



SERVICE INSTRUCTION

Scoda Aeronáutica Ltda
Estrada Municipal IPN 020 km 0,1
Ipeúna – SP, Brazil.
PHONE: (19) 3576-1292
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www.scodaeronautica.com.br

SI_SPLS_006
Revision 01

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Released Date: April 03rd, 2025
Effective Date: April 11th, 2025

SERVICE INSTRUCTION

SI_SPLS_006

Leakage Repair – Wing Fuel Tank

Application of Notes, Cautions and Warnings

NOTES, CAUTIONS and **WARNINGS** are used in this document to emphasize instructions and information considered to be unusual or critical. A **NOTE, CAUTIONS** and **WARNINGS** may appear in the text either before or after the instruction(s) to which it applies, depending on the relative significance of the information. The conditions that warrant the use of **NOTES, CAUTIONS** and **WARNINGS** are defined below:

WARNING

IDENTIFIES AN INSTRUCTION, WHICH IF NOT FOLLOWED MAY CAUSE SERIOUS INJURY OR EVEN DEATH

CAUTION

Denotes an instruction which if not followed, may severely damage the aircraft or could lead to suspension of warranty

NOTE

Information useful for better handling



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1. Planning Information

NOTE

SCODA AERONAUTICA cannot accept any responsibility for the quality of work performed. Please refer to the last revision of the Advisory Circular 43.13 – 1B Acceptable Methods, Techniques, and Practices Aircraft Inspection and Repair.

1.1. Affected Aircraft

Type:	Super Petrel
Model:	LS
Serial Number:	All
Applicable Countries:	Not Limited

1.2. Reason

Maintenance reports has shown that in isolated cases fuel leaks at the wing tank have been noted. These leaks issue according to some owners/mechanics reports may be associated, but is not limited to:

- Water impacts due to beyond wave limitation water operations (not visible damage).
- Leading edge impacts (visible damage).
- Deterioration of the fuel tank and sealant due to contaminated fuel.
- Others.

The purpose of this document is to provide instructions to identify and repair a leakage inside the wing fuel tank of the Super Petrel LS.

1.3. Subject

Leakage Repair – Wing Fuel Tank

1.4. Compliance

Any evidence of leak should be addressed before aircraft is released for flight.



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1.5. Type of Maintenance

Section A and B - Heavy Maintenance

Section C and D – Task-Specific Training

1.6. Personnel Qualifications

Section A and B – LSA Repairman Maintenance or A&P

Section C and D – Task Specific (Course provided by Scoda Aeronáutica)

1.7. Release to Service

Conduct of this SI must be logged in the aircraft logbook with date and signature of the responsible person.

1.8. Weight and Balance

N/A

1.9. References

- Super Petrel LS Maintenance Manual
- FAA ADVISORY CIRCULAR AC 43.13-1B – Acceptable Methods, Techniques and Practices

1.10. Contact Details

For further information on performing this SI, contact us to the following email address:

engineering@scodaero.com.br

1.11. Disclaimer

This Service Instruction has been generated with utmost care. Nevertheless, errors and misunderstandings can never be fully excluded. In case of any doubts, the applicant is requested to contact Scoda Aeronáutica Ltda immediately to clarify the issue.



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2. Instructions

NOTE

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NOTE

Please refer to the latest revision of the Super Petrel LS Maintenance Manual

A. Borescope Inspection (*Heavy Maintenance*)

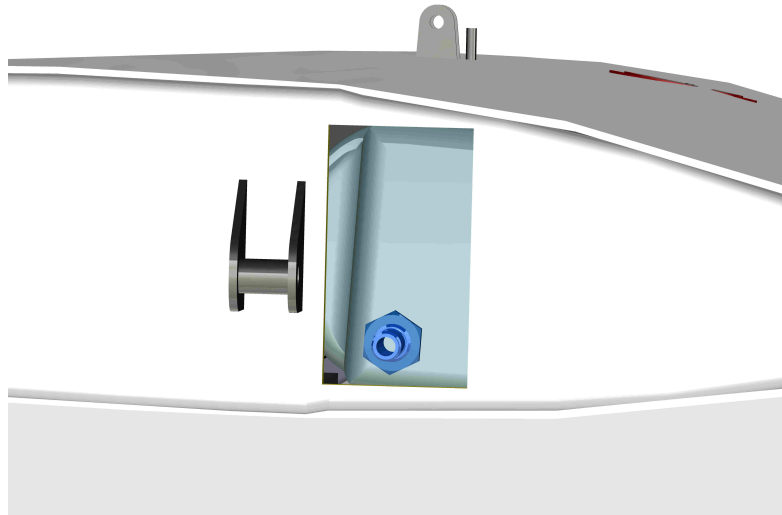
1. Drain the tank of the affected wing.
2. Remove the fuel cap.
3. Insert a borescope camera through the filler cap and perform an inspection the fuel tank interior surface for any crack:
 - If a crack on the sealer is identify in the fuel tank interior, proceed to the section B. Fuel Tank Resealing.
 - If any crack on the sealer is not identify in the fuel tank interior, it is possible the leakage point is located in the junction of the fuel tank with the leading edge. Proceed to the section C. Leakage Point Identification Procedure.

B. Fuel Tank Resealing (*Heavy Maintenance*)

1. Wash the fuel tank interior in order to prepare and degrease the internal surface.
2. Prepare the fuel tank sealer (see specification below):
 - Rhino Fuel Tank Sealer 9700 Novolac
Aircraft Spruce Part Number: 09-05368
3. Apply the fuel tank sealer through the filler cap and disperse the product over the inside surface by shaking or swirling it in such way covers all the affected area.
4. Leave to cure for 24 hours.
5. Perform a leakage test.

C. Leakage Point Identification Procedure (*Task-Specific Training*)

1. Drain the tank of the affected wing.
2. Remove the wing.
3. Make a cut in the wing root as shown below and remove the piece of foam. The piece of foam need to keep for covering the cut after the service.

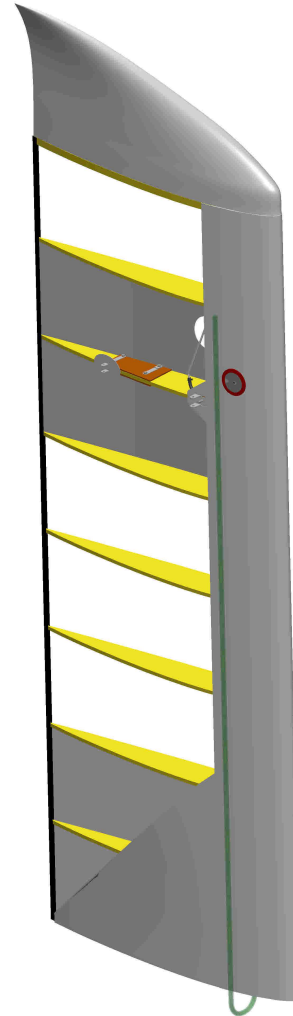
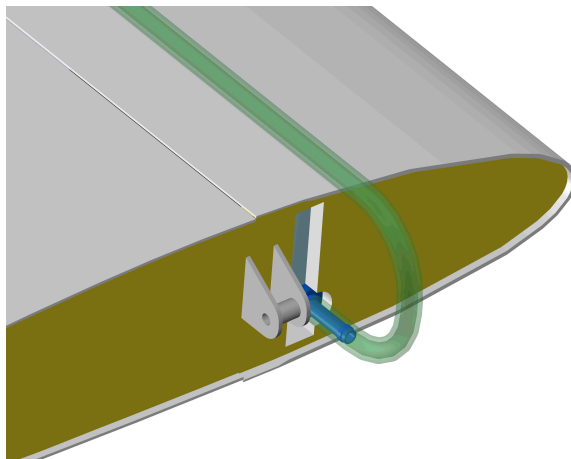
**CAUTION**

Careful must be taken to not reach the spar or cut the tank.

4. Connect a transparent hose in the fuel output of the wing and place over the leading edge up to the filler cap (upper surface). The wing need to be vertically over a support.

NOTE

The transparent hose need to be secured with tape or similar over the leading edge of the wing.



5. Add 1 US Gal at a time and check for leakage in the fuel tank output.

CAUTION

If fuel is used for testing, careful must be taken for a potential fire. If water is used for testing, make sure no water remains into the tank.

6. As soon as the leakage is identified, check the fuel level in the transparent hose. The damage area (leakage point) is just below the fuel level.
7. In order to identify if the leakage location is in the lower surface, tilt the wing back and check if is leaking in the fuel tank output.

8. Make a mark with a tape or pen over the wing leading edge for identifying the leakage location and proceed to the leakage repair section.

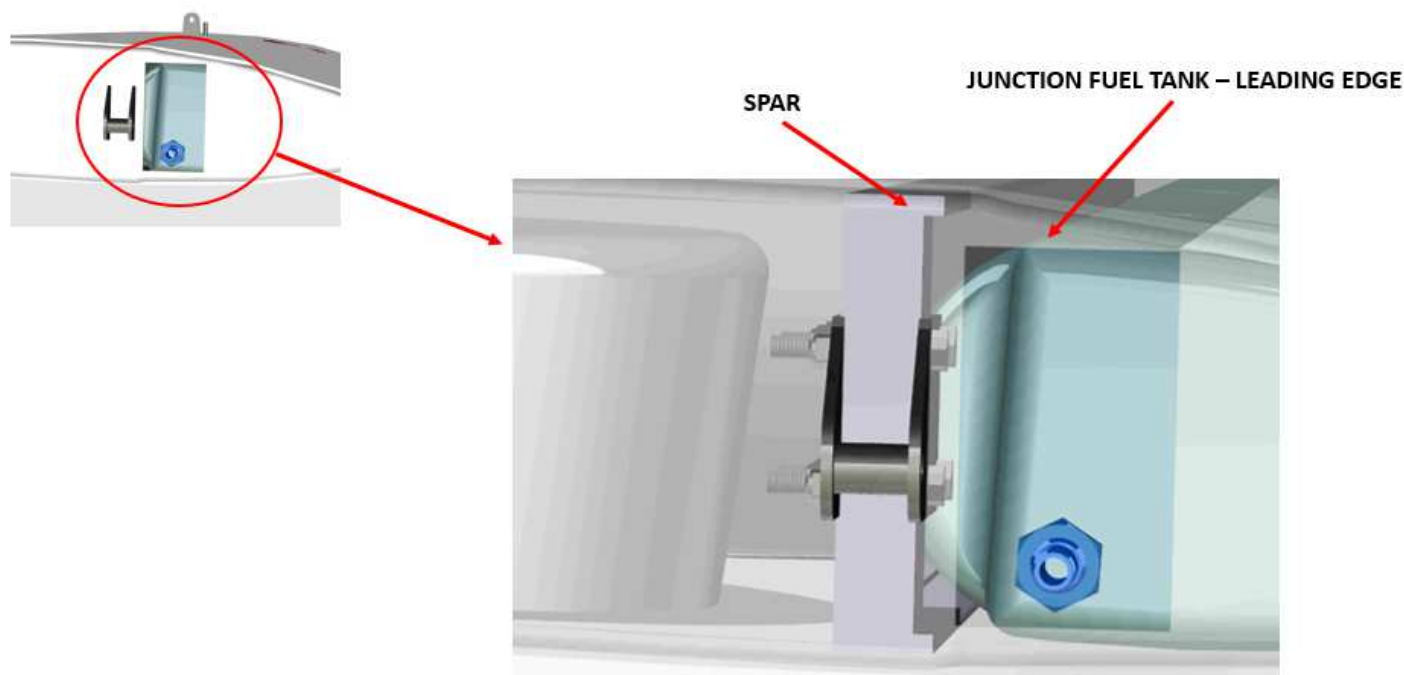
NOTE

Drain the tank for leakage repair.

D. Leakage Repair at the Fuel Tank Junction – Leading Edge (*Task-Specific Training*)**CAUTION**

Multiples leakage points inside the tank cannot be repaired. The replacement of the fuel tank must be done. If this is the case, contact Scoda Aeronautica Ltda at engineering@scodaero.com.br

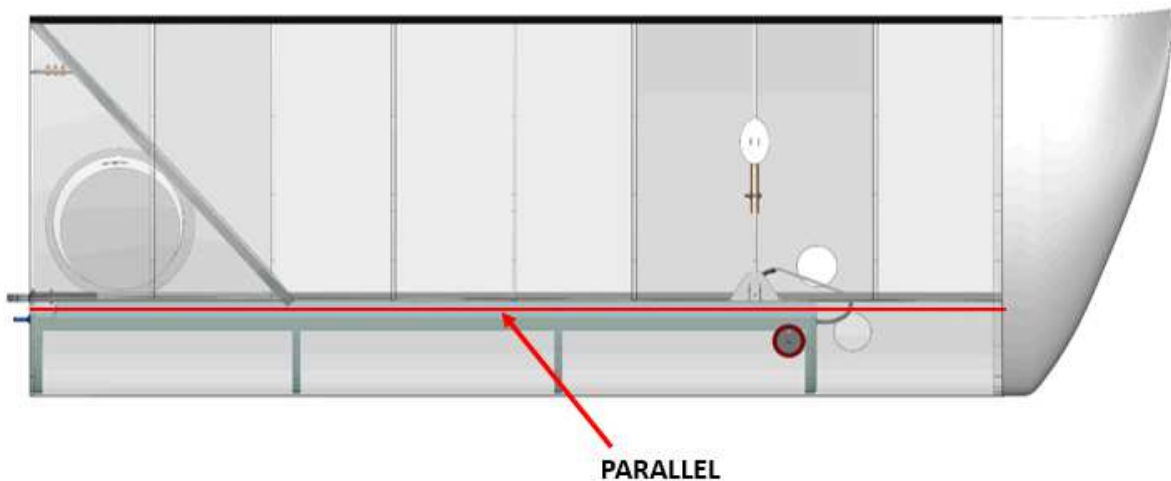
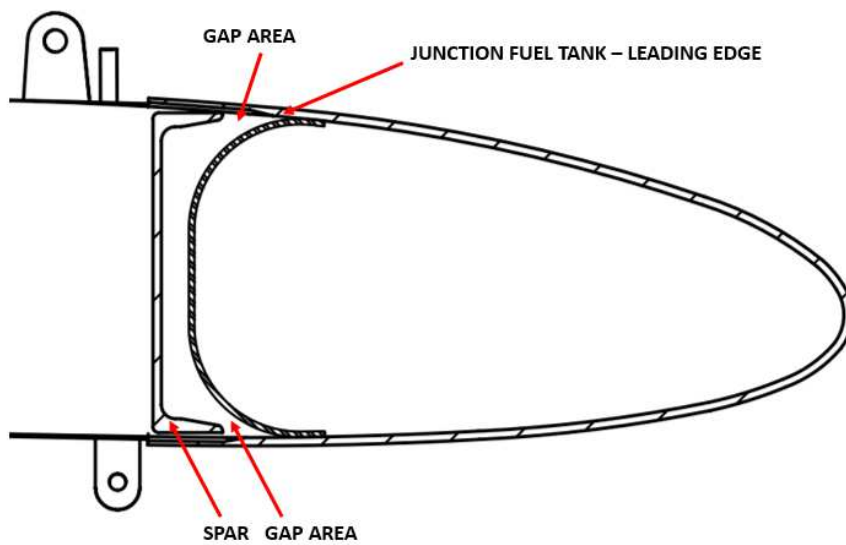
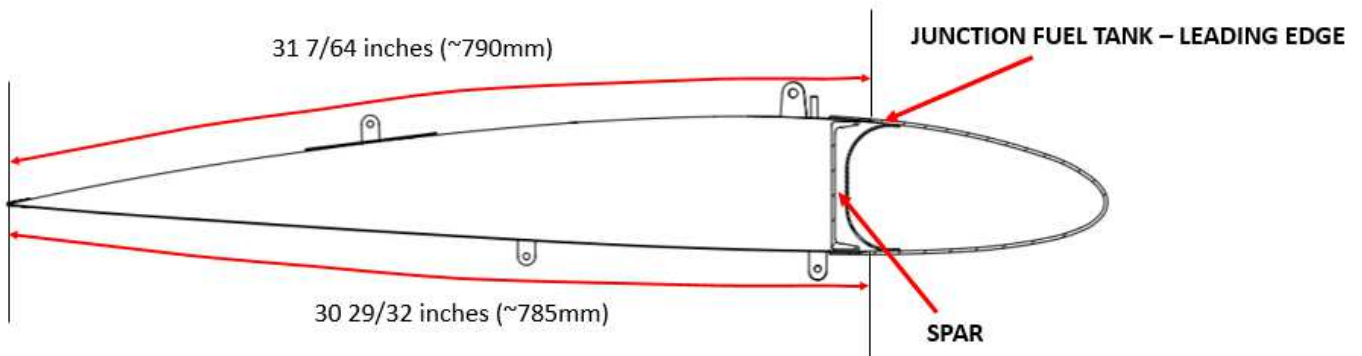
1. Through the cut that was made in the wing root (see picture below); identify the position of the spar and the junction of the fuel tank with the leading edge.



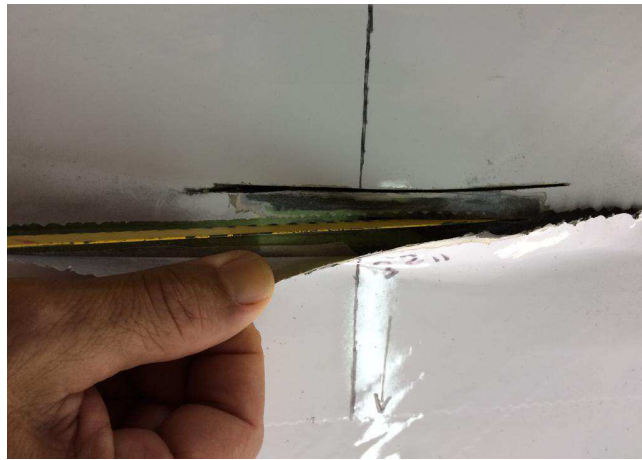
2. Make a mark where the cut need to be made (gap area between the spar and junction of the fuel tank). For getting this gap area, take the measure from the trailing edge with approximately $31 \frac{7}{64}$ (~790 mm) for upper surface or approximately $30 \frac{29}{32}$ (~785 mm) for lower surface and take a parallel (see pictures below).

NOTE

The measure should be taken following the upper surface or lower surface (arch).



3. Cut the fabric (tape reinforcement) enough in order to have a good area for working on the composite material surface.
4. Manually make a shallow cut on the leading edge using a type of saw following the mark at the leakage location in order to find the spot between the spar and fuel tank junction.

**WARNING**

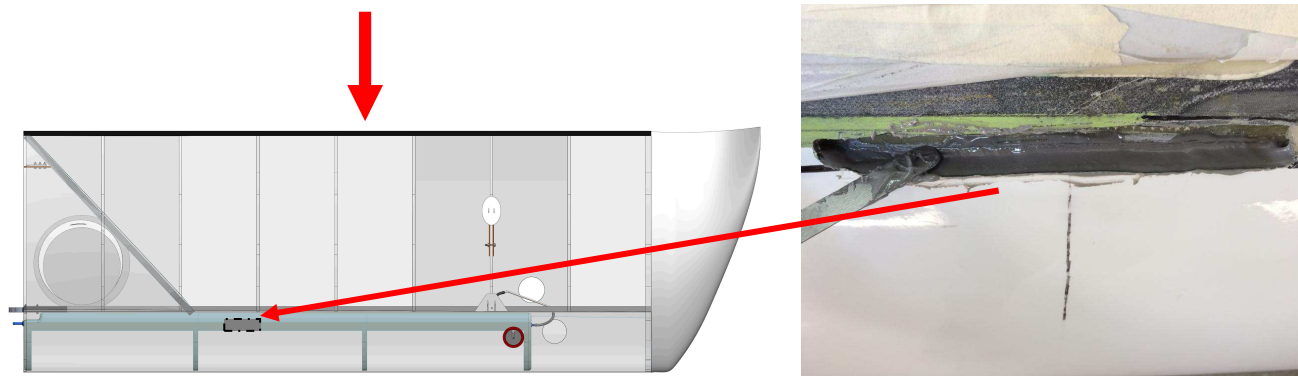
CAUTION MUST BE TAKEN TO ENSURE THE WING SPAR AND THE FUEL TANK ARE NOT REACHED. IF THE SPAR IS REACHED, THE WING WILL BE CONDEMNED. A FULL WING REPLACEMENT WILL BE REQUIRED.

5. For reaching the leakage point, it is necessary to remove material from the leading edge surface from the first cut toward the junction of the fuel tank with the leading edge. Make it manually with a type of saw. The repair area should be from 4 to 6 inches of length and 1/2 inches of width approximately.

CAUTION

Careful must be taken to not punch the fuel tank when removing the leading edge surface.

6. Scrape the area in order to identify the leakage point
7. Place the wing supported over the leading edge and apply structural adhesive (Hysol or similar) over the junction of the fuel tank with the leading edge. Use tapes in order to avoid pour adhesive over the leading edge.

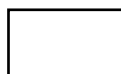
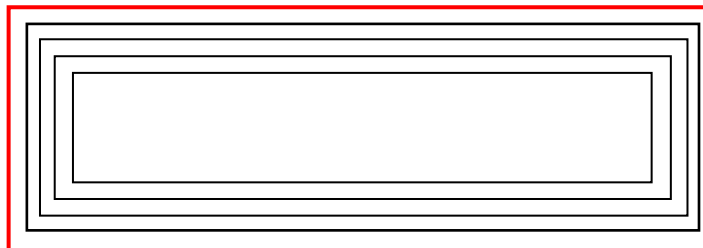


8. Leave to cure for 24h. Perform a leakage test following the steps described in the Leakage Test section. Add fuel up to the repaired area and check for leakage. If no leakage is observed in the repaired area, proceed to add more fuel up to FULL TANK and check for any other leakage point. If no leakage is observed proceed to the step 9.
9. Prepare the surface for laminating (refer to Section 7.2.8.5 Repair Preparation of the Maintenance Manual).
10. For leveling the repaired area surface, fill using epoxy loaded with structural filler material such as flocked cotton fiber or microballoon (refer to Section 7.2.8.7 Fillers Mixing of the Maintenance Manual).
11. Using the Typical Lay-Up process, laminate the cloths as follows (refer to Section 7.2.8.6 Typical Lay-Up Procedure of the Maintenance Manual):

Required Tools:	As applicable	
Parts and Materials Required:	#ID	Description
	1	Carbon fiber 200 g/m ²
	2	Fiberglass 100 g/m ²
	3	Peel Ply 85 g/m ²
	Epoxy resin – HTR-212 LAMINATING RESIN (Aircraft Spruce P/N: 01-00430) or similar	
Structural Adhesive – Hysol or similar		
Type of Maintenance:	Heavy Maintenance	
Level of Certification:	Task Specific	

- Apply 4 layers of Carbon Fiber 200g/m²
- Apply 1 layer of Fiberglass 100 g/m²
- Apply 1 payer of Peel Ply 85 g/m²

****LEAVE TO CURE FOR 24 HOURS****

TYPICAL LAY-UP PROCESS**Carbon Fiber 200 g/m²****Fiberglass 100 g/m²**

12. Reinstall the foam removed from the wing root using epoxy loaded with structural filler material such as flocked cotton fiber or microballoon (refer to Section 7.2.8.7 Fillers Mixing of the Maintenance Manual) and apply 1 layer of Fiberglass 160 g/m².
13. Wash the fuel tank.
14. Prepare the surface for repairing the fabric (tape reinforcement).

NOTE

Please refer to the latest edition of the FAA ADVISORY CIRCULAR AC 43.13-1B – Acceptable Methods, Techniques and Practices, Chapter 2. Fabric Covering.

15. Refer to the Section 5.11 Painting and Coatings of the last revision of Super Petrel LS Maintenance Manual.