DE HAVILLAND AIRCRAFT OF CANADA LIMITED

**DHC–8 (DASH 8)**

**SERVICE BULLETIN 84–26–20**

**Fire Protection – Fire Detection System – Nacelle Fire Detection System – Main Landing Gear (MLG) Primary Zone – Advanced Pneumatic Detectors (APD) – Special Inspection and Rectification – ModSum 4–114036**

This page transmits Revision 'A' of Service Bulletin 84–26–20, pages 1 thru 14, dated 09 Mar 2021.

This service bulletin is re–issued in its entirety for the reasons that follow:

- The **Reason** section is revised to add details for tube installation at LH nacelle location
- The **Description** section is revised to add details for tube installation at LH nacelle location
- The **Reference** section is revised to convey the latest revision of the service bulletin and engineering documentation
- The **Parts Required Per Aircraft** section is revised to update part list for tube installation at LH nacelle location and update existing Notes and add new Note 5, 6 and 7.
- The **Procedure** section – **APD Sensing Line (Element) – Inspection and Repair** is revised to update a note
- The **Procedure** section – **Hydraulic Tube – Inspection and Repair** is revised to update step (1) and (4) with instructions for tube inspection at LH nacelle location and add an additional note
- **Figure 3** is revised and **Figure 4** is added for tube installation at LH nacelle location and additional notes.

The **Compliance** in the previous issue(s) of this service bulletin is not affected by this revision. No additional rework to the aircraft is introduced by this revision.

Remove the previous issue of Service Bulletin 84–26–20 and replace with attached.

Previous issue(s) of Service Bulletin 84–26–20:

Initial issue – Pages 1 thru 12 dated 21 Oct 2020

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DE HAVILLAND AIRCRAFT OF CANADA LIMITED

# SERVICE BULLETIN

ATA SYSTEM: 2610 NUMBER: 84–26–20

**DE HAVILLAND AIRCRAFT OF CANADA LIMITED (DHC) CONSIDERS THIS SERVICE BULLETIN TO BE PARTICULARLY SIGNIFICANT AND URGES OPERATORS TO PROMPTLY EVALUATE THE CONTENTS**

**SUBJECT: Fire Protection – Fire Detection System – Nacelle Fire Detection System – Main Landing Gear (MLG) Primary Zone – Advanced Pneumatic Detectors (APD) – Special Inspection and Rectification – ModSum 4–114036**

## 1. PLANNING INFORMATION

### A. Effectivity

Aircraft Affected:

In–Service: DHC–8 Aircraft Models 401 and 402 Serial Numbers 4001, 4003 thru 4614.

NOTE: The instructions in this service bulletin are only applicable to the systems and parts installed at the time of delivery on the aircraft or as changed by DHC Service Bulletin(s). Before you do this bulletin, examine all STC or equivalent action changes to make sure this bulletin can be completed.

Spares Affected:

None

## B. Reason

Problem: A hydraulic leak was reported by flight crew during flight. Additionally, the crew received an annunciation of the Check Fire Detect light caused the aircraft to return to base. An inspection of the area of the leak revealed a leak from the Tube Assembly, Cross to Restrictor, Nacelle (P/N:82974424–001) resulting from chafing with the RH MLG primary zone Advanced Pneumatic Detector (APD) sensing line.

There have been a total of six similar reported occurrences, Three of which involving the chafing between APD Sensing Line (Element) and the surrounding structure, and the other three involving Hydraulic tube damage incurred due to APD Sensing Line (Element) fouling with the Hydraulic tube.

Cause: Installation of the APD pressure sensing lines in close proximity to hydraulic system lines in the MLG primary zone.

Solution: This service bulletin provides the instructions to inspect the APD Sensing Line (Element), tube assembly 82974424–001 (RHS Nacelle), tube assembly 82974234–( ) (LHS Nacelle) and the surrounding structure for chafing damage and clearances between sensing line and the tube assembly 82974424–001 (RHS Nacelle) and the tube assembly 82974234–( ) (LHS Nacelle) and to replace sensing line and the tube assemblies, if necessary.

## C. Description

The procedures in this service bulletin give the instructions to do the tasks that follow:

- Aircraft electrical power is removed
- The nose landing gear lock is engaged
- The main landing gear lock pins are installed through each main gear and main gear door mechanism
- Access panels on the left and right nacelles are opened
- Main landing gear doors are opened and locked
- MLG Primary Zone APD Sensing Line (Element) is inspected for chafing damage and repaired
- Hydraulic tube assembly 82974424–001 (RHS Nacelle) and tube assembly

82974234–( ) (LHS Nacelle) is inspected for chafing damage and repaired

– The applicable operational tests are done

– Close out.

## D. Compliance

De Havilland Aircraft of Canada Limited recommends incorporation of this Service Bulletin at the earliest opportunity unless otherwise directed by the operator's airworthiness authority.

A Transport Canada Airworthiness Directive Pending.

## E. Approval

The technical content of this service bulletin has been approved under the authority of the Transport Canada Civil Aviation (TCCA) Design Approval Organization No: DAO #19–Q–01.

This service bulletin does not affect Airworthiness Limitations (AWLs) or Damage Tolerance Inspections (DTIs).

## F. Manpower

It will take an estimated 9.00* man–hours to complete this service bulletin. The breakdown of the man–hours is shown in the table that follows:

| TASK | MAN–HOURS |
|---|---|
| Job Set–Up | 2.00 |
| Procedure | 3.00* |
| Test / RTS | 2.00 |
| Close–Out | 2.00 |

This estimate is for direct labour done by an experienced crew and it does not include, planning, familiarization, cure time, part fabrication, tool acquisition or lost time.

NOTE: * Estimated time may vary, if it is required to replace APD Sensing Line (Element) and the tube assembly.

## G. Material – Price and Availability

The ModKit required to do this service bulletin is listed in the table below.

| Kit Number | Description |
|---|---|
| 8MK4916–001 | Kit – Inspection and Repair MLG Primary Zone APD |

Operators should submit a purchase order through the Customer Response Center (CRC) to the Customer Accounts Service Team (CAST) at DHC specifying aircraft serial number(s). Submit the purchase order to:

De Havilland Aircraft of Canada Limited
Material Services
123 Garratt Blvd.
Toronto
Ontario
Canada M3K–1Y5

DHC Phone Numbers:

North America:Toll Free: 1 (844)–CRC–CRC0 (1 (844) 272–2720) or
Direct: 1 (514) 855–8500

DHC Emails:

Parts: Europe, Middle East, Africa, and Russia: emear.parts@dehavilland.com
Americas and Rest of World: parts@dehavilland.com

## H. Tooling – Price and Availability

None

## I. Weight and Balance

Not affected

## J. Electrical Load Data

Not affected

## K. Publications Affected

ModSums Manual . . . . . PSM 1–84–12

### L. References

Revision ‘A’ of service bulletin was prepared to the engineering drawings and related data that follows:

| DRAWING | SHEET | REV |
|---|---|---|
| 8MK4916 | 1 | –B– |

ModSum 4–114036 Rev. ‘D’

ModSum 4Q114036 Rev. ‘D’

Related ModSum 4D170112 Rev. ‘A’

PCA 48032 Revision 00 (for internal reference only)

## 2. MATERIAL INFORMATION

### A. Parts Required Per Aircraft

(1) Modification Kit 8MK4916–001

(2) Detailed Kit Content:

| Quantity Per Kit –001 | Part Number | Description | Remarks |
|---|---|---|---|
| 2 | B0301010–08 | Union, Straight | See Note 3 4, 5 & 7 below |
| 2 | B0301015–08080604 | Cross. Reducer | See Note 3 4 & 5 below |
| 2 | 82974237–001 | Tube Assy | See Note 3 4 & 5 below |
| 2 | 82974236–001 | Tube Assy | See Note 3 4 & 5 below |

| Quantity Per Kit –001 | Part Number | Description | Remarks |
|---|---|---|---|
| 1 | 82974352–003 | Tube Assy | See Note 3 4, 5 & 6 below |
| 1 | 82974232–005 | Tube Assy | See Note 3 4, 5 & 6 below |
| 1 | 82974234–005 | Tube Assy | See Note 5 |
| 2 | B0302126–04 | Elbow, Swivel, 90° | See Note 5 |
| 1 | 82974424–001 | Tube Assy | See Note 5 |
| 2 | 10–1097–02 | Detector | See Note 5 |

NOTE 1: This kit does not contain any article subject to I.A.T.A dangerous goods regulations. Modification kits may contain substitute hardware and/or material authorized by De Havilland Aircraft of Canada Limited Materials Department.

NOTE 2: No drawings will be supplied with this kit. Drawings will be distributed concurrently with the Service bulletin.

NOTE 3: If Tube Assembly 82974424–001 replacement is required, Tube Assembly 82974352–003, 82974236–001, 82974237–001 and Cross. Reducer B0301015–08080604 may be required to complete the installation of the new tube.

NOTE 4: If Tube Assembly 82974234–( ) replacement is required, Tube Assembly 82974232–005, 82974236–001, 82974237–001 and Cross. Reducer B0301015–08080604 may be required to complete the installation of the new tube.

NOTE 5: These parts are not included in the kit and must be provided by the operator or obtained from De Havilland Aircraft of Canada Limited Spares. Part numbers and quantities as listed in the bill of materials should be obtained as required to repair any damage that may be present.

NOTE 6: Tube Assembly 82974232–005 & 82974352–003 are part of the latest production configuration shown. However, this inspection/repair applies to all tube part numbers (previous dash numbers, NIEO part numbers) installed in place of P/N 82974232–005 and 82974352–003.

NOTE 7: Use Union B0301010–08 to repair Tube Assembly 82974352–( ) and 82974232–( ). Install union per AMM TASK 20–20–22–400–801.

**NOTE: Permaswage fitting B0301010–08 may be required for repair. It is not included in the kit and must be provided or obtained from De Havilland Aircraft of Canada Spares.**

Listed drawings that are required to complete the kits above can be requested by writing to the following e–mail address:

dwg.request@dehavilland.com

**B. Parts Required to Modify Spares**

None

**C. Special Tools and Equipment Required**

None

**D. Existing Parts Accountability**

None

## 3. ACCOMPLISHMENT INSTRUCTIONS

If it is not possible to complete all the instructions of this service bulletin because of the configuration of the aircraft, speak with a representative of DHC in the CRC at 1 (844) 272–2720 (1 (844) CRC–CRC0) or email at thd@dehavilland.com for analysis and to get an approved disposition to complete this service bulletin.

**A. Job Set–Up**

**WARNING: MAKE SURE YOU INSTALL THE LOCKPINS ON THE MAIN LANDING GEAR. MAKE SURE YOU ENGAGE THE NOSE GEAR LOCK. IF YOU DO NOT DO THIS, THE LANDING GEAR CAN ACCIDENTALLY RETRACT. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO THE EQUIPMENT.**

**WARNING:** **MAKE SURE YOU INSTALL THE LOCKPINS IN THE DOOR MECHANISMS OF THE MLG AND NLG. THE DOOR MECHANISMS CAN ACCIDENTALLY CLOSE THE LANDING GEAR DOORS. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO THE EQUIPMENT.**

(1) Placard and select all aircraft electrical power to OFF. Obey all relevant WARNINGS and CAUTIONS (refer to AMM TASK 24–00–00–861–802 and AMM TASK 24–00–00–910–801).

(2) Make sure the aircraft is in standard configuration for maintenance (refer to AMM TASK 12–00–01–860–801).

(3) Make sure that lock pins are installed through each main gear.

(4) Open and lock the main landing gear doors to gain access to the inspection/repair area (refer to AMM TASK 32–00–00–840–801).

(5) Make sure the nose gear ground lock is engaged.

(6) Set wheel chocks in front and behind the landing gear tires.

(7) Set up work platforms or ladders around the No.1 and No.2 nacelles. Make sure that the work platforms or ladders are electrically grounded.

## B. PROCEDURE

### APD Sensing Line (Element) – Inspection and Repair

(1) Chemical clean the advanced pneumatic detector. Refer to AMM TASK 26–10–00–110–801. No external damage is allowed. Some surface discolorations is allowed.

(2) Inspect clearance between MLG primary zone APD Sensing Line (Element) and surrounding structure as well as clearance between other system components installed in vicinity of the MLG primary zone APD Sensing Line (Element) in the main landing gear bay area, in the LHS and RHS nacelles.

(3) Refer to AMM TASK 26–11–06–400–801 for minimum clearance requirements between the APD Sensing Line (Element) and surrounding structure as well as other system components installed in vicinity of the MLG primary zone APD and sensing line.

NOTE: To adjust APD Sensing Line (Element) clearance, move APD Sensing Line (Element) away from surrounding structure or other system components maintaining AMM TASK 26–10–00–110–801 APD installation requirements.

NOTE: If APD Sensing Line (Element) is damaged, it is required to remove APD per AMM TASK 26–11–06–000–801 and re–install per AMM TASK 26–11–06–400–801.

**Hydraulic Tube – Inspection and Repair**

(1) Inspect tube assembly 82974424–001 (RHS Nacelle) and tube assembly 82974234–( ) (LHS Nacelle) for chafing damage per AMM TASK 20–20–00–220–801.

NOTE: Approximate inspection area is located at RHS Nacelle X201D 187.53 (refer to Figure 3). Approximate inspection area is located at LHS Nacelle X201D 187.53 (refer to Figure 4).

(2) If tube damage is discovered, determine if the damage is within acceptable limits as per AMM TASK 20–20–00–220–801. Repair allowable chafing damage as instructed per the same task.

(3) Refer to following AMM tasks and AIPC sections for additional information on hydraulic line repair and installation:

1 AIPC 32–31–00–20 and 32–31–00–25 (MLG Hydraulic Piping Installation)

2 TASK 20–20–22–400–801 (Installation of Permaswage Radial Fittings on Rigid Fluid Lines)

3 TASK 20–20–21–350–801 (Repair of Hydraulic Lines using Permaswage Fittings).

NOTE: Permaswage fitting B0301010–08 may be required for repair. It is not included in the kit and must be provided or obtained from De Havilland Aircraft of Canada Spares.

(4) If the tube damage is more than the allowance limits, remove the tube assembly per AMM TASK 29–00–00–000–802 and install new tube assembly 82974424–001 (RHS Nacelle) or tube assembly 82974234–( ) (LHS Nacelle) and elbow B0302126–04 per AMM TASK 29–00–00–400–802.

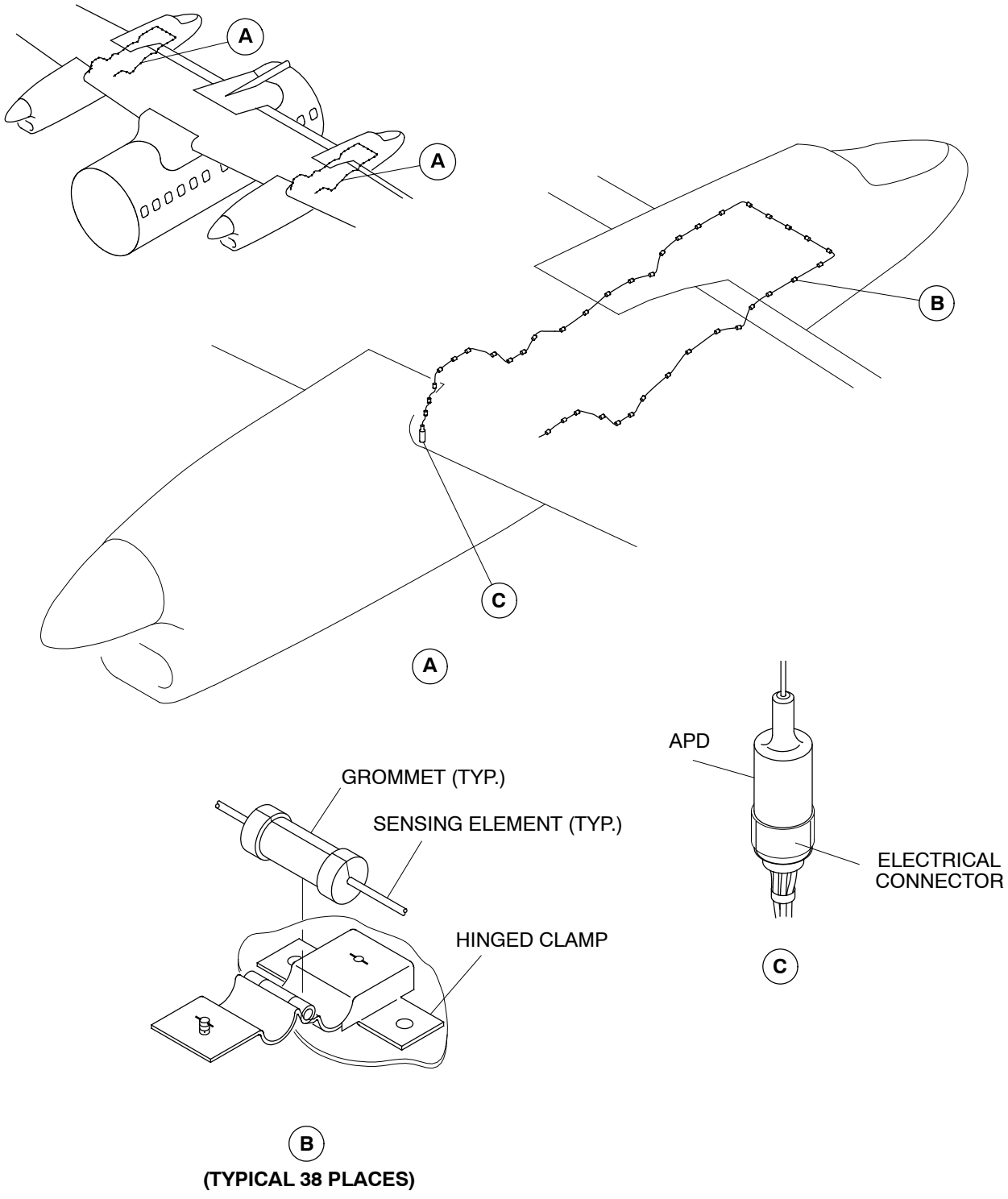
NOTE: If Tube Assembly 82974236–001 is re–installed , install Bonding Strap B0312009BB6 and Bonding Clamp AN735C6 as shown in the Figure 3 and Figure 4 (refer AMM TASK 51–80–00–400–801).

**C. Close Out**

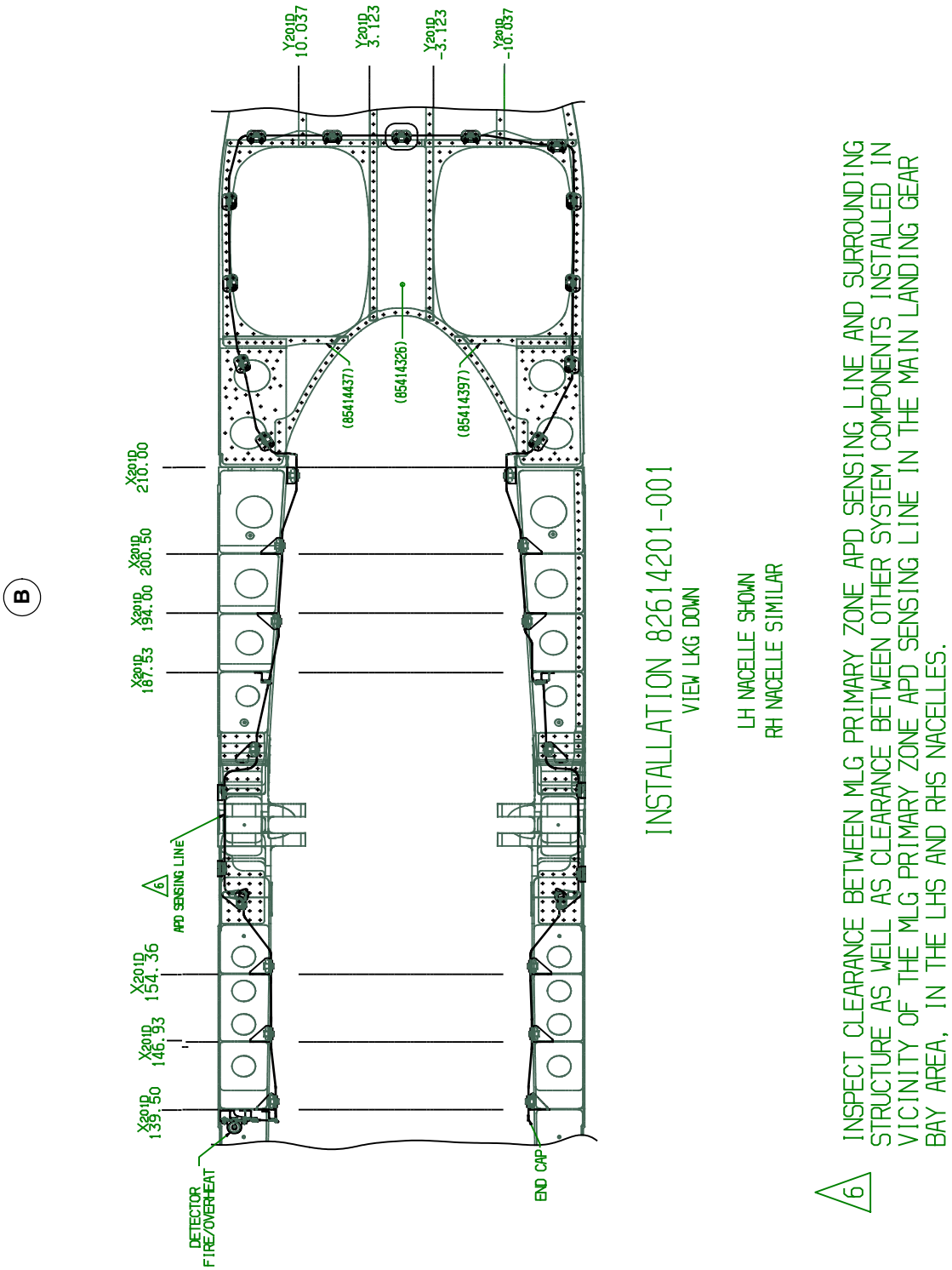
(5) Remove all tools and equipment from the work area.

(6) Close all the panels and doors that were opened and removed.

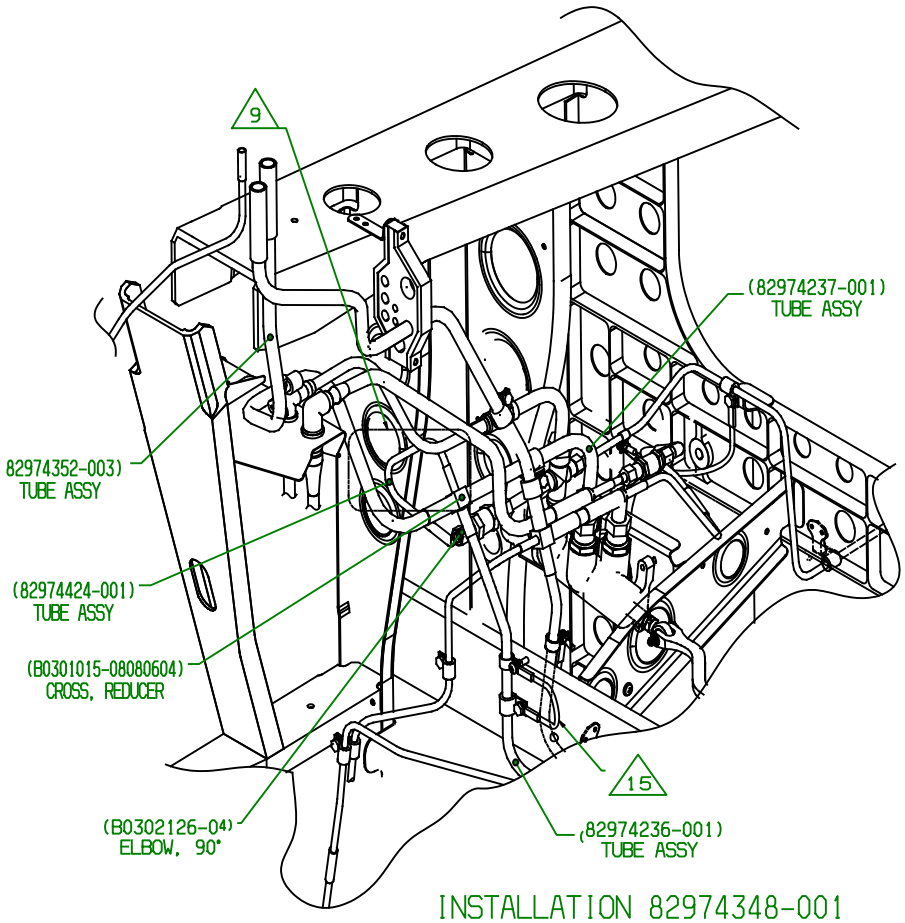
(7) On completion of this service bulletin, make the following entry in the appropriate logbooks: “Service Bulletin 84–26–20 {Fire Protection – Fire Detection System – Nacelle Fire Detection System – Main Landing Gear (MLG) Primary Zone – Advanced Pneumatic Detectors (APD) – Special Inspection and Rectification – ModSum 4–114036} accomplished.”




**MLG Primary Zone APD Sensing Line (Element) – Location**
**Figure 1**




**MLG Primary Zone APD Sensing Line (Element) – Location**
**Figure 2**

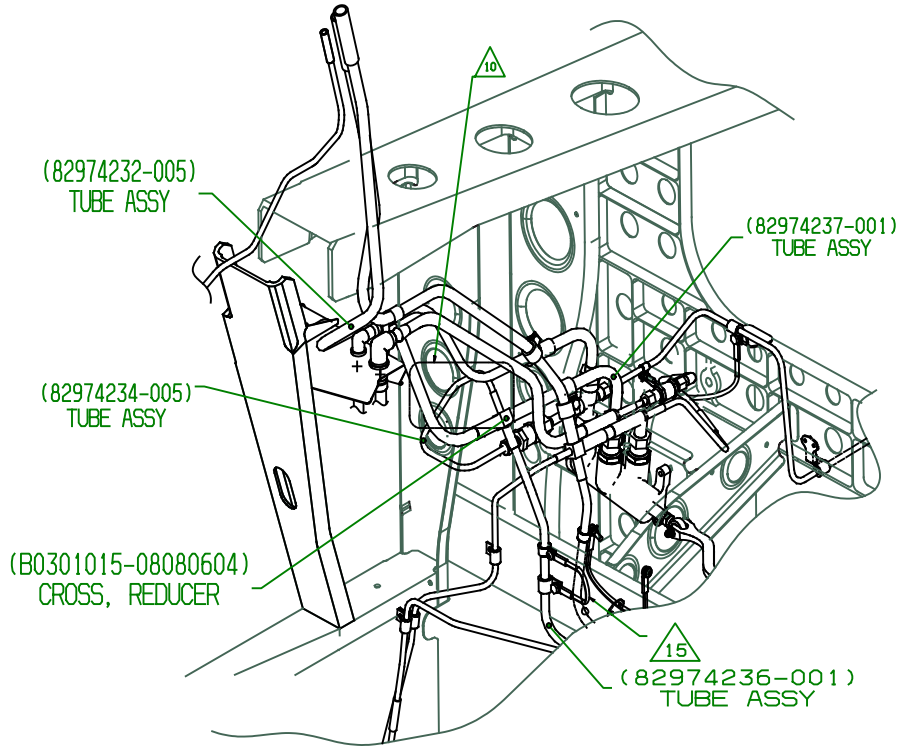



6 INSPECT CLEARANCE BETWEEN MLG PRIMARY ZONE APD SENSING LINE AND SURROUNDING STRUCTURE AS WELL AS CLEARANCE BETWEEN OTHER SYSTEM COMPONENTS INSTALLED IN VICINITY OF THE MLG PRIMARY ZONE APD SENSING LINE IN THE MAIN LANDING GEAR BAY AREA, IN THE LHS AND RHS NACELLES.

9 INSPECT TUBE ASSEMBLY 82974424-001 LOCATED IN THE RHS NACELLE FOR CHAFING DAMAGE. APPROXIMATE INSPECTION AREA IS LOCATED AT RHS NACELLE FRAME $X_{201D}$ 187.53, AS SHOWN IN THE ISO VIEW.

15 IF TUBE ASSY 82974236-001 IS RE-INSTALLED, INSTALL BONDING STRAP (B0312009BB6) AND BONDING CLAMP (AN735C6) AS SHOWN. INSTALL BONDING STRAP PER AMM TASK 51-80-00-400-801.

**Hydraulic Tube – Location (RH Nacelle)**
**Figure 3**




INSTALLATION 82974502-001
HYDRAULIC MLG TUBING, LH
(APD LINE NOT SHOWN)

6 INSPECT CLEARANCE BETWEEN MLG PRIMARY ZONE APD SENSING LINE AND SURROUNDING STRUCTURE AS WELL AS CLEARANCE BETWEEN OTHER SYSTEM COMPONENTS INSTALLED IN VICINITY OF THE MLG PRIMARY ZONE APD SENSING LINE IN THE MAIN LANDING GEAR BAY AREA, IN THE LHS AND RHS NACELLES.

10 INSPECT TUBE ASSEMBLY 82974234-( ) LOCATED IN THE LHS NACELLE FOR CHAFING DAMAGE. APPROXIMATE INSPECTION AREA IS LOCATED AT LHS NACELLE FRAME X201D 187.53, AS SHOWN IN THE ISO VIEW.

15 IF TUBE ASSY 82974236-001 IS RE-INSTALLED, INSTALL BONDING STRAP (B0312009BB6) AND BONDING CLAMP (AN735C6) AS SHOWN. INSTALL BONDING STRAP PER AMM TASK 51-80-00-400-801.

**Hydraulic Tube – Location (LH Nacelle)**
**Figure 4**

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## SERVICE BULLETIN (SB) – RECORD OF INCORPORATION
## DASH 8 AIRCRAFT

**To:** CMDB Focal
**Email:** cmdb.request@dehavilland.com

**From:** _____

**Company:** _____

**Phone:** _____ **Extn:** _____

**Facsimile:** _____ **Date:** _____

**Email:** _____

**The data that you provide below will help us record the incorporation of this Service Bulletin and the aircraft effectivity in the maintenance manual.**

**Operator:** _____ **Service Bulletin:** _____ **Revision:** _____

Aircraft Serial Number: _____ Model Number: _____ Date Bulletin Completed: _____

Aircraft Serial Number: _____ Model Number: _____ Date Bulletin Completed: _____

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***Email PDF to:***

cmdb.request@dehavilland.com

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OF CANADA LIMITED

## SERVICE BULLETIN (SB) – COMMENT SHEET – DASH 8 AIRCRAFT

**To:** SB Focal, DE HAVILLAND AIRCRAFT OF CANADA LIMITED
**Phone:** 1 (416) 373–5098
**Email:** george.moffatt@dehavilland.com

**From:** _____

**Company:** _____

**Phone:** _____ **Extn:** _____

**Facsimile:** _____ **Date:** _____

**Email:** _____

**Select appropriate box(es) and add comments or suggestions you would like us to know that may enhance the quality of our service bulletins.**

**Service Bulletin:** _____ **Revision:** _____ **ModSum:** _____

### 1. PLANNING INFORMATION

☐ Effectivity ☐ Reason ☐ Description ☐ Compliance
☐ Approval ☐ Manpower ☐ Material ☐ Weight and Balance
☐ Electrical Load ☐ Tooling ☐ References ☐ Publications Affected

### 2. MATERIAL INFORMATION

☐ Kit Content ☐ Special Tools/Equipment ☐ Parts to Modify Spares
☐ Consumables ☐ Disposition of Existing Parts ☐ Other _____

### 3. ACCOMPLISHMENT INSTRUCTIONS

☐ Job Set–Up ☐ Procedure ☐ Close–Out ☐ Test
☐ Illustration(s) ☐ Other _____

### 4. COMMENTS, REMARKS, SUGGESTIONS

***Email PDF to:***

**george.moffatt@dehavilland.com**