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**SERVICE BULLETIN****N° 139-495****DATE:** October 17, 2018**REV. :** B - May 5, 2023

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**TITLE****ATA 31 - FDR AND RIPS VARIANT ULB REPLACEMENT****REVISION LOG**

Helicopters already compliant with first issue of this SB must have the Chart A updated as per instruction enclosed in the "Weight and Balance" Section of the current revision A.

Revision A is issued to update Annex A with the Issue 5 of Penny & Giles SB D51615-31-19.

Revision B is issued to update Annex B with the Issue 2 of Penny & Giles SB D51615-31-29.

Revision bars identify changes.

## **1. PLANNING INFORMATION**

### **A. EFFECTIVITY**

All AB139/AW139 helicopters equipped with the MPFR P/N D51615-142, part of FDR and RIPS variant P/N 3G3106P01311, P/N 3G3106P01312, P/N 3G3106P01313, P/N 3G3106P01314.

### **B. COMPLIANCE**

At Customer's option.

### **C. CONCURRENT REQUIREMENTS**

N.A.

### **D. REASON**

This Service Bulletin is issued in order to allow the installation of the new 90-day ULB P/N 220000084.

### **E. DESCRIPTION**

This Service Bulletin provides all necessary instructions to replace the 30-day ULB P/N 220000040 with the new 90-day ULB P/N 220000084 in accordance with the Penny & Giles Aerospace Limited Service Bulletin SB D51615-31-19 enclosed as Annex A of this document.

For new helicopters the same process is described in accordance with the Penny & Giles Aerospace Limited Service Bulletin SB D51615-31-29 enclosed as Annex B of this document.

The new 90-day beacon is approximately 25 mm (1 inch) longer in length than the 30-day beacon currently in use. As a result, the mounting brackets which secure the beacon to the MPFR have been re-designed and the beacon mounting arrangement has been rotated by 90 degrees to fit the existing size envelope of the recorder unit and beacon combined.

To accommodate the new beacon mounting arrangement, Penny & Giles Aerospace Limited has amended the design of the rear mounting feet of the recorder to aircraft structure as follows:

- The two existing mounting feet attached to the recorder outer casing have been replaced by two (handed) foot fittings attached to the recorder rear casing using the existing screw locations.

- The recorder is secured to the aircraft structure with a retention plate which is mounted on the aircraft structure and secured to the two new foot fittings on the rear of the recorder by two cap-head screws.

After ULB replacement, the MPFR P/N D51615-142 is re-identified as P/N D51615-142-090.

## 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 four (4) MMH are deemed necessary.

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

## H. WEIGHT AND BALANCE

### NOTE

The following table is also applied for Helicopters with compliant Rev / of this SB which must have the Chart A updated.

WEIGHT (kg)	ARM (mm)	MOMENT (kgmm)
		0.550
<b>LONGITUDINAL BALANCE</b>	8996.5	4948.075
<b>LATERAL BALANCE</b>	0	0

## I. REFERENCES

### 1) PUBLICATIONS

<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 door panel remove procedure.	-
DM03 39-B-31-31-02-00A-520A-K	Multi-purpose flight recorder - Remove procedure	-
DM04 39-B-31-31-07-00A-520A-K	Underwater locator beacon - Remove procedure	-
DM05 39-B-31-31-02-00A-720A-K	Multi-purpose flight recorder – Install procedure	-
DM06 39-B-31-31-07-01A-340A-K	Underwater locator beacon - Function test	-
DM07 39-B-31-31-00-00A-340A-K	Flight data recorder system - Multi-purpose flight recorder - Function test	-

### 2) ACRONYMS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
DM	Data Module
FDR	Flight Data Recorder
IPD	Illustrated Parts Data
ITEP	Illustrated Tools and Equipment Publication
MMH	Maintenance Man-Hours
MPFR	Multi-Purpose Flight Recorder
RIPS	Recorder Independent Power Supply
ULB	Underwater Locator Beacon

### 3) ANNEX

Annex A	Penny & Giles Aerospace Limited Service Bulletin SB D51615-31-19 issue 5.
Annex B	Penny & Giles Aerospace Limited Service Bulletin SB D51615-31-29 issue 2.

## J. PUBLICATIONS AFFECTED

N.A.

## K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

## 2. MATERIAL INFORMATION

### A. REQUIRED MATERIALS

#### 1) PARTS

**NOTE**

Customers supplied with Kit P/N Kit 112470 can still apply this SB (refer to note in Annex A, Section 3, Paragraph 1).

**NOTE**

Annex A is applicable to P/N D51615-142; the following Issues of SB D51615-31-19 are no longer applicable to this P/N.

**NOTE**

P/N 112470, P/N 112813 and P/N 112814 in Annex A are accepted also as P/N KIT112470 and P/N SA112470, P/N KIT112813 and P/N SA112813, P/N KIT112814 and P/N SA112814.

**NOTE**

P/N 112813 in Annex B is accepted also as P/N KIT112813 and P/N SA112813.

Refer to Penny & Giles Aerospace Limited Service Bulletin SB D51615-31-19 issue 5 in Annex A.

Refer to Penny & Giles Aerospace Limited Service Bulletin SB D51615-31-29 issue 2 in Annex B.

#### 2) CONSUMABLES

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

#	Spec./LHD code number	DESCRIPTION	Q.TY	NOTE	PART
1	ASTM-D-5363 cod.900004956)	Adhesive Loctite 222 (C029)	AR	(1)	-

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

### **3) LOGISTIC MATRIX**

N.A.

#### **NOTE**

(1) Item to procured as local supply.

### **B. SPECIAL TOOLS**

Refer to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

Refer also to SB Annexes.

### **C. INDUSTRY SUPPORT INFORMATION**

Configuration Change.

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### **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) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.
- c) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
- d) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.
- e) 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 AMP DM 39-A-06-41-00-00A-010A-A, remove the access panel 310BL.
3. In accordance with AMP DM 39-B-31-31-02-00A-520A-K, remove the MPFR P/N D51615-142.
4. In accordance with AMP DM 39-B-31-31-07-00A-520A-K, remove the ULB P/N 220000040 from the MPFR.
5. In accordance with Penny & Giles Aerospace Limited Service Bulletin SB D51615-31-19 in Annex A or SB D51615-31-29 in Annex B, install the 90-day ULB P/N 220000084 on the MPFR.
6. In accordance with Annex A or Annex B, re-identify the MPFR P/N D51615-142 as P/N D51615-142-090.
7. In accordance with AMP DM 39-B-31-31-02-00A-720A-K, install the MPFR P/N D51615-142-090.
8. In accordance with AMP DM 39-B-31-31-07-01A-340A-K perform the function test of the ULB.
9. In accordance with AMP DM 39-B-31-31-00-00A-340A-K perform the function test of the



flight data recorder system MPFR.

10. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, install the access panel 310BL.
11. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
12. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
13. 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)

# ANNEX A

**SB D51615-31-19 ISSUE 5 (20 MAY 2019)**  
**REPLACEMENT OF UNDERWATER LOCATION BEACON (90-DAY)**  
**KIT PART NUMBERS 112470, 112813 OR 112814**

**NOTE**

Subsequent Issues of SB D51615-31-19 are no longer  
applicable to P/N D51615-142

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## SERVICE BULLETIN

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### REPLACEMENT UNDERWATER LOCATOR BEACON (90-DAY) KIT PART NUMBERS 112470, 112813 or 112814

**CLASSIFICATION:** FOR INFORMATION ONLY

#### SECTION I: PLANNING INFORMATION

##### 1. Applicability

This Service Bulletin is applicable only to underwater locator beacons (ULB) fitted to Penny & Giles Manufactured flight data recorders detailed in the following list:

Part Number	Build Standard (and Later)
D51615-142	Issue 2 Mod 2
D51615-202-005	Issue 1 Mod 1
D51615-202-006	Issue 1 Mod 1
D51615-202-011	Issue 1
D51615-202-013	Issue 1
D51615-202-021	Issue 4 Mod 1
D51615-202-031	Issue 1 Mod 1
D51615-203-006	Issue 2 Mod 1
D51615-203-007	Issue 1 Mod 1
D51615-203-012	Issue 1 Mod 1
D51615-3411-250	Issue 1 Mod 1

**NOTE:** Units manufactured before 2013 may not suitable for this upgrade Kit and may require further upgrades of the Crash tube (subject to a full evaluation of the unit).

**NOTE:** Curtiss-Wright has no intention to obtain TSO approval for clearance to use the 90-Day ULB option in conjunction with the Types D51615-102, D51615-122 and D51615-133 Flight Data Recorders.

If you have any doubts about the suitability of your unit, please contact Curtiss-Wright (Penny & Giles Aerospace limited) for clarification.

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### 2. Reason

This Service Bulletin has been created to inform all operators using Penny & Giles Aerospace Limited Flight Data Recorders that in accordance with FAA Directive TSO C121b which came into force on the 1<sup>st</sup> March 2015, P&G are introducing a ULB which has an operational life in excess of 90 days.

### 3. General

For reference purposes, this Service Bulletin uses the beacon installation to an MPFR. The beacon location procedure will be similar for all Penny & Giles Aerospace Limited manufactured flight recorders (MPFR, EMPFR, DAFR & DIDAFR).

### 4. Existing 30-Day Beacons

With the exception of the Types stated in the note at Paragraph 1 (Applicability), Customers with existing 30-day beacons may, if they wish, have them changed to the new 90-Day beacon.

Contact Curtiss-Wright (Penny & Giles Aerospace Limited) for price and lead time information.

### 5. Beacon Description

The new 90-day beacon is approximately 1 inch (25mm) longer in length than the existing 30-day beacon currently in use. As a result, the mounting brackets which secure the beacon to the recorder have been re-designed and the beacon mounting arrangement has been rotated by 90 degrees to fit the existing size envelope of the recorder unit and beacon combined.

To accommodate the new beacon mounting arrangement, it has been necessary to amend the design of the rear mounting feet of the recorder to aircraft structure as follows:

The two existing mounting feet attached to the recorder outer casing have been replaced by two (handed) foot fittings attached to the recorder rear casing using the existing screw locations.

The recorder is secured to the aircraft structure with a retention plate which is mounted on the aircraft structure and secured to the two new foot fittings on the rear of the recorder by two cap-head screws.

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### 6. **Approval**

Issued by Penny & Giles Aerospace Limited under the terms of the Company's international Quality Approvals.

### 7. **Manpower**

Approximately one hour

### 8. **Material, Cost and Availability**

Cost of Kit - TBA

### 9. **Tooling, Price and Availability**

Not applicable

### 10. **Weight and Balance**

The 90-day beacon and bracketry will increase the weight of the Flight Recorder assembly as follows:

Approximately 3.5kg to approximately 4.0kg (EMPFR Kit 112470).

Approximately 3.25kg to approximately 3.8kg (MPFR Kit 112813).

Approximately 3.5kg to approximately 3.8kg (DAFR/DIDAFR Kit 112814).

### 11. **Electrical Load Data**

Not affected

### 12. **References**

FAA Directive TSO C121b.

P&G Component Maintenance Manual – CMM 31-34-22 (MPFR)

P&G Component Maintenance Manual – CMM 31-34-28 (EMPFR)

Dukane DK120-90-Tech-Manual- 03-TM-0063 (Rev A)

**Note:** Persons wishing to obtain further information relating to the DK120-90 ULB should refer to the Dukane User Manual listed above.

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### SECTION II: ACCOMPLISHMENT INSTRUCTIONS

#### 1. Beacon Replacement Procedure

Changes to locator beacons fitted to existing (in-service) recorders may be carried out by the customer using Kit 112470 on the provision that they have adequate facilities in order to carry out the modification.

**NOTE:** Customers wishing to change the beacon for the 90-day type will need to contact P&G to be issued with a new ULB Kit 112470, Kit 112813 or Kit 112814 (as applicable).

A photograph of the existing MPFR unit's Identification label must be supplied to P&G prior to the issue of a beacon replacement kit. This will enable us to supply the printed replacement label with the correct information (serial No. etc.).

The procedure is as follows:

#### 1.1 Beacon Removal (Refer to Figure 1)

- 1) Remove the recorder from the Aircraft.
- 2) Remove and discard the four existing mounting screws which secure the current ULB top and bottom mounting brackets.
- 3) Remove and discard the existing ULB and mounting bracket assembly.
- 4) Remove and discard the two screws and washers which secure the two mounting feet (beacon end) to the recorder external casing.

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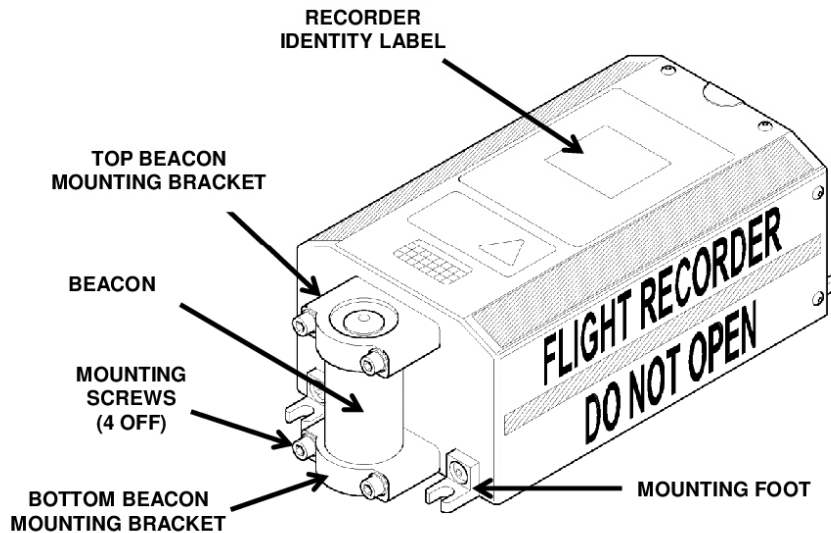


Figure 1 – Existing ULB Mounting Arrangement

### 1.2 Beacon Fitting (Refer to Figure 2)

- 1) Using screws (60), washers (50) & Pins (30) fit recorder retaining foot fittings (40) and (80).
- 2) Apply Loctite 222 (locally sourced) to the threads and torque tighten screws to 2.8-3.0Nm  
**Note:** The fittings are 'handed' so ensure that the correct location is selected before securing.
- 3) Secure the RH bracket assembly (10) to the recorder using one of the longer fixing screws (110) and washers (50) in the upper location.
- 4) Secure the RH bracket assembly to the recorder using one of the shorter fixing screws (90) and washers (50) in the lower location.  
**Note:** Apply a small amount of Loctite 222 (locally sourced) to both screws before tightening.
- 5) Decide on the orientation of the Beacon (130).

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**Note:** The 90-Day beacon may be fitted with the Water Switch end of the beacon in either left or right orientation however it is important that the sealing ring is located at the opposite end of the beacon to the water switch.

**For the purposes of this Service Bulletin the beacon has been orientated to the left.**

- 6) Fit the Silicone rubber cord (140) into the bore of the appropriate mounting bracket into which the base of the beacon (130) is to be located (see Figure 2).
- 7) Slide the beacon into the bracket firmly up against the rubber cord.
- 8) Secure LH bracket (120) to the recorder using screws (90), (110) and washers (50). See steps 3 & 4 above.

**Note:** Apply a small amount of Loctite 222 (locally sourced) to both screws before tightening.

**Note:** Ensure all beacon mounting bracket parts are correctly located before tightening the mounting bracket retaining screws (90) & (110) to 6.5-7.0Nm.

### 1.3 Identification of 90-Day Beacon

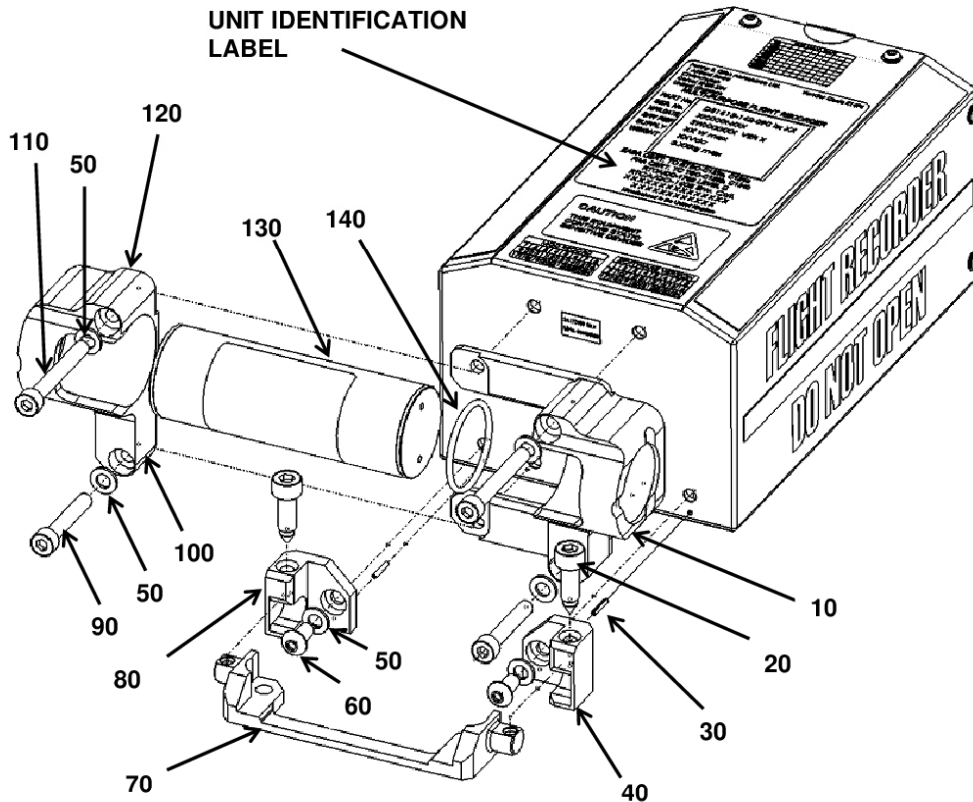
- 1) Using a sharp scalpel or craft knife, gently lift one corner of the existing IDENT Label located on the upper surface of the recorder cover. Take care not to damage the surrounding paintwork.
- 2) Remove and discard the existing IDENT Label. If necessary clean the area with a suitable solvent (e.g. Electro-lube LRM Label Remover).
- 3) Carefully apply the new IDENT Label and ensure it is securely fitted.

### 1.4 Fitting the modified MPFR to the aircraft

- 1) Fit the retention plate (70) to the aircraft structure using two cap-head screws (6.35mm Dia.) and washers (locally sourced).
- 2) Locate the foot retention fittings (40) and (80) into the retention plate (70).
- 3) Apply a small amount of Loctite 222 (locally sourced) to the threads of the screws (20).
- 4) Secure assembly with the two cap head screws.
- 5) Torque tighten to 5.0-5.5Nm
- 6) Secure the existing recorder foot fittings (opposite end to the beacon) to the aircraft structure, (fasteners not supplied).



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**Figure 2 – 90-Day Beacon Mounting Arrangement**

### 2. Marking

Recorders modified with a 90-Day beacon will be identified by the Part Number (D51615-XXX-090) indicated on the unit Identification label located on the top cover of the recorder Unit.

Customers modifying the recorder with the new 90-Day beacon will have replaced the IDENT Label as part of the procedure.

### 3. Testing

Test in accordance with the procedures detailed in CMM 31-34-22 or CMM 31-34-28.

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## SERVICE BULLETIN

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### SECTION 3: MATERIAL INFORMATION

#### 1. Materials Required

##### 90-Day ULB KIT Type:

KIT P/N 112470: for use with EMPFR Type D51615-3411-250 units.

KIT P/N 112813: for use with MPFR Type D51615-142 units

KIT P/N 112814: for use with DAFR Type D51615-202 & DIDAFR Type D51615-203 units.


Ensure that you are ordering the correct KIT for your recorder type. Refer to the following KIT details.

**NOTE: The three types of Kit are similar with the exception of the screws used to secure the Retaining Feet P/N 112298 and 112305 to the rear face of the MPFR unit.**

**Customers supplied with Kit 112470 may use the screws P/N 435890001 in place of screws listed in the Kit details below.**

## SERVICE BULLETIN

### Kit P/N 112470 (EMPFR Type D51615-3411-250)

Part Number	Description	Qty	Image	
SA112457	Beacon Bracket Assy LH	1		
	Comprising:			
	Bracket LH	P112281		1
	Connecting Plate	P112454		1
	Connecting Plate	P112456		1
	Screw, Pozi-Drive	435845026	2	
P112282	Beacon Bracket RH	1		
P112297	Retention Plate	1		
P112298	Retention Foot RH (Beacon end of Recorder Unit)	1		
P112304	Retention Screw	2		

## SERVICE BULLETIN

Part Number	Description	Qty	Image
P112305	Retention Foot LH (Beacon end of Recorder Unit)	1	
22000084	DK120/90 Dukane ULB	1	
250208135	Roll Pin 1.5mm Dia x 10mm Long	2	
230180180	0.070mm Section Fluorosilicone	100mm	
435890000	Screw M5 x 10mm ST ST BTN HD (to secure Retention Feet P112298 & P112305 to Recorder Unit)	2	
680150161	Washer M5 Plain	6	
W107841/0530	Screw M5 x 30mm HI-TENS STL SKT CAP HD	2	
W107841/0540	Screw M5 x 40mm HI-TENS STL SKT CAP HD	2	
TBA	Main Identification Label (customers must supply details of existing Ident. Label i.e. Unit Serial No. Date of Manufacture etc.)	1	
Total weight of 90-Day ULB assembly		510.6g (= increase in weight of 261.8g)	
Overall weight increase (EMPF) from 3.5kg			4.0kg

## SERVICE BULLETIN

### Kit P/N 112813 (MPFR Type D51615-142)


Part Number	Description	Qty	Image	
SA112457	Beacon Bracket Assy LH	1		
	Comprising:			
	Bracket LH	P112281		1
	Connecting Plate	P112454		1
	Connecting Plate	P112456		1
	Screw, Pozi-Drive	435845026	2	
P112282	Beacon Bracket RH	1		
P112297	Retention Plate	1		
P112298	Retention Foot RH (Beacon end of Recorder Unit)	1		
P112304	Retention Screw	2		

## SERVICE BULLETIN

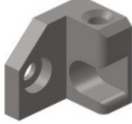

Part Number	Description	Qty	Image
P112305	Retention Foot LH (Beacon end of Recorder Unit)	1	
220000084	DK120/90 Dukane ULB	1	
250208135	Roll Pin 1.5mm Dia x 10mm Long	2	
230180180	0.070mm Section Fluorosilicone	100mm	
W107842/0512	Screw M5 x 12mm HI-TENS STL (to secure Retention Feet P112298 & P112305 to Recorder Unit)	2	
680150161	Washer M5 Plain	6	
W107841/0530	Screw M5 x 30mm HI-TENS STL SKT CAP HD	2	
W107841/0540	Screw M5 x 40mm HI-TENS STL SKT CAP HD	2	
TBA	Main Identification Label (customers must supply details of existing Ident. Label i.e. Unit Serial No. Date of Manufacture etc.)	1	
Total weight of 90-Day ULB assembly		510.6g (= increase in weight of 261.8g)	
Overall weight increase (MPFR) from 3.25kg			3.8kg

## SERVICE BULLETIN

**Kit P/N 112814 (DAFR Type D51615-202 & DIDAFR Type D51615-203)**

Part Number	Description	Qty	Image	
<b>SA112457</b>	Beacon Bracket Assy LH	1		
	Comprising:			
	Bracket LH	P112281		1
	Connecting Plate	P112454		1
	Connecting Plate	P112456		1
	Screw, Pozi-Drive	435845026	2	
<b>P112282</b>	Beacon Bracket RH	1		
<b>P112297</b>	Retention Plate	1		
<b>P112298</b>	Retention Foot RH (Beacon end of Recorder Unit)	1		
<b>P112304</b>	Retention Screw	2		

## SERVICE BULLETIN

Part Number	Description	Qty	Image
P112305	Retention Foot LH (Beacon end of Recorder Unit)	1	
22000084	DK120/90 Dukane ULB	1	
250208135	Roll Pin 1.5mm Dia x 10mm Long	2	
230180180	0.070mm Section Fluorosilicone	100mm	
435890009	Screw M5 x 10mm TORX ST ST (to secure Retention Feet P112298 & P112305 to Recorder Unit)	2	
680150161	Washer M5 Plain	6	
W107841/0530	Screw M5 x 30mm HI-TENS STL SKT CAP HD	2	
W107841/0540	Screw M5 x 40mm HI-TENS STL SKT CAP HD	2	
TBA	Main Identification Label (customers must supply details of existing Ident. Label i.e. Unit Serial No. Date of Manufacture etc.)	1	
Total weight of 90-Day ULB assembly		510.6g (= increase in weight of 261.8g)	
Overall weight increase (DAFR & DIDAFR) from 3.5kg		3.8kg	



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### 2. Materials Removed

Part Number	Description	Quantity
220000040	Beacon – 30-Day	1
P110318	Beacon Mounting Bracket - Top	1
P109552	Beacon Mounting Bracket - Bottom	1
435890007	Screw, Cap Head, SKT, SS	4
680150161	Washer, M5, SS	4
230180180	0.070mm Section Fluorosilicone	1
P109302	MPFR Mounting foot	2
435890001	Screw, M5, Button Head	2
680150161	Washer, M5, SS	2
A/R	Unit Identification Label	1

### SECTION 4: CONTACT INFORMATION

For further information in relation to this modification, please contact the following:

Email: [CS\\_Technical\\_Services@curtisswright.com](mailto:CS_Technical_Services@curtisswright.com)

Telephone: +44. 1202.481771

Fax: +44.1202.484846

# **ANNEX B**

**SB D51615-31-29 ISSUE 2 (10 DEC 2019)**  
**REPLACEMENT UNDERWATER LOCATOR BEACON (90-DAY)**  
**DIMPFR UPGRADE KIT PART NUMBER 112813**

## SERVICE BULLETIN

### INDICATING/RECORDING SYSTEMS

#### DUAL INPUT MULTI-PURPOSE FLIGHT RECORDER (DIMPFR) TYPE D51615-142

#### REPLACEMENT UNDERWATER LOCATOR BEACON (90-DAY) UPGRADE KIT P/N KIT112813

**DOCUMENT No.:** SB D51615-31-29  
**DATE OF ISSUE:** 5<sup>th</sup> February 2020  
**REVISION:** Revision 2  
**DATE OF REVISION:** 17<sup>th</sup> November 2021  
**CLASSIFICATION:** INFORMATION

**NOTE:**

Before performing any of the tasks defined by this Service Bulletin, please ensure that you are using the latest (current) version of this document. Check the revision/issue status by accessing the following link:

<https://www.curtisswrightds.com/support/technical/christchurch.html>

You will be able to view the Technical Publications Registers and, if necessary, request a copy of the current revision/issue.

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UK	Not Listed	17 Nov 2021	≠ N

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## SERVICE BULLETIN

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### SECTION 1: PLANNING INFORMATION

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#### 1.1 Effectivity

This Service Bulletin is only applicable to the following Product Types:

Part Number	Build Standard (and Later)
D51615-142	Issue 1 MOD 0

#### **NOTE:**

**Units manufactured before 2013 may not be suitable for this upgrade and may require further upgrades of the Crash tube (subject to a full evaluation of the unit).**

#### 1.2 Concurrent Requirements

None.

#### 1.3 Reason

This Service Bulletin has been created to inform all operators using Penny & Giles Aerospace Limited Dual Input Multi-Purpose Flight Recorder (DIMPFR) Type D51615-142 that, in accordance with FAA Directive TSO C121b which came into force on the 1st March 2015, P&G are introducing an Underwater Locator Beacon (ULB) which has an operational life in excess of 90 days.

##### 1.3.1 General

This Service Bulletin details the ULB installation fitted to a DIMPFR Type D51615-142.

##### 1.3.2 Existing 30-Day Beacons

Customers with existing 30-day ULB's fitted to their recorders with types listed in Para. 1.1 may upgrade their units to fit the 90-Day ULB Upgrade Kit P/N KIT112813.

Contact Curtiss-Wright (Penny & Giles Aerospace Limited) Customer Services team ([CSAerospace@curtisswright.com](mailto:CSAerospace@curtisswright.com)) for price and lead time information.

#### 1.4 Description

To resolve transportation issues relating to the Lithium content of Type DK120/90 ULBs, Penny & Giles (Curtiss-Wright) have introduced the Type DK290-11 ULB. The dimensions of both ULB types are identical, therefore, the installation procedure detailed in this Service Bulletin is applicable to both types of ULB.

The new 90-day ULB is approximately 1 inch (25mm) longer than the existing 30-day ULB currently in use. As a result, the mounting brackets which secure the ULB to the recorder have

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been re-designed and the ULB mounting arrangement has been rotated by 90 degrees to fit the existing size envelope of the recorder unit and ULB combined.

To accommodate the new ULB mounting arrangement, it has been necessary to amend the design of the rear mounting feet of the recorder to aircraft structure as follows:

- The two existing mounting feet attached to the recorder outer casing have been replaced by two (handed) foot fittings attached to the recorder rear casing using the existing screw locations.
- The recorder is secured to the aircraft structure with a retention plate which is mounted on the aircraft structure and secured to the two new foot fittings on the rear of the recorder by two cap-head screws.

### 1.5 Compliance Recommendation

This Service Bulletin may be accomplished at the next suitable planned maintenance period.

### 1.6 Approval

This Service Bulletin has been issued by Penny & Giles Aerospace Limited (an agent of Curtiss-Wright Controls (UK) Limited) under the terms of the Company's international Quality Approvals.

### 1.7 Manpower

Approximately two hours.

### 1.8 Weight and Balance

The 90-day ULB Upgrade Kit P/N KIT112813 will increase the weight of the Flight Recorder assembly from approximately 3.25kg to approximately 3.8kg (maximum).

### 1.9 Electrical Load

Not changed.

### 1.10 Software Accomplishment Summary

Not applicable.

### 1.11 References

FAA Directive TSO C121b

Penny & Giles Aerospace (P&G) Installation & Operating Manual PIM 448-I, Dated: Feb. 2021

Dukane Seacom Technical Manual 03-TM-0063 (Revision A) for the Type DK120/90 ULB

Dukane Seacom Technical Manual 03-TM-0090 (Revision A) for the Type DK290-11 ULB

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**NOTE:**

Persons wishing to obtain further information relating to the Dukane ULB's Type DK120/90 or DK290-11 should contact Curtiss-Wright (Penny & Giles Aerospace Ltd.) for a copy of the relevant document.

**1.12 Other Publications Affected**

None.

**1.13 Interchangeability or Interminability of Parts**

Not Applicable.


## SECTION 2: MATERIAL INFORMATION

**2.1 Material, Price and Availability**

90-Day ULB Upgrade Kit p/n: KIT112813 is required to accomplish this Service Bulletin (see Table 1).

Price and availability of the Upgrade Kit are available on request.

**Table 1 Components of 90-Day ULB Upgrade Kit p/n: KIT112813**

Part No.	Description	Qty	Image
SA112457	Beacon Bracket Assy LH	1	
	Comprising:		
	Bracket LH p/n: P112281	1	
	Connecting Plate p/n: P1 12454	1	
	Connecting Plate p/n: P1 12456	1	
	Screw, Pozi-Drive p/n: 435845026	2	

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<i>Part No.</i>	<i>Description</i>	<i>Qty</i>	<i>Image</i>
P112282	Beacon Bracket RH	1	
P112297	Retention Plate	1	
P112298	Retention Foot RH (ULB end of Recorder Unit)	1	
P112304	Retention Screw. Torque tighten to between 4.5 – 5.0Nm	2	
P112305	Retention Foot LH (ULB end of Recorder Unit)	1	

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Part No.	Description	Qty	Image
220000084	Dukane ULB Type DK120/90	1	
220000102	Dukane ULB Type DK 290-11 (Alternative to the DK120/90)	1	
250208135	Roll Pin 1.5mm Dia x 10mm Long	2	
230180180	0.070mm Section Fluorosilicone	100mm	
W107842 /0512	Screw M5 x 12mm BTN HD HI-TENS STL (to secure Retention Feet P112298 & P112305 to Recorder Unit). Torque tighten to between 3.9 – 4.3Nm	2	
680150161	Washer M5 Plain	6	
W107841 /0530	Screw M5 x 30mm HI-TENS STL SKT CAP HD. Torque tighten to between 6.5 – 7.0Nm	2	
W107841 /0540	Screw M5 x 40mm HI-TENS STL SKT CAP HD. Torque tighten to between 6.5 – 7.0Nm	2	
W107350	Modification Label	1	

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<i>Part No.</i>	<i>Description</i>	<i>Qty</i>	<i>Image</i>
P112437	Main Identification Label (customer must supply details of existing Ident. Label i.e. Unit Serial No. Date of Manufacture etc.)	1	
Total weight of 90-Day ULB assembly = 510.6g (increase in weight of 261.8g)			
Overall weight increase (DIMPFR) from 3.25kg to 3.8kg Max.			

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### 2.1.1 Materials to be Removed

The items which need to be removed/discarded are as detailed in *Table 2* below:

**Table 2 Materials to be Removed**

<i>Part Number</i>	<i>Description</i>	<i>Quantity</i>
<b>220000040</b>	Underwater Locator Beacon – 30-Day	1
<b>P110318</b>	Beacon Mounting Bracket - Top	1
<b>P109552</b>	Beacon Mounting Bracket - Bottom	1
<b>W107841/0545</b>	Screw, M5 x 45mm, Cap Head, HI TENS STL	4
<b>W107842/0512</b>	Screw, M5x12, Button Head, HI TENS STL	2
<b>680150161</b>	Washer, M5, ST STL	6
<b>230180180</b>	0.070mm Section Fluorosilicone	1
<b>P109302</b>	Mounting Foot	2
<b>250208135</b>	Roll Pin 1.5mm Diam. 10mm Long	2
<b>A/R</b>	Unit Main Identification Label	1
<b>W107350</b>	MOD Record Label	1
<b>P110280</b>	Software Version Label	1

### 2.2 Industry Support Information

All new Type D51615-142-090 DIMPFR units will have a 90-Day ULB fitted during manufacture.

### 2.3 Material Necessary for Each Component

Available on request.

### 2.4 Tooling, Price and Availability

Available on request.

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### SECTION 3: ACCOMPLISHMENT INSTRUCTIONS

#### 3.1 Equipment Required

Table 3 details the equipment required to accomplish this Service Bulletin.

**Table 3 Equipment Required**

<i>Item</i>	<i>Equipment</i>	<i>Manufacturer</i>	<i>Part Number</i>
1	90-Day ULB upgrade	P&G	KIT112813
2	Manual Pin Inserter Press	Spirol	Model PM
3	Pin Driving Chuck	Spirol	CXD
4	Fixture	Spirol	
5	Pliers – Needle Nosed	CFE	CFE
6	Hammer	CFE	CFE
7	Scalpel or Craft Knife	CFE	CFE
8	Cleaning Fluid	LRM Label Remover	CFE
9	Loctite 222	CFE	CFE

#### 3.2 Accomplishment Procedure

Changes to ULB's fitted to existing (in-service) recorders may be performed by the customer on the provision that they have adequate facilities in order to carry out the modification.

**NOTE:**

**A photograph of the existing DIMPFR unit's Identification label must be supplied to P&G prior to the issue of the 90-Day ULB Upgrade Kit. This will enable us to supply the printed replacement label with the correct information (serial No. etc.).**

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### 3.2.1 Removal of the Existing ULB

**NOTE:**

Refer to *Figure 1*.

- (1) Remove and retain the four screws and washers which secure the recorder to the aircraft structure
- (2) Remove the recorder from the Aircraft
- (3) Remove and discard the four existing mounting screws (P/N W107841/0545) which secure the current ULB top and bottom mounting brackets
- (4) Remove and discard the existing ULB and mounting bracket assembly
- (5) Remove and discard the two screws and washers (P/N W107842/0512 & 680150161) which secure the two mounting foot assemblies (P/N P109302 with inserted Roll Pin P/N 250208135) to the recorder external casing (ULB end)
- (6) Remove and discard the two mounting foot assemblies
- (7) Using a scalpel or craft knife (*Table 3, Item 7*), gently lift one corner of the following labels:
  - Main Identification Label (this will be replaced by a new Ident. label as part of the ULB kit supplied)
  - MOD Record Label (A new MOD Record Label is provided as part of KIT112813)
  - Software Version Label (software version will be included in the new Main Identification label)

**NOTE:**

**Take care not to damage the paintwork.**

- (8) Carefully remove the labels from the Front Cover of the Recorder unit
- (9) Remove any adhesive residue using cleaning fluid (*Table 3, Item 8*)

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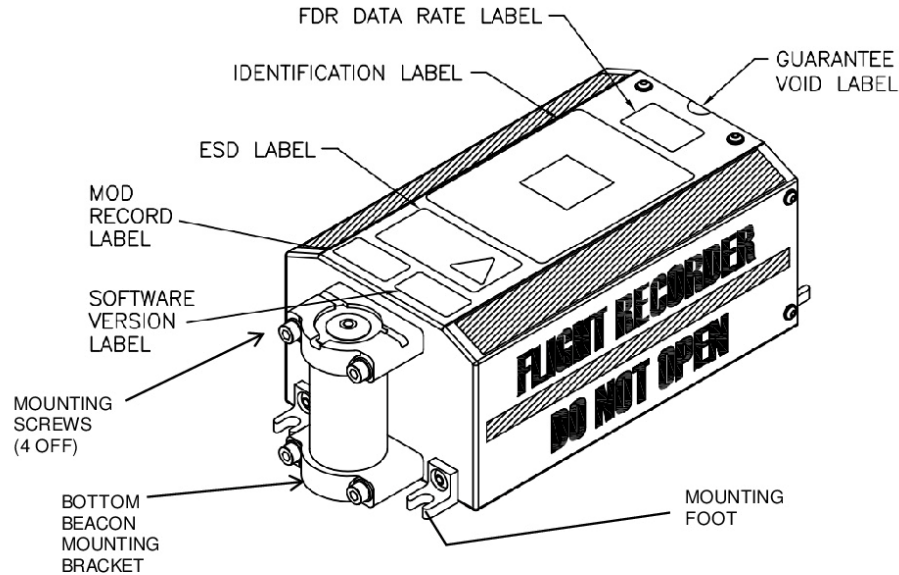


Figure 1 Existing 30-Day ULB Mounting and Label Arrangement

### 3.2.2 Fitting the Roll Pins to the Retaining Feet

**NOTE:**

Refer to Figure 2.

- (1) **Option One (Preferred):** Using a *Pin Press* and a *Pin-Driving Chuck*, place the Retaining Foot (40) face down onto the fixture, and insert a new Roll Pin (30) into the *Pin Driving Chuck*. Locate the pin with the hole in the rear face of the Retaining Foot (40), press the Roll Pin into the Retaining Foot Fixture
- (2) Repeat the above procedure for the Retaining Foot (80) and Roll Pin (30)
- (3) **Alternative to Option One:** Place the Retaining Feet (40 & 80) face down on the workbench. Using a pair of needle-nosed pliers and a suitable hammer, gently tap the new Roll Pins (30) into the locating holes on the rear face of the Retaining Feet

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### 3.2.3 Fitting the 90-Day ULB Upgrade Kit p/n: KIT112813

**NOTE:**

Refer to Figure 2.

- (1) Using screws (60) and washers (50), fit Retaining Feet & Roll Pin assemblies into position on the rear face of the Recorder unit
- (2) Apply Loctite 222 to the threads and torque tighten screws to 3.9 - 4.3Nm

**NOTE:**

The fittings are 'handed' so ensure that the correct location is selected before securing.

- (3) Secure the RH bracket assembly (10) to the recorder using one of the longer fixing screws (110) and washers (50) in the upper location
- (4) Secure the RH bracket assembly to the recorder using one of the shorter fixing screws (90) and washers (50) in the lower location

**NOTE:**

Apply a small amount of Loctite 222 to both screws before tightening.

- (5) Decide on the orientation of the ULB (130)

**NOTE:**

The 90-Day ULB Types DK120/90 and DK290-11 are identical in dimension, so the fitting of either type is the same. If installing the Type DK120/90, the ULB may be fitted with the Water Switch end of the beacon in either left or right orientation, however, it is important that the fluorosilicone seal is located at the opposite end of the beacon to the water switch.

Ensure that the ULB is positioned such that the Battery Replacement date is clearly visible on the identification label.

- (6) Fit the fluorosilicone seal (140) into the bore of the appropriate mounting bracket into which the base of the beacon (130) is to be located (refer to Figure 2)
- (7) Slide the ULB into the bracket firmly up against the seal
- (8) Secure LH bracket (120) to the recorder using screws (90), (110) and washers (50). See steps 3 & 4 above

**NOTE:**

Apply a small amount of Loctite 222 to both screws before tightening.

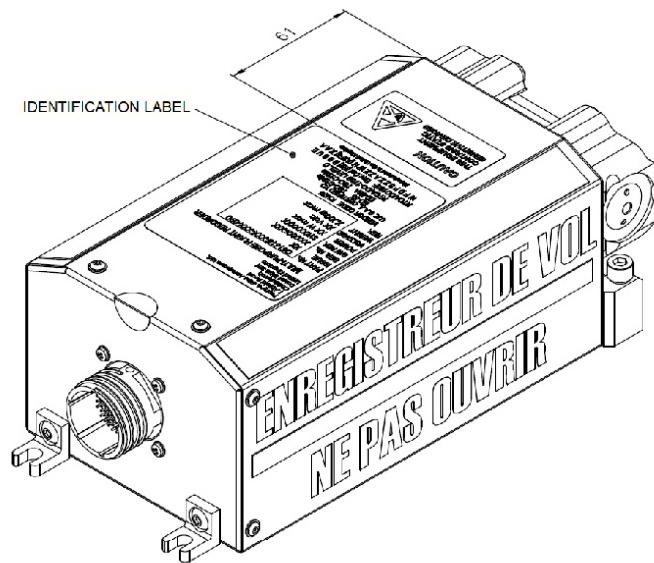
Ensure all ULB mounting bracket parts are correctly located before tightening the beacon bracket retaining screws (90) & (110) to between 6.5 and 7.0Nm.

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### 3.2.4 Identification of Recorder with 90-Day ULB Fitted

Carefully apply the new identification label (supplied as part of the 90-Day ULB Upgrade Kit) to the top surface of the Main Cover centrally, approximately 61 mm from the bottom edge of the Main Cover (see *Figure 2*). Ensure the identification label is securely fitted.

Carefully apply the Modification label centrally below the ESD label, approximately 5mm from the bottom edge and 43mm from the side face of the Main Cover (see *Figure 3*).



**Figure 2 Identification Label Placement**

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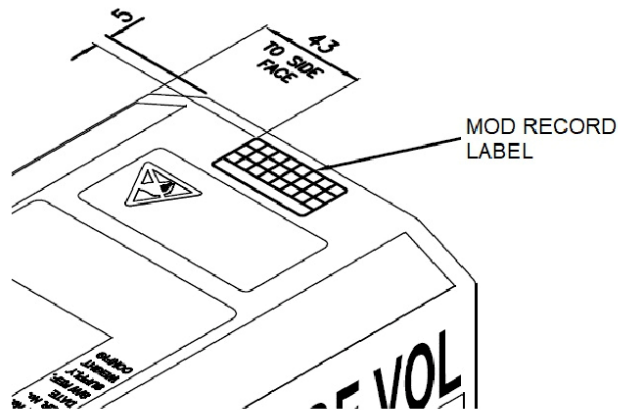


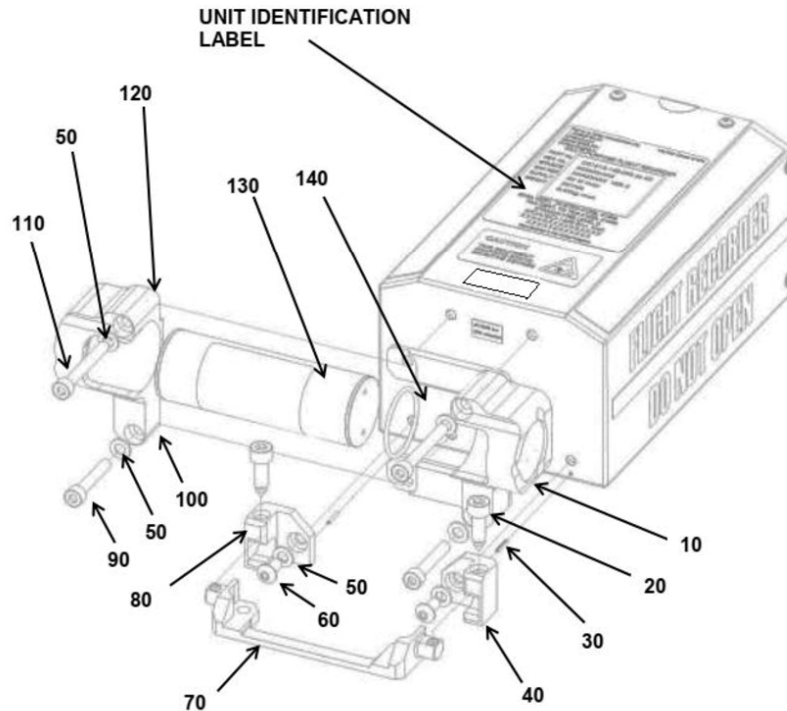
Figure 3 MOD Record Label Placement

### 3.2.5 Fitting the Modified Flight Recorder to the Aircraft

- (1) Fit the retention plate (70) to the aircraft structure using two of the cap-head screws (6.35mm Dia.) and washers removed in *Section 3.2.1, Step (1)*
- (2) Locate the foot retention fittings (40) and (80) into the retention plate (70)
- (3) Apply a small amount of Loctite 222 to the threads of the screws (20)
- (4) Secure the Retention assembly with the two screws (20) and torque tighten the screws to between 4.5 and 5.0Nm
- (5) Secure the two existing recorder foot fittings to the aircraft structure using the remaining two cap head screws and washers removed in *Section 3.2.1, Step (1)*



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**Figure 4 90-Day ULB Mounting Arrangement**

### 3.3 Marking

Recorders modified with a 90-Day ULB will be identified by the Part Number suffix "-090" (e. g. D51615-142-090) indicated on the unit identification label located on the top cover of the recorder Unit.

Units upgraded from D51615-142 Issue 2 MOD 0 Build Standard (or earlier) will require a strike through of MOD 10 on the MOD Record Label to indicate this upgrade.

Customers modifying the recorder with the new 90-Day ULB will have replaced the identification label as part of the procedure.

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### SECTION 4: CONTACT INFORMATION

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For further information in relation to this Service Bulletin, please contact the following:

**Customer Support (Technical Services)**

Penny & Giles Aerospace Limited  
Curtiss-Wright  
15 Enterprise Way,  
Aviation Park West,  
Bournemouth International Airport,  
Christchurch,  
Dorset, BH23 6HH  
United Kingdom

Telephone: +44.1202.034000

Email: [CS\\_Technical\\_Services@curtisswright.com](mailto:CS_Technical_Services@curtisswright.com)

Please send to the following address:		<b>SERVICE BULLETIN COMPLIANCE FORM</b>		Date:
<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		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.				