



SERVICE BULLETIN

No. SB 157

FIVE YEAR FUEL TANK INSPECTION

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LETTER OF TRANSMITTAL COVERING REVISION 7 OF SERVICE BULLETIN SB 157

1. General

This page transmits Revision 7 of SB 157. Revision 7 is a reformat of the SB and includes the addition of T3A aircraft, deletion of kit information, amendment to contact details, change to sealant type 126-51-038 and actions following the finding of deteriorated parts.

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1. PLANNING INFORMATION

A. EFFECTIVITY

- (1) T3A, T67B, T67C Series, T67M, T67M-MkII, T67M200 and T67M260 (Pre and Post Mod M945).

B. CONCURRENT REQUIREMENTS

- (1) Not applicable.

C. REASON

- (1) This Service Bulletin introduces an interior inspection of the integral fuselage tank or wing tanks, at five-year intervals.

D. DESCRIPTION

- (1) This Service Bulletin introduces an interior inspection of the integral fuselage tank or wing tanks, at five-year intervals.

E. COMPLIANCE

- (1) At next annual ^(Note 1) and subsequently every 5 years ^(Note 2).

- NOTE:
1. Not applicable if previous issues of SB 157 have been invoked in the previous 5 years.
 2. If the fuel system is functioning correctly and there are no suspected fuel tank defects, operator may extend the 5 year inspection by up to a maximum of 1 year (i.e. not exceeding 6 years) to ensure a full spares holding to carry out the inspection.

F. APPROVAL

- (1) The design data contained in this document is approved by Marshall Aerospace and Defence Group against EASA.21J.181.

G. MANPOWER

- (1) It is the Operator's responsibility to ensure adequate manpower is available for implementation of this Service Bulletin.

H. WEIGHT AND BALANCE

- (1) No change.

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I. ELECTRICAL LOAD DATA

(1) No change.

J. SOFTWARE ACCOMPLISHMENT SUMMARY

(1) Not applicable.

K. REFERENCES

(1) Aircraft Maintenance Manual.

(2) Aircraft Illustrated Parts Catalogue.

(3) Aircraft Repair Manual.

L. OTHER PUBLICATIONS AFFECTED

(1) None.

M. INTERCHANGEABILITY AND INTERMIXABILITY

(1) Not applicable.

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2. MATERIAL INFORMATION

A. MATERIALS NECESSARY FOR EACH AIRCRAFT

(1) Not applicable.

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3. ACCOMPLISHMENT INSTRUCTIONS

A. MAINTENANCE PRACTICES

- (1) All working processes to be performed by the customer should be performed in accordance with the relevant aircraft Maintenance Manual.
- (2) This Service Bulletin does not take into account any repairs or modifications not previously made known to Marshall ADG or not mentioned in any documents provided to Marshall ADG. Any deviation from the standard configuration may require a revision to the instructions or documents given in this Service Bulletin.

B. PREPARATION AND GENERAL

- (1) Not applicable.

C. ACTION

- (1) Gain access to the fuel tanks in accordance with the relevant aircraft Maintenance Manual. Remove lower access panel, where applicable, in accordance with the relevant aircraft Maintenance Manual. For removal of the upper access panel proceed as follows:
 - (a) This paragraph is not applicable to the fuselage tank access panel. Carefully remove the Annular Vinyl Ring using a warm air gun. Do not over heat wing skin, i.e. touch warm.
 - (b) Carefully remove paint, filler and sealant from around joint plus paint and filler from 12 off wing panel retaining screws or 22 off for the fuselage fuel tank panel.
 - (c) Remove screws.
 - (d) Carefully prise panel/s from wing skin or fuselage and sealant.
 - (e) Clean panel/s and wing skin or fuselage recesses removing excess “brown” sealant and filler. Ensure panel and wing or fuselage skin panel seating have not been damaged. Do not damage the panel sealant. Ensure access panel bonding strip is exposed, Figure 2 refers.
- (2) Inspect internally the tank/s for general condition, loose and peeling sealant. Flop tubes for hose clip tightness, correct location of flop tube spring, no distortion to spring, flexibility of Tygon tube and no damage to the flop tube. Avoid removing flop tubes.
- (3) Inspect for accumulation of sediment especially at drain valves and rib areas. Remove sediment.
- (4) Ensure correct operation of non-return valve/filter assembly, fuel drain and fuel level sender.

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- (5) Ensure correct operation of flapper valves. Ensure seals on flapper valves have not deteriorated, are not de-bonded, hard or sufficiently deformed to allow incorrect seating. If any of these conditions are found, replace parts as required.
- (6) Check seals on Baffle plates - T67M fuselage tank. If seals are deteriorated, replace parts as required.
- (7) This paragraph is not applicable to the following: fuselage-tanked aircraft, T67M-MkII Post Mod M516 aircraft (Works No. 2111, 2116 and subsequent), T67M200 (Works No. 2264 and subsequent) and T67M260 (Works no. 2072, 2234 and subsequent).
 - (a) Ensure wing drain valve is securely fastened into its retaining nut and that retaining nut is securely bonded to wing.
 - (b) Should nut not be bonded to wing, remove drain valve, clean retaining nut and skin surface. Bond nut to wing using adhesive 126-51-060. Ensure there is no adhesive blocking nut castellations or threads. Replace drain valve by using adhesive 126-51-067 (not required if nylon locking strip evident). Ensure adhesive does not contaminate drain mechanism. Torque valve to 50 lb in (5.65 Nm). Re-seal tank surface as required in accordance with the aircraft Maintenance Manual. It is recommended that these drains are not removed from these types of aircraft for the de-fueling process.
- (8) Ensure filters, vent lines and fuel lines are clean and unobstructed.
- (9) Wing Tank Aircraft:
 - (a) Ensure vent line hose clips are correctly positioned Ref Figure 1, Sheet 1 and Sheet 2. If vent line cannot meet dimensions at both ends, then replace vent line with new tube. Ensure the requirements of Service Bulletin SB161 Fuel Tank Vent Pipe Check are met.
- (10) Ensure all rib holes are clean and unobstructed, including holes in collector panels.
- (11) If applicable, ensure correct operation of fuel low-level sensor/warning light.
- (12) Check for fungicidal attack throughout fuel tank assembly.
- (13) Check filler cap adjustment in accordance with relevant aircraft' Maintenance Manual.
- (14) Rectify any faults found.
- (15) Prior to re-assembly ensure tank is free from contamination and foreign objects.
- (16) Reassemble fuel tank internal components and lower access panels (wing tanked aircraft). Ensure relevant items are replaced and sealed in accordance with the relevant aircraft Maintenance Manual. On wing tanked aircraft ENSURE fuel pick-up is correctly positioned, i.e. on top of the baffle. Refer to relevant aircraft Maintenance Manual.

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- (17) Perform Fuel Tank pressure test in accordance with relevant aircraft Maintenance Manual.
- (18) Should resealing be required ensure sealant does not cover Low Fuel Level Sensor (where fitted), Fuel Senders, Drain Valve/s and their outlets, Fuel Outlets, Flop Tube assemblies where fitted, Vent orifices, or Flapper Valves (where fitted). Mask as required; ensure masking is removed when sealant cured.
- (19) Check fuselage sender/gauge calibration as follows, (see paragraph (20) (g) for wing fuel sender):
 - (a) Ensure fuselage datums are set horizontal. Refer to datum leveling in Maintenance Manual, Section 2.
 - (b) If necessary ensure that there is fuel in the pipelines etc. to the level of tank base.
 - (c) Pour in 4.5 litres of fuel T67B and T67C aircraft or 9 litres for T67M aircraft. Check gauge reading is zero (0).
 - (d) If reading is not zero then carefully bend sender arm until reading is zero.
 - (e) Add half a litre of fuel, check for immediate change in fuel gauge reading.
 - (f) Fill tank in 4 gallon steps. Gauge reading to equal quantity contents.

NOTE: Ensure correct units as per marked gauge, i.e. Imperial gallons or US gallons.

- (g) If in doubt at any point contact MADG.
- (20) Replace the fuel filler access panel/s as follows:
 - (a) Check integrity of bonding strap, on the wing or fuselage and access panel.
 - (b) Check that the sealant around the anchor nuts is in good order repair by painting with sealant to class A AMS-S-8802 use 30mm margin around any damage. Ensure end of bonding strip is sealed, refer Figure 4.
 - (c) Check that panel sealant is in good order. If required paint with sealant 126-51-030.
 - (d) Refit access panel/s using sealant to class A AMS-S-8802 or gasket sealant 126-51-031, applied in accordance with Figure 3. Ensure bonding strips are aligned. Use screws 126-21-116, fasten screw at bonding position first, and then diametrically opposite followed by remainder. Torque to 20-25 lb ins before sealant has cured as per previous sequence. Ensure continuous bead of sealant has formed around circumference of panel and that panel is flush or below surface. If below surface, ensure no more than 2mm. It is acceptable for sealant to ooze out at screw positions.
 - (e) Using gloved finger remove bead of sealant (before cured), leaving a curved-bottomed groove. Allow sealant to cure, Figure 4 refers.

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- (f) After sealant has cured, replace filler cap and check tanks for pressure and perform bonding tests, (0.02 ohms or less), in accordance with relevant aircraft Maintenance Manual. Rectify as required.
- (g) Check wing fuel sender/gauge calibration as follows, (see paragraph 19 for fuselage tank):
 - (1) Ensure fuselage datums are set horizontal. Refer to datum leveling in Maintenance Manual, Section 2.
 - (2) Pour two litres of fuel into each tank and ensure that the contents gauges read zero (0). If zero cannot be achieved contact MADG.
 - (3) Add fuel in one gallon ^(Note 1) increments up to 15 gallons ^(Note 2) in each wing tank and read off and record the corresponding gauge readings. Tabulate reading and ensure they are within the specified limits as indicated in the following table. If in doubt contact MADG.

- NOTE:**
- 1. Ensure correct units per marked gauge, i.e. Imperial gallons or US gallons.
 - 2. Note the fuel sender arm float reaches the top of the fuel tank at around 15 gallons, therefore the calibration exercise need not proceed beyond 15 gallons actual fuel contents.

Fuel Tank Contents			Permitted Readings	
Actual	Indicated		Max (gals)	Min (gals)
(gals)	Port (gals)	Stbd (gals)		
2 litres	0	0	0	0
1			1.0	0.5
2			2.0	1.0
3			3.0	1.5
4			4.0	2.5
5			5.0	3.0
6			6.0	4.0
7			7.0	5.0

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Fuel Tank Contents			Permitted Readings	
Actual	Indicated		Max (gals)	Min (gals)
(gals)	Port (gals)	Stbd (gals)		
8			8.0	6.0
9			9.0	7.0
10			10.0	8.0
11			11.0	9.0
12			12.0	10.0
13			14.0	11.0
14			15.0	12.0
15			15.0	13.0

- (h) Perform ground run to purge system and for satisfactory fuel flow. Carry out fuel flow check prior to flight.
- (i) Remove beads of sealant from screw heads and, if necessary, fill screw heads and recessed panel flush, with filler 128-52-052.

NOTE: Remove paint where required before filling.

- (j) At this point for fuselage tanked aircraft, mask area, if required, for painting. Mask groove. Paint in accordance with T67 GRP Repair Manual, paragraph 2.9.4 refers. Continue as paragraphs (20) (n) and (21) and subsequent.
- (k) Once dry remove masking and using lining tape, line edge of groove. Ensure tape is level. Refer Figure 4.
- (l) Fill groove to the level of the tape using acrylic sealant 126-51-039. Allow to cure.
- (m) Remove tape and if necessary, remove excess sealant until flush, using 1500 grade wet and dry.
- (n) Perform Fuel Tank pressure test in accordance with relevant aircraft Maintenance Manual. Should resealing be required ensure sealant does not cover Low Fuel Level Sensor (where fitted), Fuel Senders, Drain Valve/s or Flapper Valves.
- (o) Paint in accordance with T67 GRP Repair Manual, paragraph 2.9.4 refers.

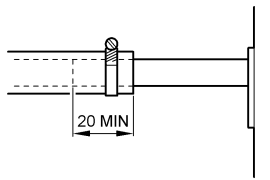
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- (p) Apply new annular rings T67F-00-301 (wing tanked aircraft only).
- (21) Annotate Logbook "SB 157 complied with".
- (22) Repeat paragraphs 1 to 20 every 5 years.
- (23) For aircraft stood down or stored proceed as follows:
 - (a) If aircraft is to be stood down over a long period, then ensure fuel in tank covers fuel sender base. Quantity required for fuselage tanked aircraft is approximately 10 Imp Gal or for wing tank maximum is 10.2 Imp Gal, Minimum 5.6 Imp Gal.
 - (a) If aircraft has been in store for more than 12 months without fuel covering fuel sender base, then tank is to be pressure tested in accordance with the relevant aircraft Maintenance Manual. If the sender leaks then replace sender.

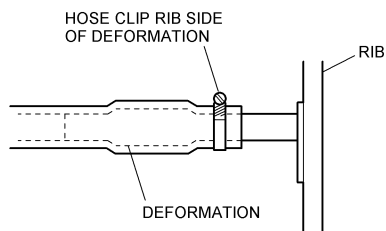
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SB 157-I-001-A

Pre mod M500/M554
(Sheet 1)
FIGURE 1

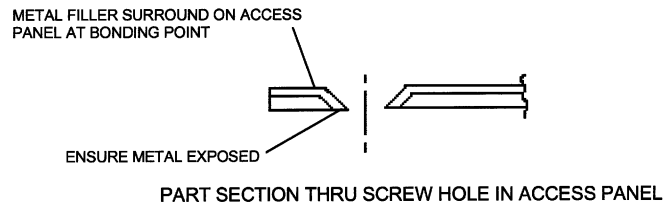


SB 157-I-002-A

Post mod M500/M554
(Sheet 2)
FIGURE 1

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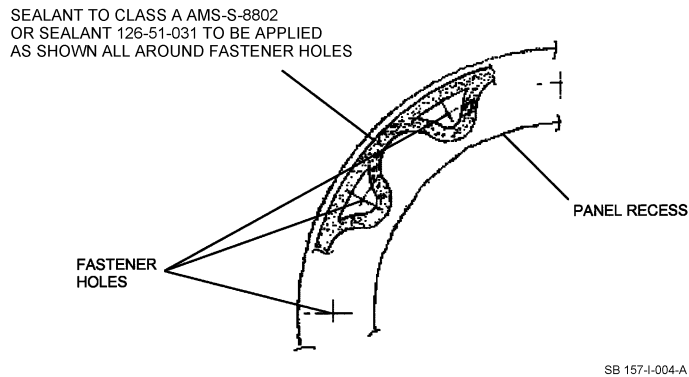


SB 157-I-003-A

Part section through screw hole in access panel
(Sheet 1)
FIGURE 2

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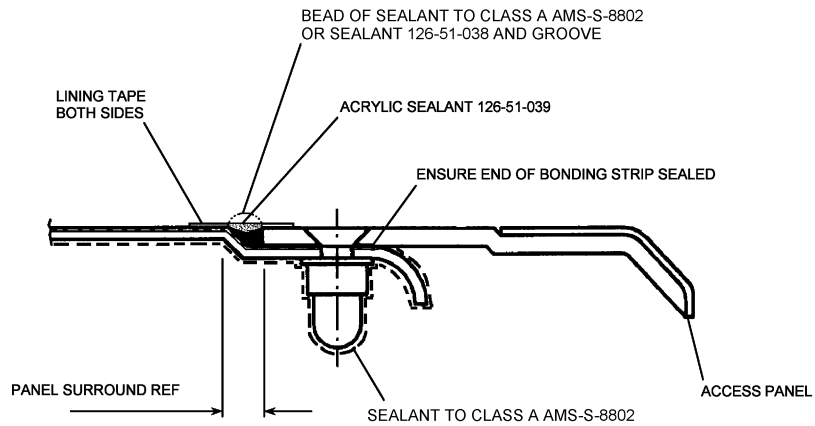
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Panel sealing
(Sheet 1)
FIGURE 3

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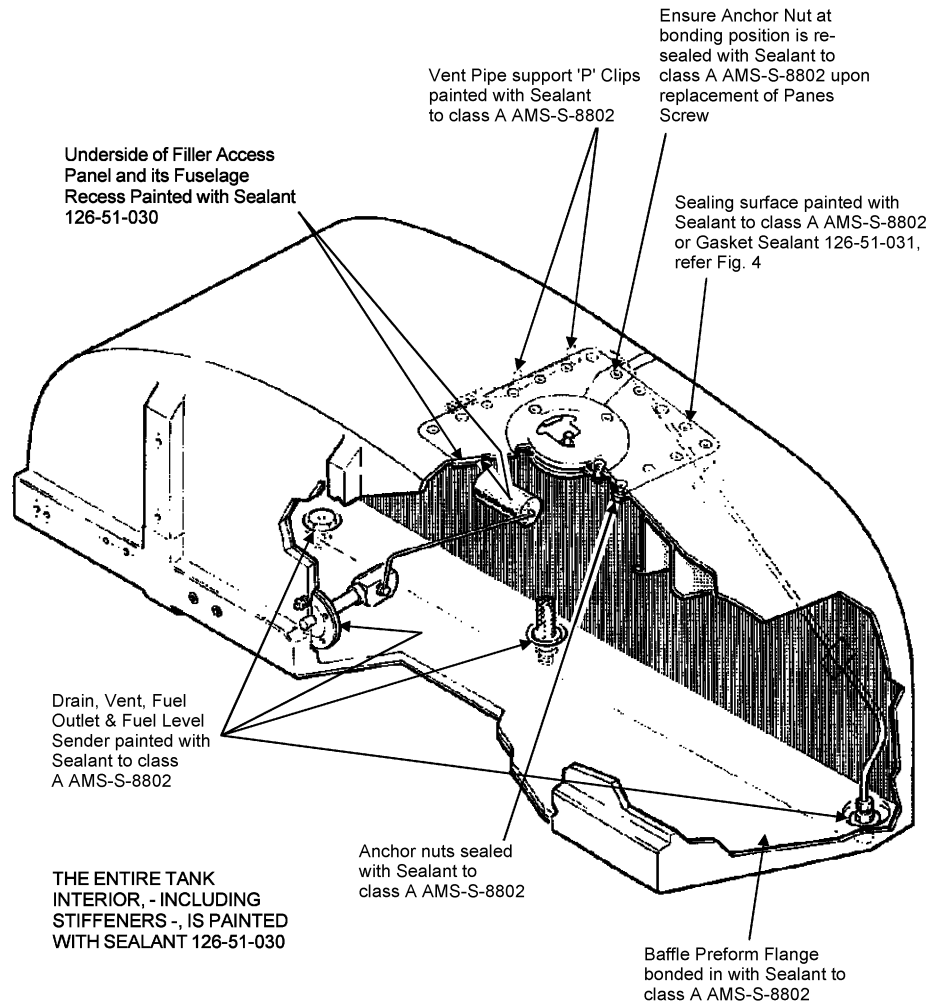


SB 157-I-005-A

Bonding strip sealing
(Sheet 1)
FIGURE 4

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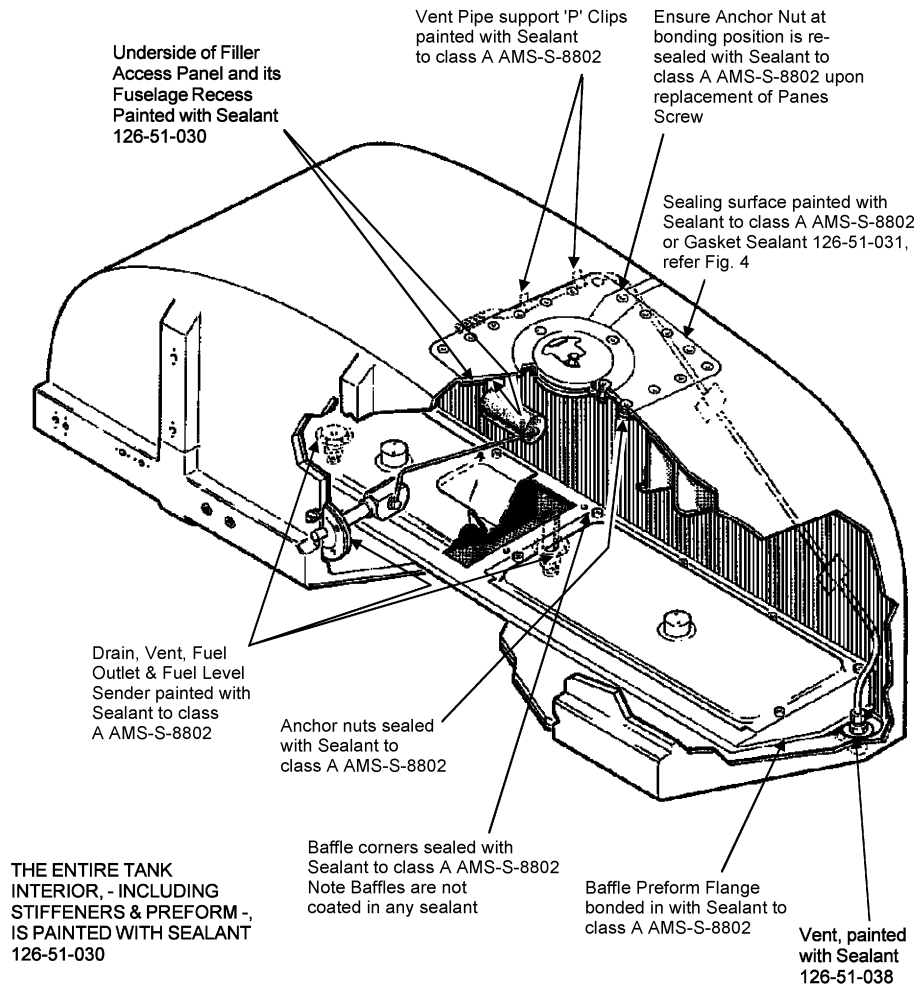


SB 157-I-006-A

Fuselage tank (T67B and T67C pre mod M156)
(Sheet 1)
FIGURE 5

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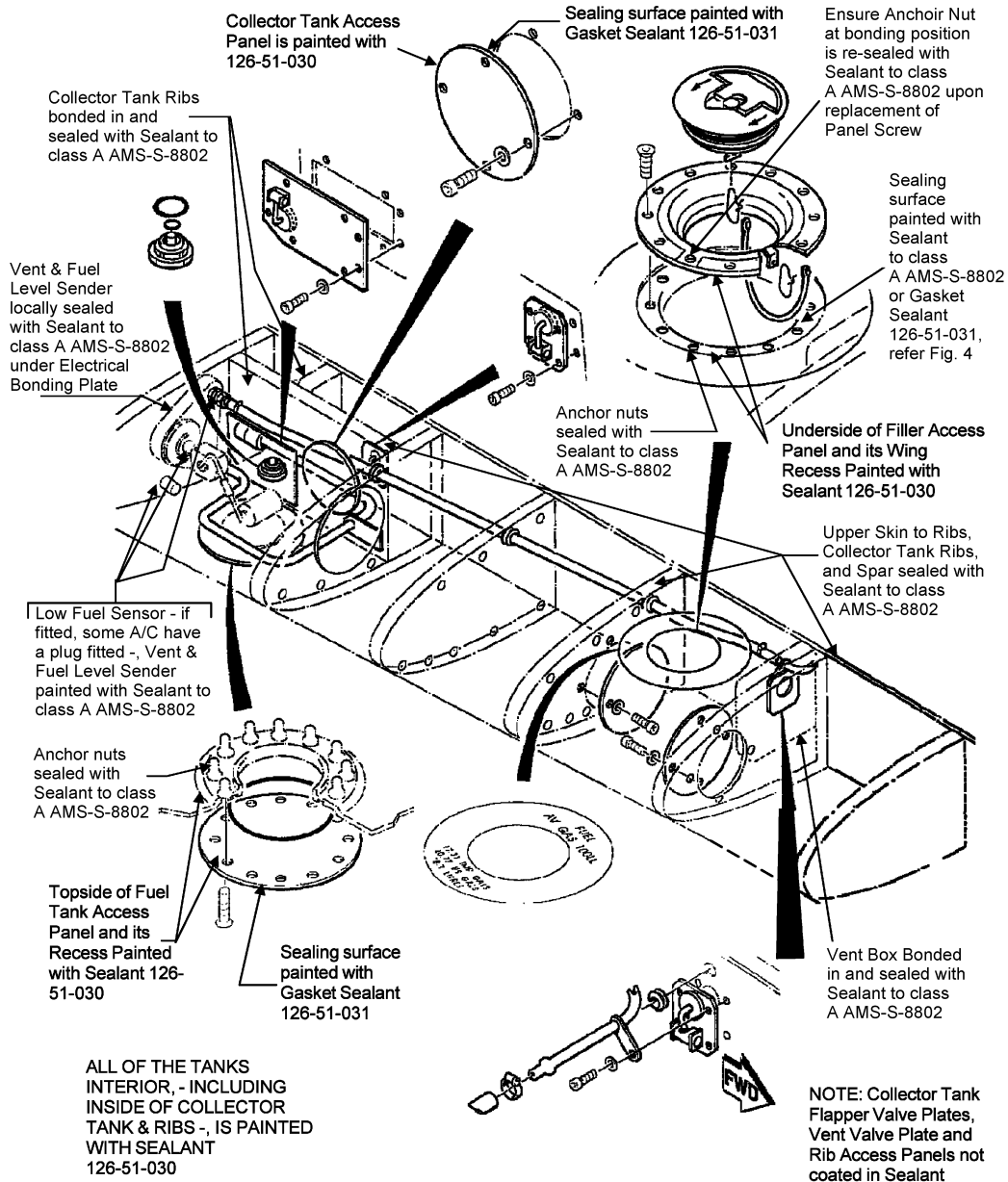


SB 157-I-007-A

Fuselage tank (T67M)
(Sheet 1)
FIGURE 6

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SB 157-I-008-A

Wing fuel tank post mod M156 pre mod M945

(Sheet 1)

FIGURE 7

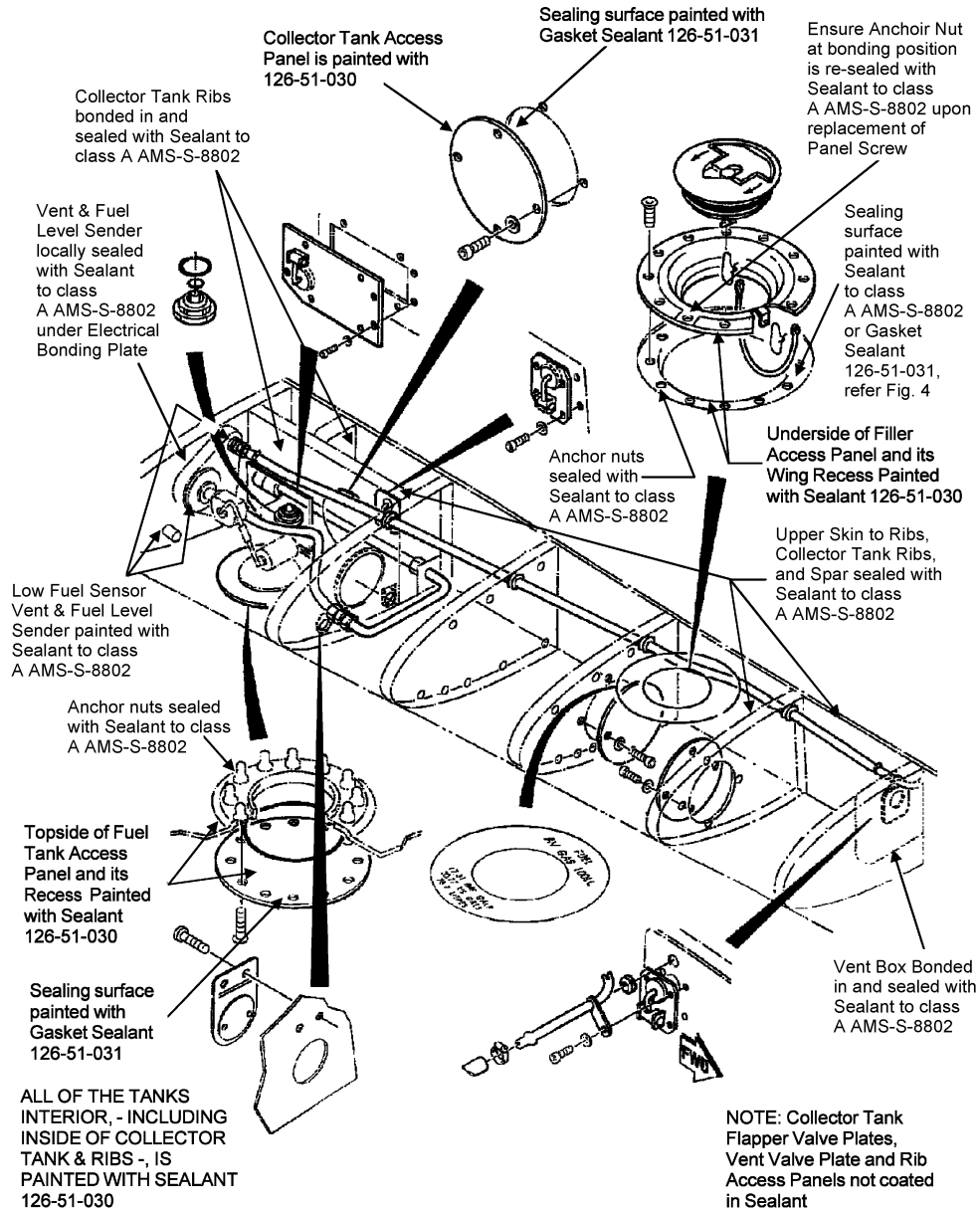
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SB 157-I-009-A

Wing fuel tank post mod M945
(Sheet 1)
FIGURE 8

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D. REASSEMBLY

(1) Refer to Para 20.

E. RE-IDENTIFICATION OF THE UNIT

(1) Not applicable.

F. TEST

(1) Refer to Para 20.

G. CONTACT DETAILS

(1) For any assistance required contact Marshall Aerospace and Defence Group Product Support Department contact details as below:

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