

SERVICE BULLETIN REVISION TRANSMITTAL SHEET

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

Discard the Basic Issue of this Service Bulletin, dated Dec 19/2003 and replace in its entirety with this Revision 01.

Service Bulletin No. 700-27-045

Date of Basic Issue Dec 19/2003

Revision No. 01 Dated Mar 31/2004

This revision has no effect for aircraft on which the Basic Issue of this Service Bulletin was done thus no other action is necessary.

This revision is issued to:

1. Remove all references to the inspection and replacement of the Slat Flap Control Lever (SFCL) from this Service Bulletin to reflect the changes given in Hamilton Sundstrand SB FAS02C-27-6, Revision 1. The changes are as follows:
 - Change the description statement in paragraph 1.E., to remove reference to the SFCL.
 - Change the manpower statement in paragraph 1.F., to remove reference to the SFCL in step (3).
 - Change the material - cost and availability in paragraph 1.G., to remove the old step (3), which referenced the SFCL.
 - Change the statement in paragraph 2.B., to remove step (1)(a) which replaced the SFCL.
 - Change the statement in paragraph 3.A., to remove the SFCL from the parts table and to revise NOTE 2.
 - Change the title and the content in paragraph 1.A., of Appendix 1, to remove reference to the SFCL.
 - Change the statement in Appendix 1 to remove the old paragraph 1.G., in its entirety as it dealt with the SFCL.
2. Change the nominal value for each coil listed in Appendix 1, paragraph 2.A., step (2)(a) thru (d).
3. Introduce revision 01 of the attached Hamilton Sundstrand SB FAS02C-27-6 and SB FAS02C-27-7.
4. Make miscellaneous minor changes, as necessary, with no change of context.

SERVICE BULLETIN

This Service Bulletin is available at:
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MODEL BD-700-1A10 (BD-700)

ATA 27-51

FLIGHT CONTROLS

**SPECIAL CHECK/MODIFICATION – CONTROL AND INDICATION SYSTEMS –
SLAT/FLAP RESOLVER CHECK AND SLAT/FLAP CONTROL UNIT (SFCU)
UPGRADE TO GT415-5900-13**

1. PLANNING INFORMATION

A. Compliance

Recommended for aircraft with Slat/Flap Control Unit (SFCU), Part No. GT415-5900-9 installed.

B. Approval

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

This Service Bulletin is also accepted by the FAA under the Canada/USA Bilateral Aviation Safety Agreement and by the JAA in accordance with the JAA/TCCA Post-Type Validation Procedures.

C. Effectivity

BD-700-1A10 aircraft, Serial No. **9002** to **9121** with SFCU, Part No. GT415-5900-9 installed (See NOTE 1).

All other subsequent BD-700-1A10 aircraft are scheduled to have SFCU, Part No. GT415-5900-11 or -13 installed in production (Ref.: Modification Summaries, 700T02024 and 700T804033).

NOTES: 1. This Service Bulletin is not applicable to aircraft with SFCU, Part No. GT415-5900-7M or -11 installed.

2. This Service Bulletin supersedes PART C of SB 700-27-042.

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3. PART A and if applicable PART B of SB 700-27-042 are prerequisites and must be done before or at the same time as this Service Bulletin.
4. 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.

D. Reason

This Service Bulletin introduces SFCUs, Part No. GT415-5900-13, which contain the following improvements:

- A redesigned motor drive power assembly to reduce the potential for a hot out-gassing event that can cause damage to the SFCU as well as collateral damage to surrounding aircraft components.
- A power board assembly modified for electromagnetic interference (EMI) compliance.
- A replacement DC-DC converter.

Prior to the incorporation of the SFCU, Part No. GT415-5900-13, an SFCU Non-Volatile Memory (NVM) download is required for analysis of the slat/flap resolvers and aircraft wiring. After the analysis is obtained, it may be necessary to replace/repair the slat/flap resolvers and/or aircraft wiring.

The slat/flap resolvers and/or aircraft wiring fault related can result in a single-channel operation with the slat or flap control surfaces operating at half speed.

Incorporation of this Service Bulletin will provide improved SFCU reliability.

E. Description

This Service Bulletin gives instructions to:

- Get access to the SFCU No. 1 and No. 2 in the main avionics compartment,
- Do the SFCU NVM download procedures as given in the attached Hamilton Sundstrand SB FAS02C-27-6. Following the analysis of the SFCU NVM download, it may be necessary to:
 - Do the slat/flap resolvers check/rectification procedures as given in the attached Hamilton Sundstrand SB FAS02R-27-1, and
 - Do the wiring – connection check procedures as given in the attached Appendix 1.
- Replace the SFCU No. 1 and No. 2, and
- Do the necessary tests to make sure that the systems operate correctly.

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.

(1) To ensure a timely and effective return/rework program, Bombardier Aerospace will be contacting the operators for the scheduling of this special check/modification.

(2) For the man-hours necessary to do the SFCU NVM download, refer to Hamilton Sundstrand SB FAS02C-27-6.

A Hamilton Sundstrand representative will accomplish the SFCU NVM download and will be offered at no charge until Dec 18, 2004.

(3) Following analysis of the SFCU NVM download, it may be necessary to:

- Do the slat/flap resolvers check/rectification procedures as given in the attached Hamilton Sundstrand SB FAS02R-27-1.

A Hamilton Sundstrand representative will accomplish the procedures in the Hamilton Sundstrand SB FAS02R-27-1.

- Do the wiring – connection check procedures as given in the attached Appendix 1.

The man-hours to troubleshoot the system and to repair/replace the defective component, if any, are not quoted as the damage can vary on different aircraft.

Labor is at no cost if the work is done at Bombardier Business Aviation Services or Authorized Service Facilities. For Bombardier Aerospace to pay for the labor, the Service Bulletin must also be scheduled in less than 12 months from the Service Bulletin release date (Basic Issue).

(4) 6 man-hours are necessary to replace and test both SFCUs.

Labor is at no cost if the work is done at Bombardier Business Aviation Services or Authorized Service Facilities. For Bombardier Aerospace to pay for the labor, the Service Bulletin must also be scheduled in less than 12 months from the Service Bulletin release date (Basic Issue).

G. Material - Cost and Availability

- (1) No kit or materials are necessary to do this modification.
- (2) To ensure a timely and effective return/rework program, Bombardier Aerospace will be contacting the operator for the scheduling of this special check/modification.
- (3) Zero to four slat/flap resolvers, Part No. GT415-5300-3 (5911081) may be necessary to do this modification.

Hamilton Sundstrand will supply replacement resolvers on an exchange basis at no charge until Dec 18, 2004. Refer to Hamilton Sundstrand SB FAS02R-27-1.

- (4) Two SFCUs, Part No. GT415-5900-13, are necessary to do this modification.

Hamilton Sundstrand will incorporate this modification into units at no charge until Dec 18, 2006. Refer to Hamilton Sundstrand SB FAS02C-27-7.

- (5) During or after the above free period, Smart Parts Plus does not pay for the resolver(s) and/or the SFCU upgrade.

NOTE: This Service Bulletin must be done for you to stay or enroll in the Smart Parts Plus Program.

H. Tooling - Price and Availability

GSE REFERENCE NO.	PART NO.	DESCRIPTION
20X-10-01	S4933959-501	Tag, Circuit Breaker

NOTE: Refer to the Illustrated Tool and Equipment Manual to make sure you use the correct equipment configuration.

I. Weight and Balance

No change

J. Electrical Load Data

No change

K. References

- Bombardier Aerospace, Modification Summary 700T02024, Rev. B
- Bombardier Aerospace, Modification Summary 700T804334, Rev. A1
- Bombardier Aerospace, SB 700-27-042 “Special Check/Modification - Control and Indication Systems - Check and Replace Slat/Flap Power Drive Unit (PDU) Motors if Necessary and Upgrade the Slat/Flap Control Unit (SFCU) to -11 Configuration with New Software”
- BD-700 Aircraft Maintenance Manual, Chapters 6, 24, 27, 45 and 52
- BD-700 Illustrated Tool and Equipment Manual, Chapter 20
- Bombardier Aerospace, SB 700-27-045, Appendix 1 (attached)
- Hamilton Sundstrand SB FAS02R-27-1 (attached)
- Hamilton Sundstrand SB FAS02C-27-6, Revision 1 (attached)
- Hamilton Sundstrand SB FAS02C-27-7, Revision 1 (attached).

L. Other Publications Affected

- BD-700 Aircraft Illustrated Parts Catalog (IPC), Chapter 27.

M. Equivalent Service Bulletin

None

2. ACCOMPLISHMENT INSTRUCTIONS

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

A. Aircraft Setup

- (1) Obey all the electrical/electronic safety precautions. Refer to TASK 24-00-00-910-801.
- (2) Obey all the electrostatic discharge safety precautions. Refer to TASK 24-00-00-910-802.

B. SFCU Non-Volatile Memory (NVM) Download and Resolvers Check

NOTE: Hamilton Sundstrand will perform the SFCU NVM download.

- (1) Do the Hamilton Sundstrand SB FAS02C-27-6. Following the analysis from the NVM download, it may be required to:
 - (a) Do the wiring – connection check procedures as given in the attached Appendix 1.
 - (b) Replace the slat/flap resolvers. Refer to the Hamilton Sundstrand SB FAS02R-27-1.
- (2) Proceed to the modification of the SFCUs in paragraph 2.C.

C. Modification – Upgrade of the SFCUs

- (1) To prevent unnecessary mechanical rigging, set the SLAT/FLAP control lever (on the center pedestal) to IN/0° before you proceed any further.

WARNING: ON AIRCRAFT PRE SB 700-24-045, MAKE SURE YOU DO NOT SET THE EMS CDU CIRCUIT BREAKERS TO 'LOCK'. IF YOU DO THIS AND YOU APPLY ELECTRICAL POWER, THE CIRCUIT BREAKERS WILL AUTOMATICALLY BE SET TO THEIR ORIGINAL POSITION. THIS WILL PUT THE AIRCRAFT IN A DANGEROUS CONDITION FOR MAINTENANCE.

- (2) For aircraft pre SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to ON and on the Electrical Management System (EMS) Control Display Unit (CDU), installed on the pilot's and co-pilot's side panel, set the circuit breakers that follow to OUT:

SYSTEM NAME	CIRCUIT BREAKER NAME	BUS NAME
FLT CTRL	SLAT/FLAP CTRL 1	BATT
FLT CTRL	SLAT/FLAP CTRL 2	DC ESS

- (3) For aircraft post SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to EMS and on the pilot's and co-pilot's EMS CDU, set the circuit breakers in the previous table to LOCKED.

NOTE: All other electrical power must be removed from the aircraft to set circuit breakers to LOCKED.

- (4) For aircraft pre SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to OFF.

WARNING: ON AIRCRAFT POST SB 700-24-045, AFTER THE CIRCUIT BREAKERS ARE SET TO LOCKED, MAKE SURE TO SET THE BATT MASTER SWITCH TO ON BEFORE IT IS SET TO OFF. IF THE BATT MASTER SWITCH IS SET TO OFF FIRST, THE CIRCUIT BREAKERS WILL NOT STAY IN THE LOCKED POSITION. THIS WILL PUT THE AIRCRAFT IN A DANGEROUS CONDITION FOR MAINTENANCE.

- (5) For aircraft post SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to ON, and then to OFF.

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

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

- (7) Remove the external avionics-compartment access panel 140BB. Refer to TASK 52-45-11-000-801.

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- (8) Remove the components shown in the table below:

COMPONENT	QTY	USED PART NO. (BEFORE THE MODIFICATION)	TASK NO.	VENDOR SB
SFCU	2	GT415-5900-9	27-51-05-000-801	FAS02C-27-7

- (9) Install the components shown in the table below:

COMPONENT	QTY	NEW PART NO. (AFTER THE MODIFICATION)	TASK NO.	VENDOR SB
SFCU	2	GT415-5900-13	27-51-05-400-801	FAS02C-27-7

- (10) For aircraft post SB 700-24-045, set the BATT MASTER switch to EMS and on the pilot's and co-pilot's EMS CDU, set the circuit breakers that follow that are in the LOCKED position to OUT:

- NOTES:
1. All other electrical power must be removed from the aircraft to unlock circuit breakers.
 2. It is necessary to make the selection of each circuit breaker two times: the first time to show the status (LOCKED) and the second time to change the status from LOCKED to OUT.

SYSTEM NAME	CIRCUIT BREAKER NAME	BUS NAME
FLT CTRL	SLAT/FLAP CTRL 1	BATT
FLT CTRL	SLAT/FLAP CTRL 2	DC ESS

- (11) Set the BATT MASTER switch to ON and on the pilot's and co-pilot's EMS CDU, set the circuit breakers in the previous table to IN.

- NOTES:
1. For aircraft post SB 700-24-045, circuit breakers cannot be set from LOCKED to IN. If one or more of the previous circuit breakers is forgotten in the LOCKED position, it will be necessary to repeat the previous step and this step to set the circuit breakers to IN.
 2. For aircraft post SB 700-24-045, if the BATT MASTER switch is set to OFF before it is set to ON, the previous circuit breakers will not stay in the OUT position but will automatically return to the LOCKED position.

- (12) Do the steps that follow to start the CAIMS:

- (a) Follow the CAIMS PMAT general instructions to start the CAIMS PMAT. Refer to TASK 45-45-00-970-801.
- (b) On the CAIMS PMAT, click two times on the CAIMS icon to start the CAIMS.

- (13) On the CAIMS PMAT, get access to system diagnostics. Refer to TASK 45-45-00-970-804.

- (14) Do the rigging of the flap system as follows:
- (a) Wait 30 seconds until the power-up sequence is completed.
 - (b) On the CAIMS, do as follows:
 - (i) Set the VIEW menu.
 - (ii) Set the ENVIRONMENT SETTINGS.
 - (iii) Go to the Environment Control page.
 - (iv) On the TRANSMISSION INFO/AIRCRAFT, S/N display, make sure the correct identification number shows.
 - (v) If the aircraft identification number is not correct, put the correct aircraft identification number. Refer to TASK 45-45-00-970-823.

D. Slat Rigging

- (1) In the CAIMS PMAT, do as follows:
- (a) Go to SYSTEM DIAG to get ATA SELECTION DISPLAY page (1/2).
 - (b) Go to ATA 27-00 FLIGHT CONTROLS to get the LRU SELECTION PAGE.
 - (c) Go to SLAT/FLAP CONTROL UNIT #1 to get the STORED FAULTS DISPLAY/LRU TEST page.
 - (d) Go to LRU TEST to get the SFCU 1 LRU TEST MENU 1/1.
 - (e) Go to SLAT/FLAP RIG SFCU 1 to get the SFCU 1 MAIN RIG screen.
 - (f) Go to YES to get the SFCU 1 SLAT RIG STATUS PAGE.
NOTE: Disregard the TEST CMD DID NOT RESPOND message at the bottom of the CAIMS page.
 - (g) Go to YES to get the SFCU 1 SLAT RIG page.
 - (h) Go to RIG SLAT ENABLE COMMAND and push SELECT.
 - (i) The indications LEFT/RIGHT SLAT RESOLVER (DEG) should show 20.0 ± 10.0 degrees.
- (2) In the CAIMS PMAT, continue the rigging of the slat panels as follows:
- (a) Go to RIG SLAT COMMAND and push SELECT.
 - (b) SFCU 1 & 2 LH & RH readings should go to 0.0 degrees \pm 0.1 degrees.
 - (c) Go to RETURN.
 - (d) Go to NO to go to the FLAP RIG STATUS page.

E. Flap Rigging

- (1) On the CAIMS PMAT, do as follows:
 - (a) Push YES to go to the SFCU 1 FLAP RIG STATUS PAGE.
 - (b) Push YES to go to the SFCU 1 FLAP RIG page.
- (2) On the CAIMS PMAT, continue the rigging as follows:
 - (a) Go to FLAP RIG ENABLE COMMAND and push SELECT.
 - (b) Make sure the LEFT and the RIGHT FLAP RESOLVER (DEG) indications are $20.0^{\circ} \pm 10.0^{\circ}$.
 - (c) Go to FLAP RIG COMMAND and push SELECT.
 - (d) SFCU 1 & 2 LH & RH readings should go to 0.0 degrees \pm 0.1 degrees.
- (3) Push NO to go to the SFCU 1 CLEAR LATCHED INHIBITS page.
- (4) On the SFCU 1 CLEAR INHIBITS PAGE page, make sure you get the indications that follow:
 - LATCHED FLAP FAULT = FALSE.
 - LATCHED SLAT FAULT = FALSE.
 - LATCHED FAULTS = NO FAULTS.
- (5) Push CONFIRM to go to the FINAL RIG STATUS page.
- (6) On the FINAL RIG STATUS page, make sure you get the indications that follow:
 - SLAT RIG REQUIRED = FALSE.
 - OFFSIDE SLAT RIG REQUIRED = FALSE.
 - FLAP RIG REQUIRED = FALSE.
 - OFFSIDE FLAP RIG REQUIRED = FALSE.
 - LATCHED FAULTS = NO FAULTS.
- (7) Push TEST COMPLT to go out of the rigging.
- (8) Repeat previous steps (1) to (6) for the SFCU 2.
- (9) 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

F. Testing

CAUTION: DO NOT OPERATE THE FLAPS MORE THAN THE PERMITTED DUTY CYCLE OF THE ACTUATOR. YOU CAN CAUSE DAMAGE TO THE COMPONENTS.

- (1) Do an operational test of the slat/flap control system. Refer to TASK 27-51-00-710-801.

NOTES: 1. For one full cycle (extend and retract), set the SLAT/FLAP control lever from IN/0° to OUT/30° then back to IN/0°.

2. Between each full cycle wait 1 minute.

3. Every 5 cycles, make sure you let the system cool for 5 minutes.

- (2) Do a 40-cycle check of the slat/flap control system and then confirm that there are no EICAS indications of flap or slat system faults or failures.

G. Close-out

- (1) Remove all tools, equipment and unwanted materials from the aircraft.

- (2) Install the external avionics-compartment access panel 140BB. Refer to TASK 52-45-11-400-801.

H. Recording

When this Service Bulletin is completed, make an entry in the aircraft log and send the attached Incorporation Notice to Bombardier Business Aviation Services.

3. MATERIAL INFORMATION

A. Parts

The parts that follow are necessary to do this Service Bulletin:

ITEM	PART NUMBER	QTY	INSTRUCTIONS - DISPOSITION
SFCU	GT415-5900-13	2	Refer to paragraph 1.G.
Slat/Flap Resolver	GT415-5300-3 (See NOTE 2)	4	Refer to paragraph 1.G.

NOTES: 1. 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.

2. The slat/flap resolvers may only need to be replaced following the analysis from the NVM download in the Hamilton Sundstrand SB FAS02C-27-6.

Appendix 1

RESOLVER WIRING - CONNECTION CHECK PROCEDURE

1. TROUBLESHOOTING PROCEDURE

A. Purpose of the Inspection

This procedure is to identify suspected resolver problems prior to Slat/Flap Control Unit (SFCU) replacement.

B. Reference Information

- BD-700 Aircraft Maintenance Manual, Chapters 24, 27, 51, 52 and 57
- BD-700 Wiring Manual, Chapter 27-50-00.

C. Tools and Equipment

GSE REFERENCE NO.	PART NO.	DESCRIPTION
-	Commercially Available	Megohmmeter
-	Commercially Available	Milliohmmer
-	Commercially available	Digital Multimeter

D. Setup

- (1) Connect electrical power to the aircraft. Refer to TASK 24-00-00-861-801.
- (2) On the center pedestal, set the SLAT/FLAP control lever to OUT/30° (slats at 20° and flaps at 30°), to gain access to the resolvers.

WARNING: ON AIRCRAFT PRE SB 700-24-045, MAKE SURE YOU DO NOT SET THE EMS CDU CIRCUIT BREAKERS TO 'LOCK'. IF YOU DO THIS AND YOU APPLY ELECTRICAL POWER, THE CIRCUIT BREAKERS WILL AUTOMATICALLY BE SET TO THEIR ORIGINAL POSITION. THIS WILL PUT THE AIRCRAFT IN A DANGEROUS CONDITION FOR MAINTENANCE.

- (3) For aircraft pre SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to ON and on the Electrical Management System (EMS) Control Display Unit (CDU), installed on the pilot's and co-pilot's side panel, set the circuit breakers that follow to OUT:

SYSTEM NAME	CIRCUIT BREAKER NAME	BUS NAME
FLT CTRL	SLAT/FLAP CTRL 1	BATT
FLT CTRL	SLAT/FLAP CTRL 2	DC ESS

Appendix 1

- (4) For aircraft post SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to EMS and on the pilot's and co-pilot's EMS CDU, set the circuit breakers in the previous table to LOCKED.

NOTE: All other electrical power must be removed from the aircraft to set circuit breakers to LOCKED.

- (5) For aircraft pre SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to OFF.

WARNING: ON AIRCRAFT POST SB 700-24-045, AFTER THE CIRCUIT BREAKERS ARE SET TO LOCKED, MAKE SURE TO SET THE BATT MASTER SWITCH TO ON BEFORE IT IS SET TO OFF. IF THE BATT MASTER SWITCH IS SET TO OFF FIRST, THE CIRCUIT BREAKERS WILL NOT STAY IN THE LOCKED POSITION. THIS WILL PUT THE AIRCRAFT IN A DANGEROUS CONDITION FOR MAINTENANCE.

- (6) For aircraft post SB 700-24-045, on the ELECTRICAL control panel, set the BATT MASTER switch to ON, and then to OFF.

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

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

- (8) Remove the leading edge access panels that follow:

Access Panel	TASK
511QB and 611QB	57-41-13-000-801
540EL and 640EL	57-41-05-000-802

NOTE: Replacement hardware may be required for damaged screws.

- (9) Remove the external avionics-compartment access panel 140BB. Refer to TASK 52-45-11-000-801.
- (10) Remove the SFCU. Refer to TASK 27-51-05-000-801.

Appendix 1

E. Bonding Check

NOTE: Refer to the table in paragraph 2.A. for the required bonding check results, and then record the measured results.

- (1) Use a milliohmmeter and measure the resistance value from an airframe ground to:
 - The SFCU racks, and
 - The slat/flap resolvers.
- (2) If required, repair to get the necessary readings. Refer to TASK 51-80-00-140-801.

F. Resolver Check

CAUTION: BE CAREFUL TO AVOID DAMAGING CONNECTOR PINS IN THE FOLLOWING STEPS. CHECK CONNECTOR PIN LOCKING MECHANICAL INTEGRITY AS CONTINUITY CHECKS ARE BEING MADE. ALSO, NOTE NOMINAL PIN/SOCKET FRICTION (RETENTION) FORCE AS EACH PIN IS CHECKED.

- (1) Do a general visual inspection for each resolver as follows:
 - (a) Check physical integrity of connections at SFCU avionics bay racks for damaged or unlocked pins, FOD, loose, broken or chafed wires, etc.
 - (b) Check physical tightness of resolver connections, backshells and strain relief.
 - (c) Disconnect resolver lead wire connectors, MT67P/J1, MT72P/J1, MT77P/J1 and MT78P/J1 and check for damaged/unlocked pins, corrosion, and/or damaged wires. Check resolver leadwire from connector to where leadwire enters resolver for excessive bends, strain or twisting on the harness. Check leadwire connector strain relief for possible twisted, pinched, pulled or chafed wires inside the connector, especially if backshell is found loose. Inspect airframe clamps, chafe protection and bundle ties used to secure leadwires for correct installation practices.
 - (d) If required, repair as necessary.
 - (e) Reconnect resolver lead wire connectors MT67P/J1, MT72P/J1, MT77P/J1 and MT78P/J1.
- (2) Refer to the table in paragraph 2.A. for the required continuity/resistance check results, and then record the measured results.
- (3) Do the SFCU/Resolver pin-to-pin continuity and coil resistance checks.
- (4) Do the SFCU/Resolver open circuit continuity checks.
- (5) If required, repair to get the necessary readings.

Appendix 1

- (6) Do the resolver insulation resistance test at 400V maximum as follows:
- (a) Use a megohmmeter:
 - (b) Perform the test with lead wire harness stationary and also gently flexed.
 - (c) Measure from the resolver bonding wire (airframe ground) to each pin of the resolver connectors MT67P1, MT72P1, MT77P1 and MT78P1.
- (7) If necessary, replace the resolver(s) to correct discrepancies. Refer to the table below for the applicable TASKs:

RESOLVER	TASKS
Flap Resolvers	57-41-13-000-801 / 57-41-13-400-801
Slat Resolvers	57-41-05-000-802 / 57-41-05-400-802

G. Testing

- (1) Reconnect resolver connectors, MT67J1, MT72J1, MT77J1 and MT78J1 to airframe connectors, MT67P1, MT72P1, MT77P1 and MT78P1.
- (2) Install the leading edge access panels that follow:

Access Panel	TASK
511QB and 611QB	57-41-13-400-801
540EL and 640EL	57-41-05-400-802

NOTE: Do not apply sealant until after final operational test is done.

- (3) Install the SFCU. Refer to TASK 27-51-05-400-801.
- (4) Do the operational test of the slat/flap control system. Refer to TASK 27-51-00-710-801.

H. Close-out

- (1) Apply sealant to access panels: 540EL, 640EL, 511QB and 611QB.
- (2) Install the external avionics-compartment access panel 140BB. Refer to TASK 52-45-11-400-801.
- (3) On the center pedestal, set the SLAT/FLAP control lever to IN/0°.

Appendix 1

2. TABLES

A. Test Requirements/Results

(1) Bonding checks:

UNIT	SPECIFICATION	RESULT
L/H Flap Resolver, MT67	≤0.010 ohms	
R/H Flap Resolver, MT72	≤0.010 ohms	
L/H Slat Resolver, MT77	≤0.010 ohms	
R/H Slat Resolver, MT78	≤0.010 ohms	
SFCU No. 1 Rack	≤0.0075 ohms	
SFCU No. 2 Rack	≤0.0075 ohms	

(2) SFCU/Resolver pin-to-pin continuity and coil resistance checks:

(a) L/H flap resolver checks:

FROM	TO	COIL – NOMINAL VALUE	RESULT
SFCU No. 1 AP1 PIN 96	SFCU No. 1 AP1 PIN 95	R1/R2 - between 134 to 220 ohms	
SFCU No. 1 AP1 PIN 93	SFCU No. 1 AP1 PIN 92	S1/S2 – between 13 to 24 ohms	
SFCU No. 1 AP1 PIN 106	SFCU No. 1 AP1 PIN 105	S3/S4 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 96	SFCU No. 2 AP1 PIN 95	R1/R2 – between 134 to 220 ohms	
SFCU No. 2 AP1 PIN 93	SFCU No. 2 AP1 PIN 92	S1/S2 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 106	SFCU No. 2 AP1 PIN 105	S3/S4 – between 13 to 24 ohms	

Appendix 1

(b) R/H flap resolver checks:

FROM	TO	COIL – NOMINAL VALUE	RESULT
SFCU No. 1 AP1 PIN 82	SFCU No. 1 AP1 PIN 81	R1/R2 - between 134 to 220 ohms	
SFCU No. 1 AP1 PIN 87	SFCU No. 1 AP1 PIN 88	S1/S2 – between 13 to 24 ohms	
SFCU No. 1 AP1 PIN 101	SFCU No. 1 AP1 PIN 100	S3/S4 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 82	SFCU No. 2 AP1 PIN 81	R1/R2 – between 134 to 220 ohms	
SFCU No. 2 AP1 PIN 87	SFCU No. 2 AP1 PIN 88	S1/S2 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 101	SFCU No. 2 AP1 PIN 100	S3/S4 – between 13 to 24 ohms	

(c) L/H Slat resolver checks:

FROM	TO	COIL – NOMINAL VALUE	RESULT
SFCU No. 1 AP1 PIN 2	SFCU No. 1 AP1 PIN 1	R1/R2 - between 134 to 220 ohms	
SFCU No. 1 AP1 PIN 33	SFCU No. 1 AP1 PIN 34	S1/S2 – between 13 to 24 ohms	
SFCU No. 1 AP1 PIN 47	SFCU No. 1 AP1 PIN 46	S3/S4 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 2	SFCU No. 2 AP1 PIN 1	R1/R2 – between 134 to 220 ohms	
SFCU No. 2 AP1 PIN 33	SFCU No. 2 AP1 PIN 34	S1/S2 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 47	SFCU No. 2 AP1 PIN 46	S3/S4 – between 13 to 24 ohms	

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MODEL BD-700-1A10

Appendix 1

(d) R/H slat resolver checks:

FROM	TO	COIL – NOMINAL VALUE	RESULT
SFCU No. 1 AP1 PIN 14	SFCU No. 1 AP1 PIN 13	R1/R2 – between 134 to 220 ohms	
SFCU No. 1 AP1 PIN 36	SFCU No. 1 AP1 PIN 37	S1/S2 – between 13 to 24 ohms	
SFCU No. 1 AP1 PIN 50	SFCU No. 1 AP1 PIN 49	S3/S4 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 14	SFCU No. 2 AP1 PIN 13	R1/R2 – between 134 to 220 ohms	
SFCU No. 2 AP1 PIN 36	SFCU No. 2 AP1 PIN 37	S1/S2 – between 13 to 24 ohms	
SFCU No. 2 AP1 PIN 50	SFCU No. 2 AP1 PIN 49	S3/S4 – between 13 to 24 ohms	

(3) SFCU/resolver open circuit continuity checks:

(a) Flap resolvers:

FROM	TO	CHECKS RESOLVER	RESULT
SFCU No. 1 AP1 PIN 95	-SFCU No. 1 AP1 PINS 93, 106 -SFCU No. 2 AP1 PINS 93, 96, 106 & Airframe Ground	L/H Flap, Pin 2	
SFCU No. 1 AP1 PIN 105	-SFCU No. 1 AP1 PIN 93 -SFCU No. 2 AP1 PINS 93, 96, 106 & Airframe Ground	L/H Flap, Pin 4	
SFCU No. 1 AP1 PIN 92	-SFCU No. 2 AP1 PINS 93, 96, 106 & Airframe Ground	L/H Flap, Pin 6	

Appendix 1

FROM	TO	CHECKS RESOLVER	RESULT
SFCU No. 2 AP1 PIN 95	-SFCU No. 2 AP1 PINS 93, 106 & Airframe Ground	L/H Flap, Pin 8	
SFCU No. 2 AP1 PIN 105	-SFCU No. 2 AP1 PIN 93 & Airframe Ground	L/H Flap, Pin 10	
SFCU No. 1 AP1 PIN 81	-SFCU No. 1 AP1 PINS 87, 101 -SFCU No. 2 AP1 PINS 82, 87, 101 & Airframe Ground	R/H Flap, Pin 2	
SFCU No. 1 AP1 PIN 100	-SFCU No. 1 AP1 PIN 87 -SFCU No. 2 AP1 PINS 82, 87, 101 & Airframe Ground	R/H Flap, Pin 4	
SFCU No. 1 AP1 PIN 88	-SFCU No. 2 AP1 PINS 82, 87, 101 & Airframe Ground	R/H Flap, Pin 6	
SFCU No. 2 AP1 PIN 81	-SFCU No. 2 AP1 PINS 87, 101 & Airframe Ground	R/H Flap, Pin 8	
SFCU No. 2 AP1 PIN 100	-SFCU No. 2 AP1 PIN 87 & Airframe Ground	R/H Flap, Pin 10	

Appendix 1

(d) Slat Resolvers

FROM	TO	CHECKS RESOLVER	RESULT
SFCU No. 1 AP1 PIN 1	-SFCU No. 1 AP1 PINS 33, 47 -SFCU No. 2 AP1 PINS 2, 33, 47 & Airframe Ground	L/H Slat, Pin 2	
SFCU No. 1 AP1 PIN 46	-SFCU No. 1 AP1 PIN 33 -SFCU No. 2 AP1 PINS 2, 33, 47 & Airframe Ground	L/H Slat, Pin 4	
SFCU No. 1 AP1 PIN 34	-SFCU No. 2 AP1 PINS 2, 33, 47 & Airframe Ground	L/H Slat, Pin 6	
SFCU No. 2 AP1 PIN 1	-SFCU No. 2 AP1 PINS 33, 47 & Airframe Ground	L/H Slat, Pin 8	
SFCU No. 2 AP1 PIN 46	-SFCU No. 2 AP1 PIN 33 & Airframe Ground	L/H Slat, Pin 10	
SFCU No. 1 AP1 PIN 13	-SFCU No. 1 AP1 PINS 36, 50 -SFCU No. 2 AP1 PINS 14, 36, 50 & Airframe Ground	R/H Slat, Pin 2	
SFCU No. 1 AP1 PIN 100	-SFCU No. 1 AP1 PIN 36 -SFCU No. 2 AP1 PINS 14, 36, 50 & Airframe Ground	R/H Slat, Pin 4	
SFCU No. 1 AP1 PIN 88	-SFCU No. 2 AP1 PINS 14, 36, 50 & Airframe Ground	R/H Slat, Pin 6	
SFCU No. 2 AP1 PIN 81	-SFCU No. 2 AP1 PINS 36, 50 & Airframe Ground	R/H Slat, Pin 8	
SFCU No. 2 AP1 PIN 100	-SFCU No. 2 AP1 PIN 36 & Airframe Ground	R/H Slat, Pin 10	

Appendix 1

- (4) Resolver insulation resistance test at 400V max: megger from airframe ground to each pin 1 through 10 individually on the resolver connector:

CONNECTOR	Expected Result: (∞)
L/H Flap Resolver, MT67 P1	
R/H Flap Resolver, MT72 P1	
L/H Slat Resolver, MT77 P1	
R/H Slat Resolver, MT78 P1	

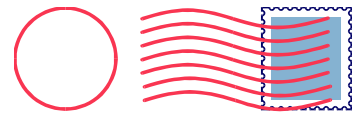
SERVICE BULLETIN EVALUATION FORM
(YOUR IDEAS WILL HELP US PROVIDE BETTER BULLETINS)

SERVICE BULLETIN <u>700-27-045</u>	ISSUE: <u>Revision 01</u>	DATED: <u>Mar 31/2004</u>
TITLE: Special Check/Modification – Control and Indication Systems – Slat/Flap Resolver Check and Slat/Flap Control Unit (SFCU) Upgrade to GT415-5900-13		

- | | POOR | FAIR | GOOD | VERY GOOD | EXCELLENT |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <ul style="list-style-type: none"> • How easy is the bulletin to understand?
Comments: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <ul style="list-style-type: none"> • Does the bulletin tell you all you need to know about the job?
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TELEPHONE: (514) 855-5000, ext.: 50628	AIRCRAFT SERIAL NO.: _____
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NOTE: For configuration control purposes, please fill out one form for each Service Bulletin.

Service Bulletin Number	Status	* Parts Completed	Further Action Required	
			YES	NO
700-27-045	Rev. 01	-	<input type="checkbox"/>	<input type="checkbox"/>
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>

* **NOTES:**

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	<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 _____	
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