

# SERVICE BULLETIN SUMMARY

This Service Bulletin is available at:  
[www.cic.bombardier.com](http://www.cic.bombardier.com)

MODEL BD-700-1A10 (BD-700)

ATA 27-52, 27-53

FLIGHT CONTROLS

**SPECIAL CHECK – FLAPS AND SLATS –  
CHECK OF THE SLAT AND FLAP TORQUE TUBES FOR CORRECT ENGAGEMENT**

The information below is provided for your reference. For full details, please see corresponding paragraph contained within this bulletin.

<b>EFFECTIVITY</b>	A/C Serial No. <b>9002 to 9126</b> and <b>9128 to 9211</b>		
<b>COMPLIANCE</b>	Alert	<input type="checkbox"/>	
	Recommended before or at the next "C" check	<input checked="" type="checkbox"/>	
	Optional	<input type="checkbox"/>	
<b>MANPOWER</b>	18 to 32 man-hours		
<b>KITS and/or PARTS</b>	YES <input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
<b>TOOLING</b>	YES <input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
<b>GSE</b>	YES <input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
<b>REQUIRED FOR SMART PARTS</b>	YES <input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
<b>PREREQUISITE BULLETINS</b>	N/A		

To place an order for material or kits, please call **Bombardier Spare Parts Sales** at:  
1-888-222-1428 (in North America)  
1-316-946-2377 (outside North America)

# SERVICE BULLETIN

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MODEL BD-700-1A10 (BD-700)

ATA 27-52, 27-53

FLIGHT CONTROLS

**SPECIAL CHECK – FLAPS AND SLATS –  
CHECK OF THE SLAT AND FLAP TORQUE TUBES FOR CORRECT ENGAGEMENT**

## 1. PLANNING INFORMATION

### A. Effectivity

BD-700-1A10 aircraft, Serial No. **9002** to **9126** and **9128** to **9211**.

All other subsequent BD-700-1A10 aircraft are scheduled for the special check in production (Ref.: RSI C-00902).

**NOTE:** The instructions given in this Service Bulletin are only applicable to the systems and parts installed at the time of delivery of the aircraft or as changed by Bombardier Aerospace Service Bulletin(s).

Before you do this bulletin, examine all STC, STA or equivalent action changes to make sure that this bulletin can be completed.

### B. Reason

In service operation and during maintenance, it was found that a condition can exist where a slat or flap system torque tube may not be correctly connected to the mating spline shaft of a Power Drive Unit (PDU), gearbox or actuator. If the torque tube is not pushed over the spline shaft far enough, the pinning bolt may be engaged in the torque tube only. In this condition, the torque tube could disconnect and cause the slat or flap system to shut down.

This Service Bulletin gives instructions to make sure that the torque tubes are correctly installed. First, it is necessary to confirm that the pinning bolts at one end of all slat and flap torque tubes are free to rotate in the torque tubes. Then a pull test of the mating components must be done to confirm that the 49 pinning bolts are correctly engaged into the holes of both the torque tube and the mating spline shaft. Each torque tube must be checked.

Refer to applicable governmental agency regulations and requirements and make sure that the work described in this Service Bulletin is performed in compliance with manufacturer's recommendations and/or acceptable industry standards.

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### **C. Description**

This Service Bulletin gives instructions to:

- Set the SLAT/FLAP control lever to OUT/30°,
- Remove the Main Landing Gear (MLG) wheel bins, one belly fairing panel and some leading edge lower panels for access,
- Do the special check of the pinning bolts at one end of all slats and flaps torque tubes to: 1) confirm free rotation of the bolts; and 2) check engagement of the bolts for correct torque tubes installation,
- Install the MLG wheel bins,
- Set the SLAT/FLAP control lever to IN/0°,
- Do the operational test of the MLG overheat detection system and the slat/flap control system, and
- Install the belly fairing panel and the leading edge lower panels removed for access.

### **D. Compliance**

Recommended before or at the next “C” check from this Service Bulletin release date (Basic Issue).

NOTE: This Service Bulletin is in reference to Advisory Wire AW700T-0050.

### **E. Approval**

The technical content of this Service Bulletin has been approved under the authority of Transport Canada Civil Aviation (TCCA) Design Approval Organization (DAO) DAO NO. #93-Q-02.

- NOTES:
1. The technical content of this Service Bulletin is accepted by the FAA under the Canada/USA bilateral Aviation Safety Agreement.
  2. The technical content of this Service Bulletin is accepted by the JAA and by EASA in accordance with established procedures

### **F. Manpower**

- NOTES:
1. The man-hours given are estimates to help you schedule the tasks given in this bulletin. The estimates are for direct labor performed by an experienced crew and do not include the time for familiarization, planning, aircraft preparation in hangar such as towing and positioning of scaffolds, removal of interior furnishings, repainting, supervision and inspection.

For more information related to the manpower estimates, refer to SB 700-00-002.

2. This Service Bulletin may require consumable materials that have specific curing times (refer to Paragraph 3.). The accumulated curing time is not included in the labor estimates and should be considered for planning purposes before you schedule this Service Bulletin.

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18 man-hours are necessary to do this special check on aircraft, Serial No. 9002 to 9211.

14 additional man-hours may be necessary to do this special check on aircraft, Serial No. 9002 to 9050.

The labor required to do this Service Bulletin is at no cost if:

- (i) the work is done during new aircraft warranty period, and
- (ii) the work is done at Bombardier Business Aviation Services (BBAS) or Authorized Service Facilities (ASF), and
- (iii) this Service Bulletin is scheduled in less than 12 months from its release date (Basic Issue).

**G. Material - Cost and Availability**

No kit is necessary to do this special check. For material data, refer to Paragraph 3.

The parts in Paragraph 3 may be necessary to do this special check.

These parts are available at no cost if:

- (i) ordered during new aircraft warranty period, and
- (ii) a no-charge purchase order is sent to Bombardier Aerospace in less than 12 months from this Service Bulletin release date (Basic Issue).

**H. Tooling**

No equipment or special tools are necessary.

**I. Weight and Balance**

No change.

**J. Electrical Load Data**

No change.

## **K. References**

- Bombardier Aerospace, Restriction and/or Special Instruction (RSI), C-00902, Rev. G
- Bombardier Aerospace, Advisory Wire AW700T-0050
- Global Express BD-700 Aircraft Maintenance Manual, Chapters 6, 24, 26, 27, 32, 53 and 57
- Global Express BD-700 Aircraft Illustrated Parts Catalog (AIPC), Chapters 27 and 57
- Global Express XRS BD-700 Aircraft Maintenance Manual, Chapters 6, 24, 26, 27, 32, 53 and 57
- Global Express XRS BD-700 Aircraft Illustrated Parts Catalog (AIPC), Chapter 27
- Global BD-700 Structural Repair Manual (SRM), Chapter 51.

## **L. Other Publications Affected**

None

## **M. Equivalent Service Bulletin**

For the Global 5000 BD-700-1A11 (BD-700) aircraft, use SB 700-1A11-27-008.

## **2. ACCOMPLISHMENT INSTRUCTIONS**

- NOTES:**
1. All TASKs referenced in the procedures that follow are from the Global Express or the Global Express XRS BD-700 Aircraft Maintenance Manual, unless otherwise specified.
  2. All references made to zones, access panels and/or doors, are from the Global Express or the Global Express XRS BD-700 Aircraft Maintenance Manual, Chapter 6.

### **A. Aircraft Setup**

- (1) Obey all electrical/electronic safety precautions. Refer to TASK 24-00-00-910-801.
- (2) For aircraft, Serial No. 9002 to 9100, remove from the leading edge lower access panels 511MB/611MB the aft three screws adjacent to the actuator No. 7 cover. Refer to AIPC, Chapter 57-41-00, Figure 2, Item 335 (No. 7 cover) and to TASK 57-41-13-000-801.  

**NOTE:** If this is not done, it may not be possible to remove these panels after the slats are out because of interference with the actuator No. 7 cover.
- (3) Connect and energize the external ac power. Refer to TASK 24-41-00-861-801.

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- (4) Obey all flight controls safety precautions. Refer to TASK 27-00-00-910-801.
- (5) In the flight compartment, make sure that there is no slat or flap related messages on the Engine Indicating and Crew Alerting System (EICAS).
- (6) In the flight compartment, on the center pedestal, set the SLAT/FLAP control lever to OUT/30°.
- (7) In the flight compartment, push the FLT CTRL button on the EICAS controller to show the FLIGHT CONTROLS synoptic page and make sure that:
  - (a) The SLAT OUT indication is shown for the slats.
  - (b) The FLAP 30 indication is shown for the flaps.
  - (c) The slats and flaps contour is green.
- (8) Remove the external ac power. Refer to TASK 24-41-00-861-802.
- (9) Install warning flags on the SLAT/FLAP control lever and on the slat and flap panels.
- (10) Set the circuit breakers that follow to OUT (on aircraft pre SB 700-24-045) or LOCKED (on aircraft, Serial No. 9123 and subsequent or aircraft post SB 700-24-045) in the specified sequence (refer to TASK 24-00-00-863-801):

SYSTEM NAME	CIRCUIT BREAKER NAME	BUS NAME
FIRE	FIRE DETECT CH A	BATT
FIRE	FIRE DETECT CH B	BATT

- (11) Open and tag the circuit breakers that follow:

LOCATION	CB NO.	NAME	ZONE
CCBP	E2	SLAT/FLAP PWR 2	222
CCBP	G9	SLAT/FLAP PWR 1	222

- (12) Open the Main Landing Gear (MLG) doors. Refer to TASK 32-00-00-010-801.
- (13) To get access to the flap torque tubes, remove the MLG wheel bins. Refer to TASK 53-30-01-000-801.
- (14) To get access to the slat torque tubes:
  - (a) Remove the belly fairing forward access panel 181BB. Refer to TASK 53-61-19-000-801.
  - (b) Remove the leading edge lower access panels that follow (refer to TASK 57-41-13-000-801): 511BB/611BB, 511DB/611DB, 511EB/611EB, 511GB/611GB, 511HB/611HB, 511KB/611KB and 511PB/611PB.

**B. Special Check**

- (1) For all the slat and flap torque tubes, make sure that the pinning bolt installed at one end can be rotated as follows:
  - (a) Hold the bolt head or the nut with fingers (not a wrench) and, if necessary, move the torque tube axially until the bolt can be rotated easily. Refer to the AIPC, Chapter 27-52-01, Figure 1 or Chapter 27-53-01, Figure 1 as applicable and to the drawing SDGT419-5000 for the locations of the pinning bolts on the torque tubes identified by a circle with a cross line similar to the symbol  $\Phi$ .  
  
NOTE: There are 26 pinning bolts for the slat and 23 pinning bolts for the flap torque tubes.
- (2) For tight pinning bolt(s) that cannot be rotated, do as follows:
  - (a) Remove the cotter pin and the nut and discard the cotter pin.
  - (b) Make sure that you have the correct washer thickness at each bolt installation. The correct installation is one washer, Part No. AN960C10L or NAS1149C0332R installed under the head of the bolt and one washer (same Part No.) under the nut.
  - (c) Re-install and tighten the nut.
  - (d) Make sure that there is an axial play of 0.080 inch (2.03 mm) maximum at the nut and that the bolt rotates freely.  
  
NOTE: If it is not possible to get an axial play of 0.080 inch (2.03 mm) maximum, replace the pinning bolt with a bolt of the same type but next grip length and make sure that the axial play at the nut is not more than 0.080 inch (2.03 mm). Make sure to align the holes in the torque tube and the mating spline shaft when the new pinning bolt is installed. Refer to the BD-700 SRM, Chapter 51-41-04.
- (e) Safety the nut with a new cotter pin. Refer to TASK 20-50-00-400-802.

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- (3) Confirm the correct engagement of the pinning bolts in the slat and flap torque tubes, one after the other, as follows (refer to the drawing SDGT419-5000 for the locations (49) of the pinning bolts on the slat or flap torque tubes identified by a circle with a cross line similar to the symbol  $\Phi$ ):
- (a) Hold the bolt head or the nut with fingers (not a wrench) and while the bolt is rotated freely, take the torque tube with the other hand and move it axially in the direction away from the mating spline shaft. Make sure that the bolt becomes difficult to rotate after torque tube displacement.
- NOTES:
1. The torque tube is not installed correctly if, after it is moved away from the mating spline shaft, the pinning bolt continues to rotate easily. If this occurs, go to step (4) below.
  2. If all the bolts are found difficult to rotate, the installation is correct. Go to paragraph 2.C.
- (4) If one or more torque tubes were found not correctly installed in the above step, do as follows:
- (a) Remove the pinning bolt.
  - (b) Align the holes in the torque tube and the mating spline shaft for correct engagement of the pinning bolt.
  - (c) Re-install the pinning bolt as given in step (2) above.
  - (d) Repeat the special check given in the above steps for each re-installed torque tube.
- (5) If one or more torque tubes became disconnected during the special check, complete the table below with the necessary information and send this page to the Montreal Action Center by fax at 514-855-7808 or by e-mail at the address that follows: [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com). The information will be relayed to the Customer Support Engineering Department for monitoring and reporting purposes.

A/C SERIAL NO. _____		
TORQUE TUBE PART NO.	LOCATION (NOTE)	
	Flap	Slat

NOTE: Indicate the slat or flap designation (inboard, middle or outboard) and wing side (left or right) and the torque tube attachment point (PDU, gearbox or actuator number). Refer to the attached SDD SDGT419-5000 or to the AIPC, Chapter 27-52-01, Figure 1 or Chapter 27-53-01, Figure 1 as applicable.

**C. Testing**

- (1) Install the Main Landing Gear (MLG) wheel bins. Refer to TASK 53-30-01-400-801.

NOTE: Torque the stud nuts 30 lbf-in (3.4 Nm).

- (2) Remove the tags and close the circuit breakers that follow:

LOCATION	CB NO.	NAME	ZONE
CCBP	G9	SLAT/FLAP PWR 1	222
CCBP	E2	SLAT/FLAP PWR 2	222

- (3) Set the circuit breakers that follow, in the specified sequence, to IN (refer to TASK 24-00-00-863-802):

SYSTEM NAME	CIRCUIT BREAKER NAME	BUS NAME
FIRE	FIRE DETECT CH B	BATT
FIRE	FIRE DETECT CH A	BATT

- (4) Connect and energize the external ac power. Refer to TASK 24-41-00-861-801.
- (5) In the flight compartment, make sure that there is no slat or flap related messages on the Engine Indicating and Crew Alerting System (EICAS).
- (6) Obey all flight controls safety precautions. Refer to TASK 27-00-00-910-801.
- (7) In the flight compartment, on the center pedestal, set the SLAT/FLAP control lever to IN/0°.
- (8) Do the operational test of the MLG overheat detection system. Refer to TASK 26-13-00-710-801.
- (9) Do the operational test of the slat/flap control system. Refer to TASK 27-51-00-710-801.
- (10) Remove the external the ac power. Refer to TASK 24-41-00-861-802.

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**D. Close-out**

- (1) Remove all tools, equipment and unwanted materials from the aircraft.
- (2) Install the belly fairing forward access panel 181BB. Refer to TASK 53-61-19-400-801.

NOTE: Torque the stud nuts 15 lbf-in (1.7 Nm).

- (3) Install the access panels that follow (refer to TASK 57-41-13-400-801):  
511BB/611BB, 511DB/611DB, 511EB/611EB, 511GB/611GB,  
511HB/611HB, 511KB/611KB, 511MB/611MB and 511PB/611PB.

NOTE: Torque the flat head screws 20 to 25 lbf-in (2.26 to 2.82 Nm) and the reduced head bolts 15 to 18 lbf-in (1.7 to 2.0 Nm).

- (4) Close the Main Landing Gear (MLG) doors. Refer to TASK 32-00-00-410-801.
- (5) Remove the warning flags from the SLAT/FLAP control lever and from the slat and flap panels.

**E. Recording**

When this Service Bulletin is completed, make an entry in the aircraft log and send the attached Incorporation Notice to Bombardier Business Aircraft Customer Support (BBACS).

**3. MATERIAL INFORMATION**

**A. Parts**

The parts that follow may be necessary to do this Service Bulletin and can be purchased from Bombardier, Spare Parts Center, Montréal:

NEW PART NO.	QTY	ITEM	USED PART NO.	INSTRUCTIONS - DISPOSITION
AN960C10L or NAS1149C0332R	A/R*	Washer	-	-
MS24665-69	A/R*	Cotter Pin	MS24665-69	Discard
NAS6603D14	A/R*	Bolt	-	-
NAS6603D16	A/R*	Bolt	-	-

\* As Required

NOTE: The part numbers for the items listed above are subject to change without revision to this Service Bulletin. In case of discrepancy between this list and any other list, the Illustrated Parts Catalog prevails and shall be used to determine the latest part number.

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**B. Material**

The consumable materials that follow, or equivalent, are necessary to do this Service Bulletin. These can be purchased from a local supplier:

DESCRIPTION	PART No./NAME	SPECIFICATION	QUANTITY	SUPPLIER (See Note)
Sealant CT: 30 hours	Pro-Seal 870 B 1/2	MIL-PRF-81733, Type II	As Necessary	Code: A
Solvent	DS-108	-	As Necessary	Code: B

- NOTES:**
- Bombardier Aerospace does not pay for the consumable materials listed above.
  - Refer to the table on the next page for each supplier's address listed by codes.
  - The Curing Time (CT), if applicable, for each consumable material is indicated with the description of each product.
  - At time of release of this Service Bulletin, the information on the supplier was valid and accurate. In the event that this information has changed, the operator is encouraged to use the World Wide Web to find a local supplier.

<b>SUPPLIERS ADDRESSES BY CODES</b>	
<p><b>Code: A</b></p> <p>PRC Desoto International 5454 San Fernando Road Glendale, CA 91209 U.S.A. Tel.: 1-800-228-5635 Tel.: (818) 240-2060</p>	<p><b>Code: B</b></p> <p>Dynamold Solvents Inc. P.O. Box 9617-76147 Fort Worth, TX 76107 U.S.A. Tel.: (817) 335-0863</p>

**C. Publications**

None



**SERVICE BULLETIN EVALUATION FORM**

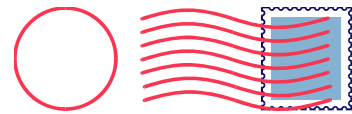
(Your ideas will help us provide better bulletins)

<b>SERVICE BULLETIN:</b>	700-27-052	<b>ISSUE:</b>	Basic	<b>DATED:</b>	Nov 13/2006
<b>TITLE:</b> Special Check – Flaps and Slats – Check of Slat and Flap Torque Tubes for Correct Engagement					

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
<ul style="list-style-type: none"> <li>• <b>Instructions to do the Service Bulletin were accurate.</b> Comments:</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• <b>Illustration(s), figure(s), and/or kit drawing(s) were helpful to carry out instructions.</b> Comments:</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• <b>If a kit was required, did the kit contents received agree with the contents listed in the bulletin?</b> Comments:</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• <b>The loose parts listed under Paragraph 3 were easily procured.</b> Comments:</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• <b>Work was accomplished in the prescribed time.</b> Comments:</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• <b>Overall, I was satisfied with this Service Bulletin.</b> Comments:</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>For administrative use only</i>	<b>PLEASE SUPPLY US WITH THE FOLLOWING DATA AND FAX TO: (514) 855-2535</b>	
0631TPAT6923	OPERATOR:	
	AIRCRAFT SERIAL NO.:	
	TELEPHONE:	
	FACSIMILE:	
	NAME: (Please print)	

**THANK YOU FOR YOUR RESPONSE!**  
**PLEASE RETURN THIS COMPLETED EVALUATION FORM BY MAIL OR FAX**



**Bombardier Business Aircraft Customer Support (BBACS)**

P.O. Box 6087, Station Centre-ville  
Montréal, Québec, Canada H3C 3G9

Attention: Supervisor, Service Bulletin Group  
Department 631

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## SERVICE BULLETIN INCORPORATION SHEET – “700-27-052”

Upon completion of the Service Bulletin, please fill in this form and either fold and mail in the envelope provided, or fax to:(514) 855-8798, or e-mail to Fracas at fracas.montreal@aero.bombardier.com

**NOTE:** For configuration control purposes, please fill out one form for each Service Bulletin.

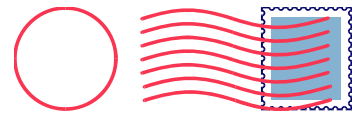
Service Bulletin Number	Rev.	* Parts Completed	Further Action Required	
			YES	NO
700-27-052	Basic	-	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>

**Actual hours to accomplish Service Bulletin:**  
 Access: \_\_\_\_\_ Modification: \_\_\_\_\_ Tests: \_\_\_\_\_ Restore: \_\_\_\_\_

\* **NOTES:** 1. Where the Service Bulletin is divided into a number of parts (e.g., PARTS A, B, C, D, etc.) which can be carried out separately, indicate only those parts completed at this time.  
 2. For repetitive checks (usually PART A), only the initial check should be reported unless otherwise stated in the Service Bulletin.  
 3. When more than one part is carried out at the same time, each part should be reported.

<b>Is the aircraft enrolled on the CAMP computerized maintenance program?</b>	<b>Yes</b>	<b>No</b>
	<input type="checkbox"/>	<input type="checkbox"/>

Aircraft Serial No. _____	Aircraft Reg. No. _____
Airframe Landings _____	Airframe Hours _____
Date of Incorporation _____	Service Order No. _____
Facility & Location Incorporation Bulletin _____	
SIGNED: _____	DATE: _____



**Bombardier Business Aircraft Customer Support (BBACS)**

P.O. Box 6087, Station Centre-ville  
Montréal, Québec, Canada H3C 3G9

Attention: Maintenance Engineering  
Department 051

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