.4 In accordance with applicable steps of AMP DM 39-A-20-10-09-00A-920A-A and with reference to Figure 2 View B-B Becomes, install n°2 stud P/N A366A3E10C75 on the firewall by means of adhesive EA 9309.3NA AERO (C021).
- 2.5 With reference to Figure 2 View B-B Becomes, install n°2 clamps P/N AW001CB05H on the C/A F2A217 and C/A F1A230 by means of n°2 washers P/N NAS1149D0332J and n°2 nuts P/N MS21043-3.
- 2.6 With reference to Figure 1 Detail D, protect the connector A446P1 by means of one piece of tubing P/N M23053/5-109-0, covering also the wire with an overlap in accordance with the dimensions shown, and bond it by means of adhesive Raychem S1125 (C373).
- 2.7 Repeat the previous step 2.6 for the connectors A445P1, A445P2, A447P1, A447P2, and A446P2.

**NOTE**

Perform the following step only if the connectors were previously stowed (ref. step 2.1).

- 2.8 With reference to Figure 1 Detail C, protect and stow the connectors A445P1, A445P2, A447P1, A447P2, A446P1, and A446P2 by means of nomex P/N EN6049-006-25-5 and tie strap P/N AW001CK03LC.

**NOTE**

Perform the following step only if the connectors were previously connected (ref. step 2.2).

- 2.9 With reference to Figure 1 View A and Figure 2 View B-B Becomes, connect the connectors A445P1, A445P2, A447P1, A447P2, A446P1, and A446P2 to the laser sensor units.
3. In accordance with AMP DM 39-A-06-41-00-00A-010A-A re-install all external panels, internal panels and liners previously removed.
4. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
5. Gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".

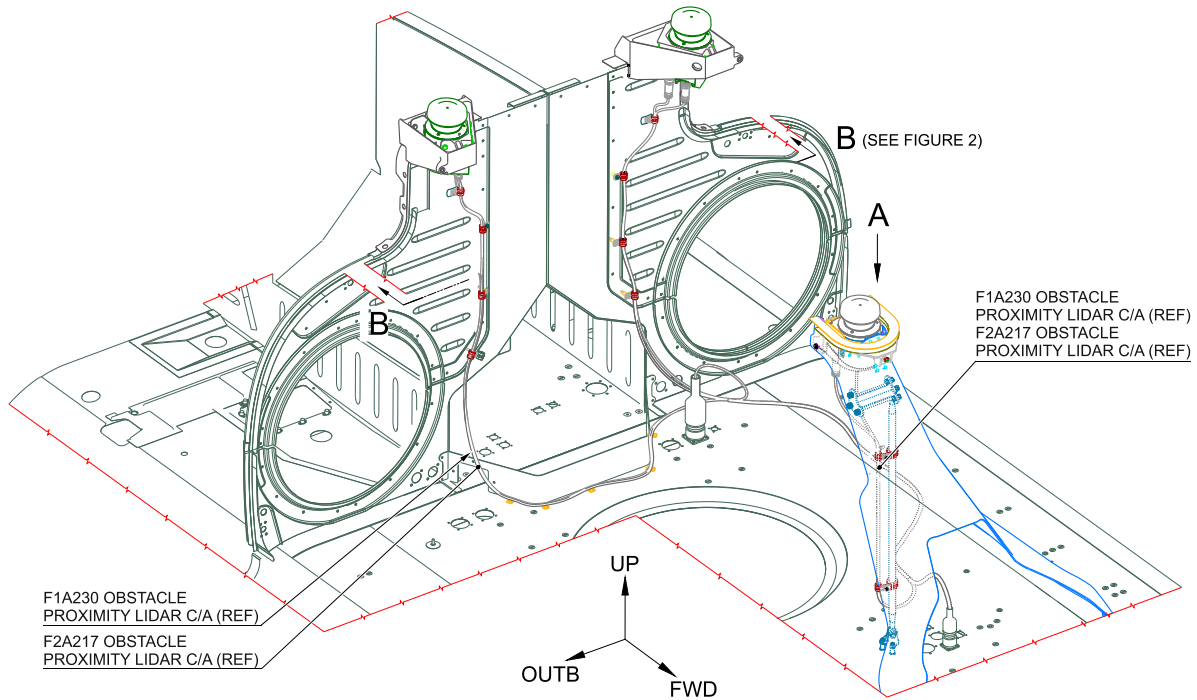
As an alternative, send the attached compliance form to the following mail box:

[engineering.support.lhd@leonardo.com](mailto:engineering.support.lhd@leonardo.com)

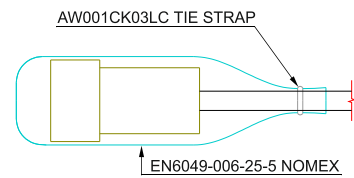
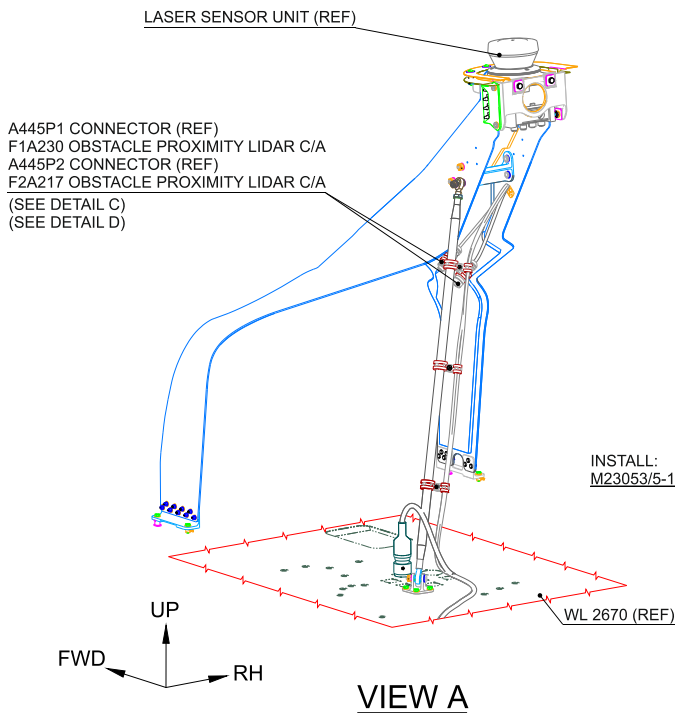
and (for North, Central and South America) also to:

[AWPC.Engineering.Support@leonardocompany.us](mailto:AWPC.Engineering.Support@leonardocompany.us)

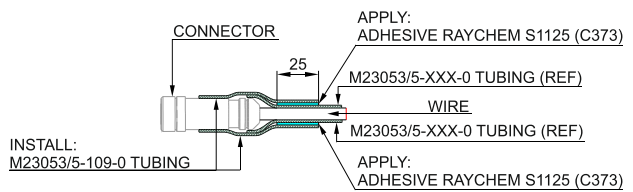




**VIEW LOOKING REAR UPPERDECK**  
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

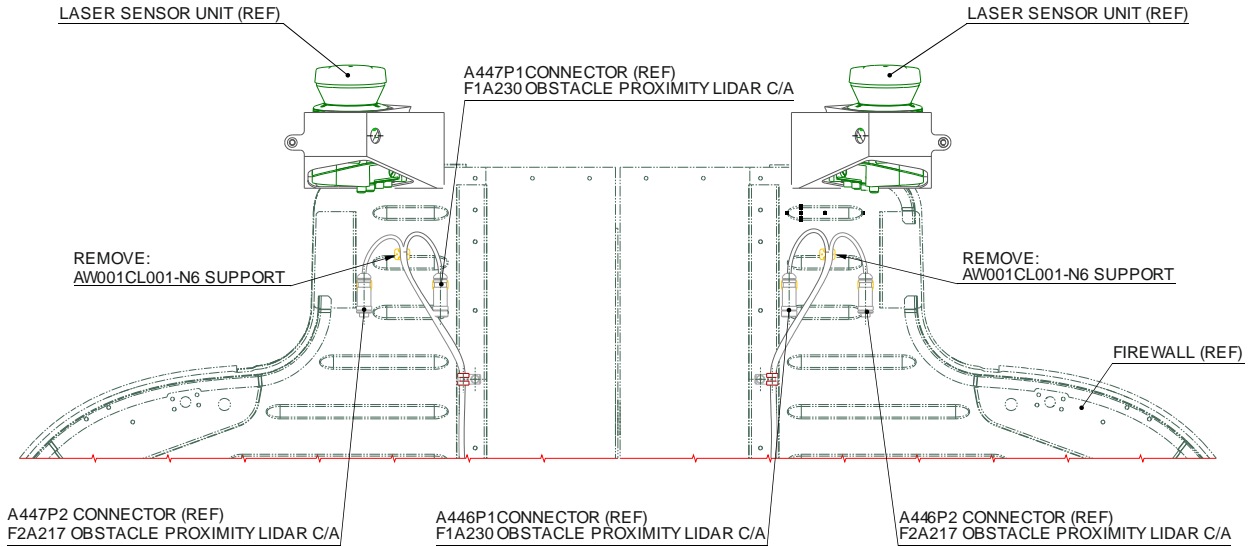


**DETAIL C**  
(REFER TO VIEW G AND TO FIGURE 2)



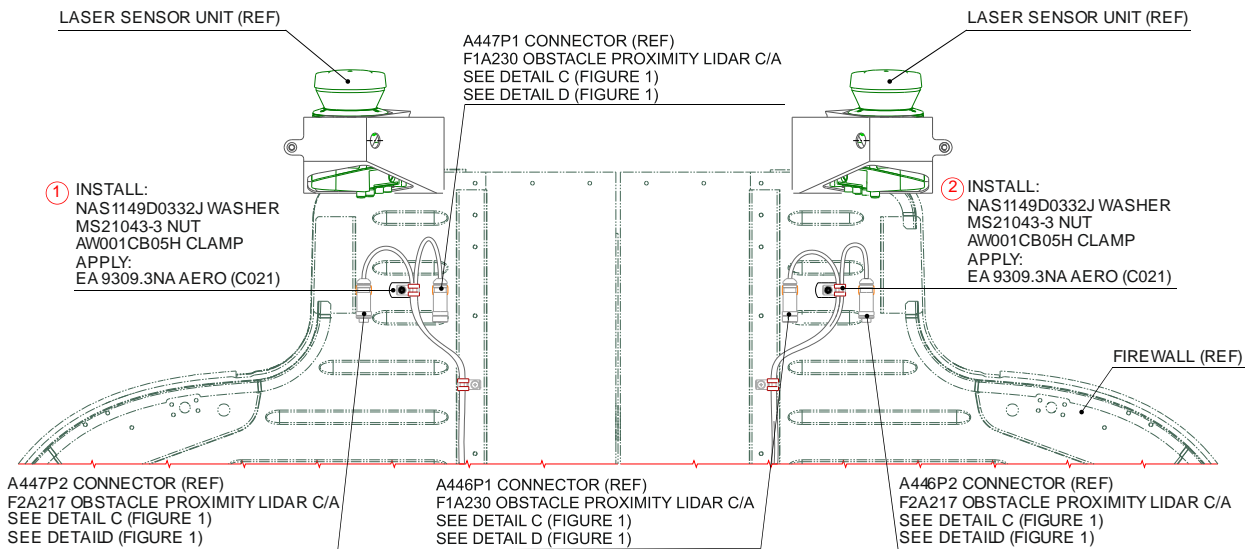
**DETAIL D**  
(REFER TO VIEW G AND TO FIGURE 2)

**Figure 1**



### VIEW B-B (WAS)

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE (REFER TO FIGURE 1)



### VIEW B-B (BECOMES)

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE (REFER TO FIGURE 1)

INSTALL THE STUDS REPORTED IN TABLE BELOW:

LOCATION NUMBER	P/N	STA	BL	WL	ORIENTATION
①	A366A3E10C75	5747	283	3456	90°
②	A366A3E10C75	5747	-275	3456	90°

Figure 2

S.B. N°139-704 RECOMMENDED  
DATE: March 21, 2024  
REVISION: /

Please send to the following address:  <b>LEONARDO S.p.A.</b> <b>CUSTOMER SUPPORT &amp; SERVICES - ITALY</b>  <b>PRODUCT SUPPORT ENGINEERING &amp; LICENSES DEPT.</b> Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988	<b>SERVICE BULLETIN COMPLIANCE FORM</b>	Date:
Number:		
Revision:		

Customer Name and Address:	Telephone:
	Fax:
	B.T. Compliance Date:

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.

Remarks:

**Information:**

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.