

Project No: **BDHRN002**Job Card No **0040**

Notif.No.: 10049116

Activity: **1003**

Rev No: 20000622

Model.: F900EX

Sheet 1 of 1

A/C Regn: **D-AHRN**

Serial No.: 096

Type: F900EX

Starting Phase: Inspect

Starting Work Centre: MTX AVIO DEPT

Job Description: Check Engine Cowling Electrical Bonding

ETOPS A/C: No

RVSM A/C: No

Warranty: -

ATA: 54

Check Type: 2A+ Inspection

Work Center	
MTX AVIO DEPT	

Zone: 300,400**Access Required for this task:**

311AR

Corrective Action

0001	Task carried out in accordance with the attached Customer Card that quotes the Operator code detailed below.					 Order: 80069282 Operation: 0010 Phase: Inspect - scheduling activity Work Center: MTX AVIO DEPT
	Accomplished		Inspected			
	Pers. No.	Date	Pers. No.	Date		
	Stamp		Stamp			

Completed & Confirmed on SAP IAW MOE 2.13.

Defect Card Raised

Components Removed/Installed

	Part Number	Part Name	S/N	Location	Comm. Off/On
OFF					
ON					
OFF					
ON					
OFF					
ON					
OFF					
ON					

Occurance Report Raised? YES ☐

Operations Above & Notifications Completed IAW MOE 2.13.

OEM Code: 54-11-00-760-801

Operator Code: 54-11-00-760-801-01

Form No: JA-SAP-MTX-002

Printed by: ADAMOVIC G



Printed: 03.09.2012

13:34:17

Print No: 1

Operator: **HERON AVIATION**

Work Card No.: **54.080**

Serial No.: **096**

Model: **FALCON 900EX**

PKG # 12 2A+ INSPECTION

Reg No.: **D-AHRN**

Workorder No.: _____

	Date	A/C HRS	AFL	APH			
Due At	25-NOV-2012						
Accomplished							

TECHNICIAN SIGNATURE: _____ KIND OF CERTIFICATE & NO.: _____

INSPECTED BY: _____ KIND OF CERTIFICATE & NO.: _____

TECH	INSP	LABOR-HRS HRS.MINS
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**>54-11-00-760-801- CHECK OF THE ENGINE COWLING ELECTRICAL BONDING
01**

REMARKS : _____

AMM 54-11-00-760-801

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TASK 54-11-00-760-801

CHECK OF THE ENGINE COWLING ELECTRICAL BONDING

1. OVERVIEW OF THE JOB

Operation code: 54-11-00-760-801-01

NOTE: Two operators are required to perform this operation.

2. LOGISTICS

A. References

Reference

• [54-11-01-900-802](#)

• [54-11-09-900-801](#)

Designation

REMOVAL / INSTALLATION OF THE ENGINE 1 AND 3 UPPER AND LOWER COWLINGS

REMOVAL / INSTALLATION OF THE ENGINE 2 COWLINGS

B. Tools and Ground Support Equipment

Reference

• [F7XC202000008](#)

• [TO-20-510](#)

• [TO-10-846](#)

Designation

TOOL BOX

MILLIOHMMETER

MAINTENANCE LADDER

Quantity

C. Ingredients and Consumable Products

Designation

• [ALODINE](#)

• [HOT SECTION SEALANT](#)

• [RESIN ECCOBOND 57](#)

• [WASH PRIMER](#)

• [ANTI-CORROSION PRIMER](#)

• [TOP COAT PU66](#)

• [SCOTCH BRITE](#)

• [CLEANER](#)

• [ADHESIVE TAPE 5F](#)

• [WATER ABRASIVE PAPER](#)

Additional designation

P99

PAC 33

MIL-A-9162

MULTIPURPOSE

D. Additional Spare Parts

Reference

• [FGFB581256221D2](#)

• [FGFB581256223D2](#)

• [FGFB583200017A3](#)

• [21218TB32](#)

Designation

PLATE, CONDUCTOR

PLATE, CONDUCTOR

PLATE, BONDING

RIVET

Quantity

Not in IPC

E. Access

Reference

• [311AR](#)

Designation

ELECTRICAL GPU COUPLING DOOR

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3. CHECKS

Refer to **fig. 1**, **fig. 2** and **fig. 3**

NOTE 1: On A/C without SB F900EX-143 , the engine cowlings feature bonding plates.

On A/C with SB F900EX-143 , engine cowling bonding is ensured as follows:

- engines 1 and 3 cowlings feature bonding plates,
- engine 2 cowlings feature single-piece long bonding strips.

NOTE 2: The engine protection against lightning is increased by tin lining the inner side of the cowlings to improve electrical bonding continuity with the surrounding structure.

A. Checks with cowlings on aircraft.

NOTE: Perform the checks with cowlings closed.

Perform bonding measurements between each engine cowling (engine 1/ 3 and 2 cowlings) and the aircraft.

(1) Make sure to place:

- the milliohmmeter positive probe on the venting louvers, drain mast, or locking hook attachment,
- the negative probe on terminal (-) of the ground power receptacle (**1PG**), (**311AR**).

(2) Record the bonding value.

This value should be: $R \leq 200 \text{ m}\Omega$.

(3) If this check is successful, do not perform the checks with cowlings removed.

(4) If this check fails, perform the checks with cowlings removed (see Para. "Checks with cowlings removed from aircraft and installed on workbench").

B. Checks with cowlings removed from aircraft and installed on workbench.

(1) Remove the cowlings from engine 1 and 3, and from engine 2 (Refer to **TASK 54-11-01-900-802**) and (Refer to **TASK 54-11-09-900-801**).

(2) Thoroughly check the electrical bonding plates for aspect, condition, attachment, and adherence.

Clean with **cleaner** the surface of each bonding plate using **scotch brite**.

On each bonding plate, check that there is a corresponding spring contact blade mark.

If pierced at the contact mark, replace the bonding plate and reshape the corresponding spring contact blade so it does not press too much the plate.

(3) Replace poor-condition bonding plates (see Para. "Replacement of electrical bonding plates").

(4) On A/C with SB F900EX-143 , thoroughly check engine 2 cowling bonding strips for aspect, condition, attachment, adherence.

Check each bonding strip for corresponding spring contact blade marks.

Using **scotch brite** clean bonding strip areas against which the spring contact blades apply.

(5) Check the lateral spring contact blades located near the air intake and rear cowling.

Check for condition, cleanliness, absence of cracks, elasticity.

Clean the surface of each spring contact blade with **scotch brite**.

(6) Measure the electrical continuity on engine cowlings.

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- (a) Engine 1, 3 and 2 cowlings featuring bonding plates
 - 1 Taking a bonding plate at the front of the cowling as a reference, measure the resistance between the reference plate and every other plate.
 - 2 Select a reference plate at the rear of the cowling and repeat the measurements.
The maximum admissible value is 200 mΩ.
Record the measured values.
NOTE: If the measured values are out of tolerance, replace the defective bonding plates.
- (b) Engine 2 cowlings featuring long single-piece bonding strips (A/C with SB F900EX-143)
 - 1 Measure the electrical resistance between each bonding strip (at the protection reserve located at each spring contact blade) and the upper ventilation louver.
The maximum admissible value is 200 mΩ.
Record measured values.
- (7) Reinstall and close the engine 1, 3 and 2 cowlings (Refer to **TASK 54-11-01-900-802**) and (Refer to **TASK 54-11-09-900-801**).
- (8) Repeat the checks with cowlings closed (see paragraph 3.A. "Checks with cowlings on aircraft").

4. REPLACEMENT OF ELECTRICAL BONDING PLATES

Refer to **fig. 1** and **fig. 2**

A. Replacement of the engine 1 and 3 cowling electrical bonding plates

The electrical bonding plates are secured on engine 1 and 3 cowlings with rivets.

- (1) Remove the rivets securing the electrical bonding plate on the engine cowling to remove the electrical bonding plate.
- (2) Using **cleaner** clean the tin lining surface which is to accommodate the new electrical bonding plate.
- (3) Protect the electrical bonding plate surface coming into contact with the engine cowling, using **alodine**.
- (4) Rivet the electrical bonding plate, (see SRM, (Refer to **SRM 51-40-04**)).
- (5) Apply a **hot section sealant** bead around the edge of the electrical bonding plate.
- (6) Measure the electrical continuity between repaired bonding plates and a reference plate located at the front or the rear of the cowling.
The maximum admissible value is 200 milliohms.

B. Replacement of engine 2 cowling electrical bonding plates (A/C without SB F900EX-143)

- (1) Using **cleaner**, thoroughly degrease a large area around the separating plate.
NOTE: It is essential to remove all traces of grease to ensure long term adherence.
- (2) Remove the defective bonding plate by lifting one of its corners with a metal blade.
NOTE: Disengage the plate with care to avoid damaging the tin lining to which the strip is bonded.
- (3) The bonding plate may separate in any of the three following manners:
 - separation of plate from conductive adhesive (1st case),
 - separation of conductive adhesive from tin lining (2nd case),

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- separation of conductive adhesive from tin lining damaged in the process (3rd case).
- (4) Installation of a bonding plate on original conductive adhesive (to correct 1st case of separation)
- (a) Preparation of bonding surface
- Remove surface roughness (beads of adhesive around the separated plate) by scraping with a metal blade.
NOTE: Take all required precautions to avoid damaging the tin lining.
 - Rub the entire bonding surface with **water abrasive paper** (80-grit) until partially uncovering the tin lining (shiny clear gray color).
NOTE: The tin lining will not show even. Avoid damaging it by sanding too much.
 - Degrease the plate with a cloth moistened with **cleaner**.
- (b) Using **adhesive tape 5F**, delineate the bonding surface corresponding to the plate surface + 2 mm (0.08 in.) all round.
- (c) Degrease the strip with a cloth moistened with **cleaner**.
- (d) Prepare a mixture consisting of an equal volume of the two components of **resin ECCOBOND 57**.
NOTE: The **resin ECCOBOND 57** may be thinned down in the proportion of 1.8 g (0.06 oz) **cleaner** for 26 g (0.92 oz) adhesive. The adhesive is to be applied 15 minutes after thinning. The curing time of the mixture is 36 hours at 25°C (77°F).
- (e) Apply the adhesive to the cowl surface receiving the bonding plate. Apply the plate and spread the adhesive to the periphery of the plate by tightening the assembly in a clamp which is to be left in place until the adhesive is completely cured (8 hours mini at 25°C (77°F) with unthinned adhesive).
- (f) Allow the adhesive to cure, and then apply a bead of **hot section sealant** to the periphery of the plate.
- (g) Measure the continuity between repaired bonding plates and a reference plate located at the front or the rear of the cowl.
The maximum admissible value is 200 milliohms.
- (5) Installation of a bonding plate onto the tin lining (to correct 2nd case)
Installation principle and method are identical to preceding case (see 1st case of separation).
- (6) Installation of a bonding plate onto damaged tin lining (to correct 3rd case)
NOTE: This procedure applies if the tin lining is damaged over an area less than or equal to 10 mm (0.4 in.) around the bonding plate. If otherwise, send the cowl to a specialized workshop.
- (a) Preparation of bonding surface
The bonding surface includes the bonding plate area plus 10 mm (0.4 in.) around it.
- Using a metal blade, scrape off surface roughness and paint, up to 10 mm (0.4 in.) from the plate bonding surface.
 - Rub the entire bonding surface with **water abrasive paper** (80-grit) until partially uncovering the tin lining (shiny clear gray color).
NOTE: The tin lining will not show even. Avoid damaging it by sanding too much.
 - Clean the bonding surface with a cloth moistened with **cleaner**.
- (b) Degrease the plate with a cloth moistened with **cleaner**.

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- (c) Prepare a mixture consisting of an equal volume of the two components of **resin ECCOBOND 57**.

NOTE: The **resin ECCOBOND 57** may be thinned down in the proportion of 1.8 g (0.06 oz) **cleaner** for 26 g (0.92 oz) adhesive, which is to be applied 15 minutes after thinning. The curing time is 36 hours at 25°C (77°F).

- (d) Apply the adhesive to the cowling surface receiving the plate plus 10 mm (0.4 in.) around it. Apply the bonding plate and spread the adhesive to the periphery of the plate by tightening the assembly in a clamp which is to be left in place until the adhesive is completely cured (8 hours mini at 25°C (77°F) with unthinned adhesive).
- (e) Allow the adhesive to cure, and then apply a bead of **hot section sealant** to the periphery of the plate.
- (f) Apply a complete coat of **top coat PU66 wash primer** + **anti-corrosion primer** (Refer to **TASK 20-60-00-370-803**) to the periphery of the plate.
- (g) Measure the continuity between repaired bonding plates and a reference plate located at the front or the rear of the cowling.
- The maximum admissible value is 200 milliohms.

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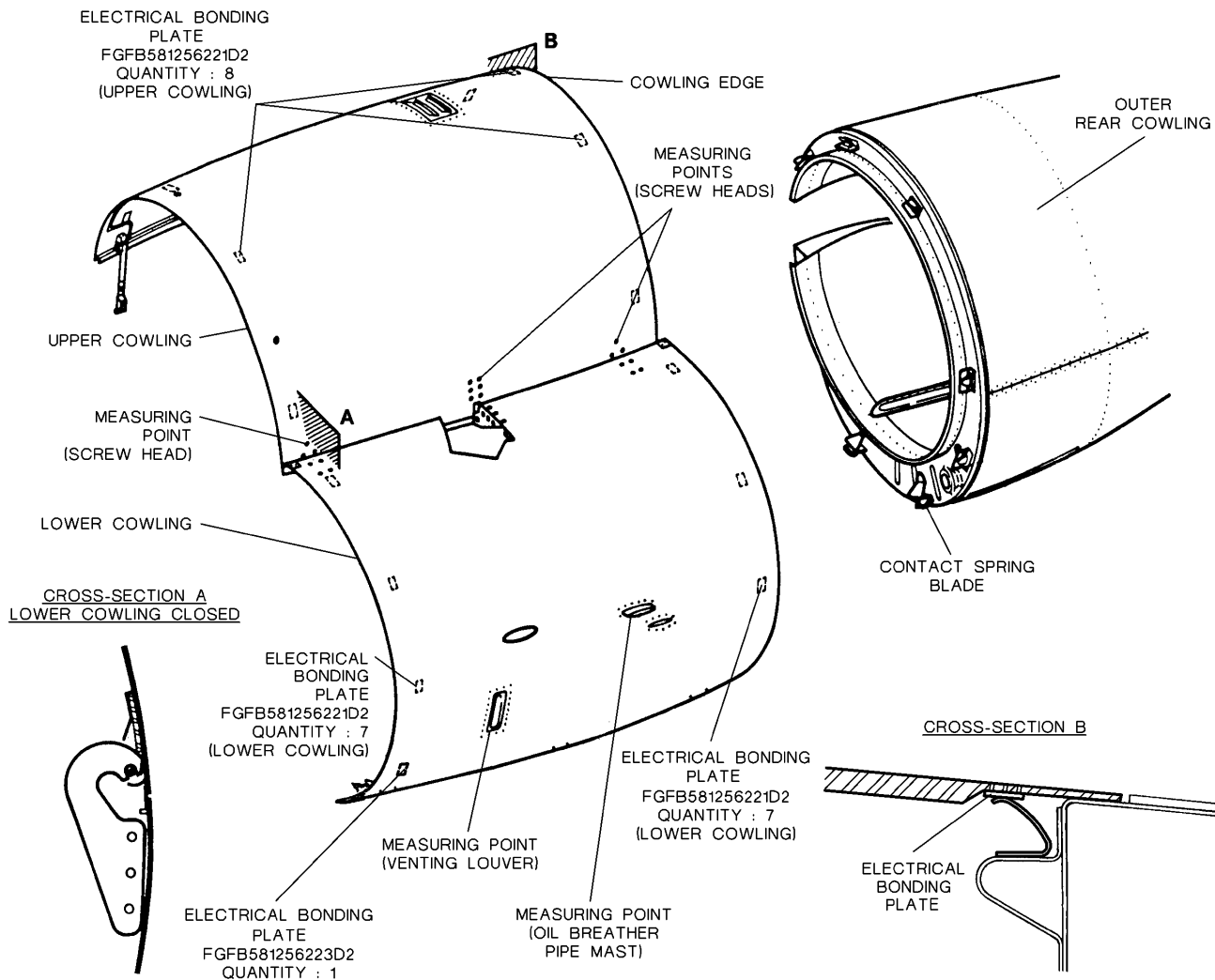


Figure 1: Check/Measurement of Engine 1 and 3 Cowling Electrical Bonding

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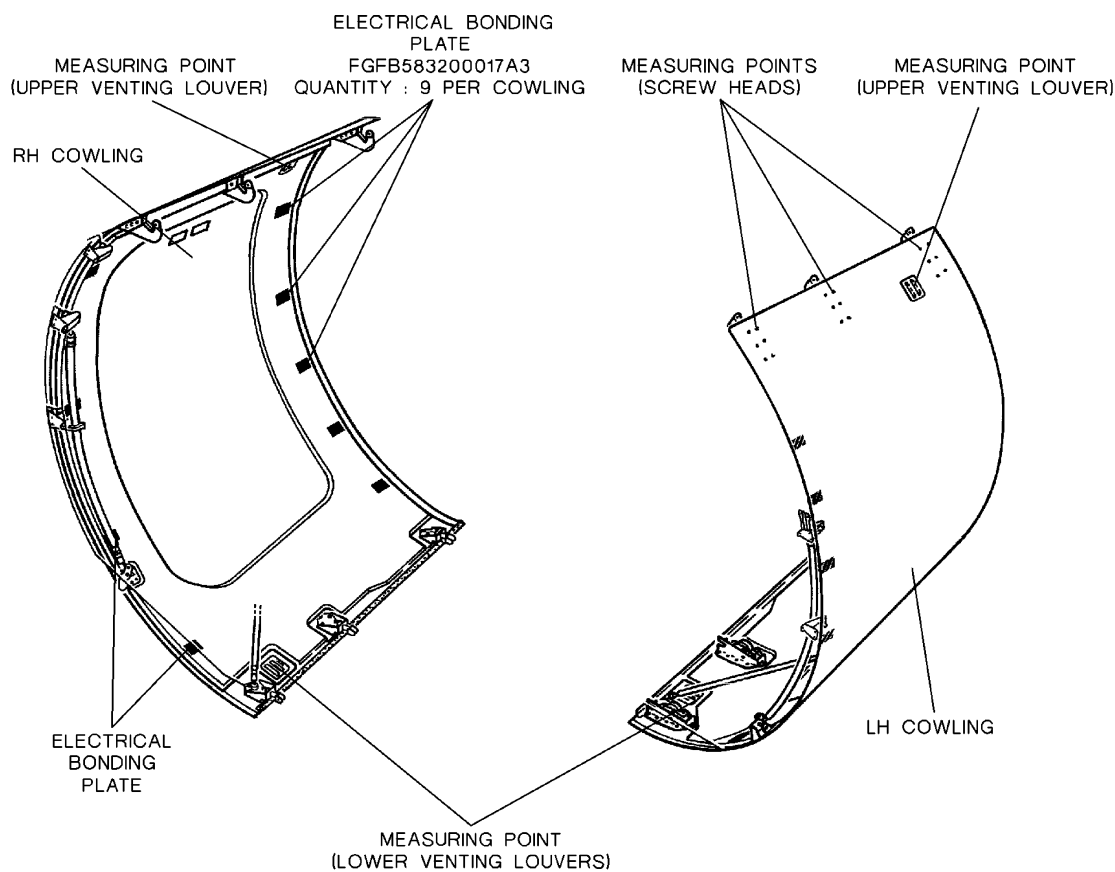


Figure 2: Check/Measurement of Engine 2 Cowling Electrical Bonding (A/C WITHOUT SB F900EX-143)

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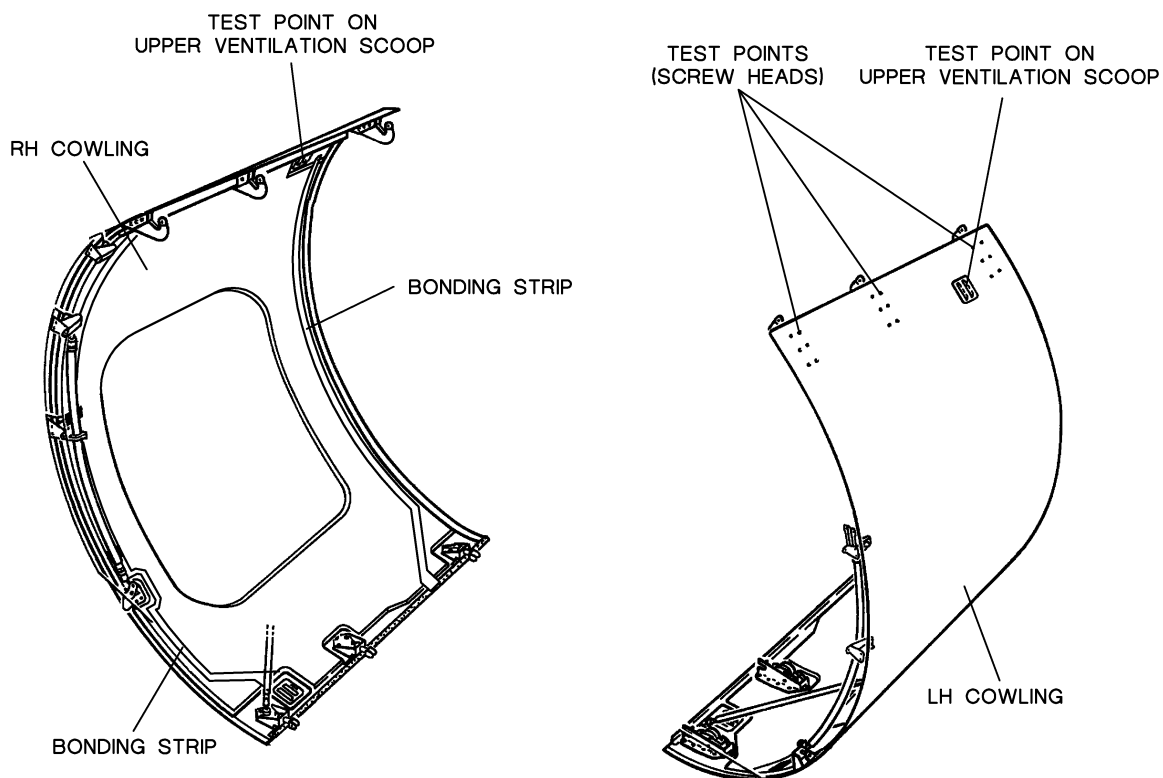


Figure 3: Check/Measurement of Engine 2 Cowling Electrical Bonding (A/C WITH SB F900EX-143)