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## Department of Transport

# Part Design Approval

**This approval is issued to:**

3 Points Machining & Aerospace,  
91 Watts Ave.  
Charlottetown, Prince Edward Island,  
Canada, C1E 2B7.

*Number:* PDA12-2

**Issue No.:** 1

**Approval Date:** December 21, 2012

**Issue Date:** December 21, 2012

**Responsible Office:**

Atlantic

**Aeronautical Product Type or Model:**

Bombardier DHC-8-101, DHC-8-102, DHC-8-103,  
DHC-8-106, DHC-8-201, DHC-8-202, DHC-8-301,  
DHC-8-311, DHC-8-314, DHC-8-315.

**Canadian Type Certificate or Equivalent:**

A-142

**Replacement Part:**

See Applicability List

**Installation/Operating Data,  
Required Equipment and Limitations:**

**Manufacturing Data:**

Manufacture of the replacement parts must be in accordance with Transport Canada approved 3 Points Machining & Aerospace document 3PMA-ENG11-053-MDL Part Design Approval Master Data List, Issue 2, dated November 26, 2012 (or later Transport Canada approved revisions).

**Installation and Maintenance Data:**

Installation and Maintenance of the replacement part must be in accordance with Transport Canada accepted 3 Points Machining & Aerospace document 3PMA-ENG11-049-ICA Instructions For Continued Airworthiness, Issue 1, dated November 22, 2012 (or later Transport Canada accepted revisions).

**Basis of Certification:**

FAR Part 25 dated February 1, 1965, including Amendments 25-1 through 25-66.

**Limitations:**

None

— See Continuation Page 2 —

**Conditions:** The installation of the approved part is to be limited only to the type / model of aeronautical product(s) listed above



Stacey Mason

For Minister of Transport

Canada



NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

<b>PART APPLICABILITY LIST</b>			
<b>Part Description</b>	<b>Bombardier Part Number</b>	<b>3 Points Machining &amp; Aerospace Part Number</b>	<b>Aircraft Model Applicability</b>
Passenger Door Upper Strut Assembly	85210240-007	85210240-007-3PMA	DHC-8-101, 102, 103, 106, 201, 202, 301, 311, 314, 315
Passenger Door Upper Strut	85210240-055	85210240-055-3PMA	DHC-8-101, 102, 103, 106, 201, 202, 301, 311, 314, 315
Passenger Door, Upper Strut Rod End Assembly	85210239-001	85210239-001-3PMA	DHC-8-101, 102, 103, 106, 201, 202, 301, 311, 314, 315
Passenger Door, Upper Strut Rod End Housing	85210238-101	85210238-101-3PMA	DHC-8-101, 102, 103, 106, 201, 202, 301, 311, 314, 315
Passenger Door Lower Strut	85210241-103	85210241-103-3PMA	DHC-8-101, 102, 103, 106, 201, 202, 301, 311, 314, 315
Passenger Door Lower Strut	85210241-104	85210241-104-3PMA	DHC-8-101, 102, 103, 106, 201, 202, 301, 311, 314, 315

- End -



# DOCUMENT NO. 3PMA-ENG11-049-ICA

## DHC-8 Passenger Door Support Struts PDA12-2

### Instructions for Continued Airworthiness

Issue 1            November 22, 2012

Prepared By:

Name (print): Nick Desroches  
Title: Engineer, 3PMA

Checked By:

Name (print): Maurice Clark  
Title: 3PMA Director of Engineering

Approved By:

Name (print): Maurice Clark  
Title: 3PMA Director of Engineering

  
TCCA Accepted

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## Manual Distribution

This document, and any revisions to it, will be distributed to authorized users of the PDA data. The manual will be distributed by courier, in electronic format, or paper format, as appropriate.

## RECORD OF REVISIONS

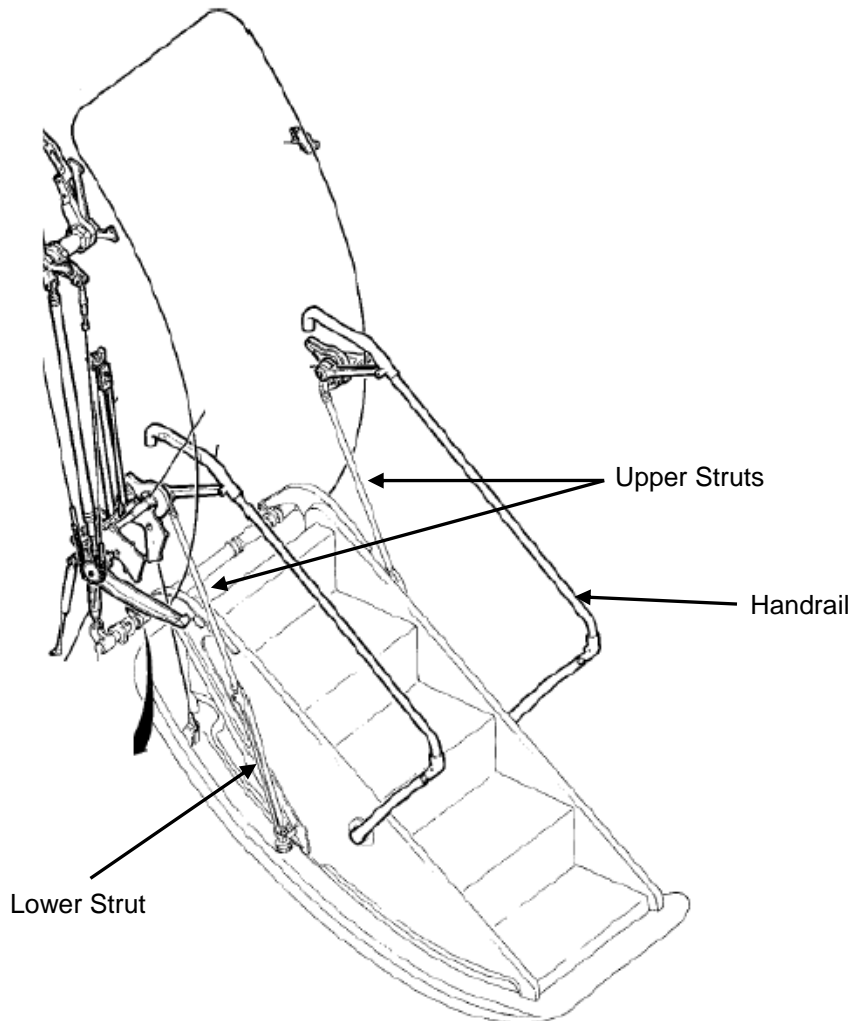
ISSUE	DESCRIPTION OF CHANGE	DATE	APPROVED BY	PAGES AFFECTED
1	Initial Release	Nov. 22, 2012	See Cover	All

## Introduction

This document provides the Instructions for Continued Airworthiness for the direct replacement passenger door support struts used on all DHC-8 Series 100, 200, and 300 aircraft models.

The passenger door support struts form a folding support (upper and lower strut, hinged together) that connect to the end of the gooseneck hinge fitting on both sides of the composite airstair door step assembly. They function as a part of the hinge mechanism for the door. When the door is fully open, the folding support struts are pulled into line and fully support the door in the open position.

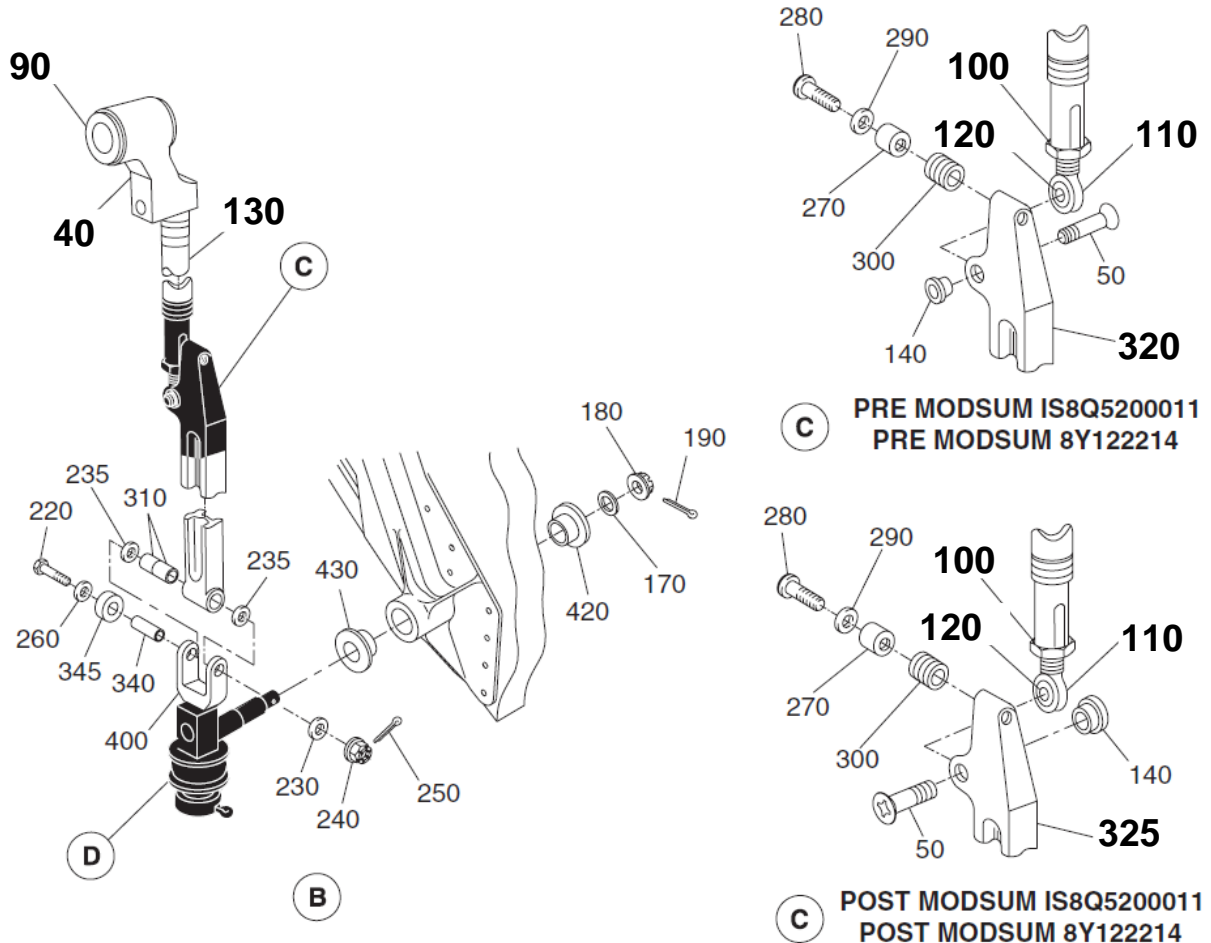
The replacement parts identified in this ICA are direct replacements for the original parts with no changes to fit, function, or maintenance requirements.



**Diagram Showing Open Passenger Door With Support Struts**

**DHC-8-100 / 200 / 300 Illustrated Parts Catalogue Supplement  
DHC-8 Passenger Door Support Struts PDA12-2**

**Supplement to Dash 8 IPC PSM 1-8-4, 1-82-4, or 1-83-4  
Chapter 52-10-00, Figure 35, Page 1  
Struts – Passenger Door**



- Item 40 P/N 85210240-007-3PMA (in place of 85210240-007)
- Item 90 P/N MS21241-16-A-016 (alternate to SAE-AS81934/2-16A016)
- Item 100 P/N AN316-8R (same as original installation)
- Item 110 P/N 85210239-001-3PMA (in place of 85210239-001)
- Item 120 P/N DSC8-4 (same as original installation)
- Item 130 P/N 85210240-055-3PMA (in place of 85210240-055)
- Item 320 P/N 85210241-103-3PMA (in place of 85210241-103)
- Item 325 P/N 85210241-104-3PMA (in place of 85210241-104)



## 3 Points Machining & Aerospace

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Issue 1

FIG	ITEM	PART NUMBER	AIRLINE STK NBR	NOMENCLATURE	EFFECT FROM TO	UNITS PER ASSY
35	40	85210240-007-3PMA		...STRUT ASSEMBLY, UPPER (INCLUDES ROD END ASSEMBLY 85210239- 101-3PMA AND BUSHING MS21241-16-A-016)	ALL	2
35	90	MS21241-16-A-016		...BUSHING (ALTERNATE PN SAE- AS81934/2-16A016)	ALL	2
35	100	AN316-8R		...NUT, JAM, HEX	ALL	1
35	110	85210239-001-3PMA		...ROD END ASSEMBLY (INCLUDES DSC8-4 BEARING)	ALL	1
35	120	DSC8-4		...BEARING, SELF ALIGNING	ALL	1
35	130	85210240-055-3PMA		...UPPER STRUT (UPPER STRUT WITHOUT BUSHINGS AND ROD END)	ALL	1
35	320	85210241-103-3PMA		.... STRUT, LOWER SUPPORT (USED ON FORWARD SIDE PRE ISQ5200011)	G (PRE ISQ5200011)	1
35	325	85210241-104-3PMA		.... STRUT, LOWER SUPPORT (USED ON FORWARD SIDE POST ISQ5200011)	H (POST ISQ5200011)	1
35	- 330	85210241-104-3PMA		.... STRUT, LOWER SUPPORT (USED ON AFT SIDE PRE ISQ5200011)	G (PRE ISQ5200011)	1
35	- 335	85210241-103-3PMA		.... STRUT, LOWER SUPPORT (USED ON AFT SIDE POST ISQ5200011)	H (POST ISQ5200011)	1

(- ITEM NOT ILLUSTRATED)



**Maintenance Manual and Structural Repair Manual Supplement  
DHC-8 Passenger Door Support Struts PDA12-2**

**Supplement to Dash 8 AMM PSM 1-8-2, 1-82-2, or 1-83-2  
Chapter 52 – Passenger Door**

**1 – Description**

See Page 3 of this document for description of replacement parts.

**201 – Maintenance Practices**

All original Maintenance Practices and Removal and Installation Instructions in Chapter 52, Passenger Door, remain applicable for aircraft with PDA support posts installed.

**701 – Cleaning / Painting**

The replacement support struts and rod end housings can be cleaned with cotton cloth and solvent such as varsol, isopropyl alcohol, or MEK. The part surface finishes are as follows:

<u>PART NAME AND NUMBER</u>	<u>PART MATERIAL AND MANUFACTURING FINISH SPECIFICATION (Reference Information)</u>
UPPER STRUT ASSEMBLY; 85210240-007-3PMA	The upper strut assembly is comprised of the upper strut 85210240-055-3PMA, rod end 85210239-001-3PMA, and bushings MS21241-16-A-016. Bushings are per MS spec; strut and rod end are as detailed below.
UPPER STRUT; 85210240-055-3PMA	Aluminum alloy 7075 finished all over with anodizing per MIL-A-8625, Type I; epoxy primer per MIL-PRF-23377; and light grey polyurethane enamel per MIL-PRF-22750; EXCEPT no primer and paint applied in the bores of the bushing or end fitting holes.
UPPER STRUT ROD END ASSEMBLY; 85210239-001-3PMA	The rod end assembly is comprised of the rod end housing 85210238-101-3PMA, and bearing DSC8-4. Bearing is per manufacturer spec; rod end housing is as detailed below.
UPPER STRUT ROD END HOUSING; 85210238-101-3PMA	Stainless steel alloy with no additional added finish.
LOWER STRUT; 85210241-103-3PMA AND 85210241-104-3PMA	Aluminum alloy 7075 finished all over with anodizing per MIL-A-8625, Type I; epoxy primer per MIL-PRF-23377; and light grey polyurethane enamel per MIL-PRF-22750; EXCEPT no primer and paint applied in the bores of bushing and screw holes.



### Supplement to Dash 8 SRM PSM 1-8-3, 1-82-3, or 1-83-3 Structural Repair Manual and Generic Repair Schemes Supplement, Chapter 52

#### 801 – Approved Repairs

Structural Repair Manual and SRM Repair Schemes Supplement Information: Generic repair RD8-52-027 does NOT apply to the replacement upper strut. No other repair scheme information exists for original parts.

For PDA parts, the following repair instructions apply:

- PASSENGER DOOR UPPER STRUT; 85210240-055-3PMA

Any nick, gouge, scratch, or other damage of up to .010” maximum total in depth on the surface of the part is to be smooth polished to remove sharp edges. This allowance does not apply to the inside bore of any holes or lugs. Visually inspect for any cracks (use a 10X magnifying glass) – no cracks permitted.

Refinish as follows:

Touch up reworked areas with alodine, epoxy primer, and polyurethane enamel (refer to Dash 8 SRM; Chapters 51-20-16, 51-20-36 and 51-20-51).

- PASSENGER DOOR, UPPER STRUT ROD END HOUSING; 85210238-101-3PMA

Any nick, gouge, scratch, or other damage of up to .005” maximum total in depth on the outer surface of the part is to be smooth polished to remove sharp edges. This allowance does not apply to the threaded portion or the inside bore for the bearing. Visually inspect for any cracks (use a 10X magnifying glass) – no cracks permitted. No protective finish required after rework.

- PASSENGER DOOR LOWER STRUT; 85210241-103-3PMA AND 85210241-104-3PMA

Any nick, gouge, scratch, or other damage of up to .010” maximum total in depth on the surface of the part is to be smooth polished to remove sharp edges. This allowance does not apply to the inside bore of any holes. Visually inspect for any cracks (use a 10X magnifying glass) – no cracks permitted.

Refinish as follows:

Touch up reworked areas with alodine, epoxy primer, and polyurethane enamel (refer to Dash 8 SRM; Chapters 51-20-16, 51-20-36 and 51-20-51).