



2141 ICON Way, Suite 100, Vacaville, CA 95688 - Tel: 707.564.4000 – www.iconaircraft.com

SERVICE LETTER
SL-042920-B

ID NUMBER & REVISION: SL-042920-B
SUBJECT: Seawing Tip Inspection and Sealing
RELEASE DATE: 10 July 2024
EFFECTIVE DATE: 10 July 2024
SUPERSEDES NOTICE: SL-042920-A
AIRCRAFT AFFECTED: **MAKE & MODEL:** ICON A5
SERIAL NUMBERS: 00001-00074
ACTION: None. Optional maintenance item
TIME OF COMPLIANCE: Not applicable. Recommend at next maintenance action
REVISION HISTORY: **A** Initial Release
B Revised part numbers (Stud was SS-M4-RB23-4.75X13MM, is ICA015965; kit was rev A, is rev B) and removed alternate PN for prepared Stud. Added instructions for bond prepping Stud. Updated formatting and Letter Form (ICA009717) to rev G.

LEVEL OF CERTIFICATION REQUIRED (any level checked can perform task):	<input type="checkbox"/> Pilot/Owner	<input checked="" type="checkbox"/> A & P
	<input type="checkbox"/> LSA Repairman – Inspection	<input checked="" type="checkbox"/> Certified Repair Station
	<input checked="" type="checkbox"/> LSA Repairman – Maintenance	<input checked="" type="checkbox"/> Manufacturer

PURPOSE:

ICON has become aware that the removable Seawing Tips on some A5 aircraft have departed the aircraft during operational use as a result of hard landings on the water or while operating the aircraft beyond the maximum suggested wave height of 12 inches. The departure of the Seawing Tip has created a large gap or in some cases a hole on the outer Seawing skin that has allowed water to intrude into the Seawings™. The amount of water intrusion has overwhelmed the capacity of the bilge pump, leading to significantly reduced buoyancy. ICON maintains that operations within the Water Operations Limitation will preclude this type of damage. However, we also recognize that determining water conditions can be difficult in real world scenarios and that unforeseen boat wakes and other surface waves can be hard to predict.

Recognizing that operations in the above scenarios may occur unintentionally, ICON has updated the bonding adhesive for the Seawing Tip Mounting Pins to a higher strength and begun to non-permanently seal/bond the Seawing Tip to the Seawings™. Testing has shown these actions significantly reduce the possibility of the Seawing Tip departing the aircraft during water operations, should there be inadvertent use above the Water Operations Limitations. The Water Operating Limitations have not changed, since the potential to damage the aircraft remains.

This engineering improvement was included on Aircraft Serial Number (ASN) 00075 and greater. This Service Letter includes instructions on how to perform the disassembly, inspection, and proper re-installation of the sealed Seawing Tips. Although not mandatory, ICON Aircraft will be completing this



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Service Letter on all internal fleet aircraft and highly recommends that owners of affected serial numbers comply.

WARRANTY:

This optional improvement is not covered under the ICON A5 limited warranty.

KITS, PARTS, AND CONSUMABLES:

PART	DESCRIPTION	QTY	KIT PART NUMBER
ISOPROPYL ALCOHOL	TT-I-735A, OR EQUIVALENT	AS NEEDED	N/A
CF1-2210 OR CMP12-2210	CITRISURF 2210 GEL	AS NEEDED	N/A
EA9394	ADHESIVE, EPOXY PASTE, HYSOL	1 EA (50 mL CARTRIDGE)	ME001057-B KIT, SEAWING TIP SEALING
ICA015965	STUD, NON-THREADED W/BASE, CRES, .1875X.500	8 EA	
ICA013211	WAX, CARNAUBA	11 OZ (1 Container)	
AC-251	SEALANT, AEROSPACE, BLACK CLASS B, B-1/2	3 EA (3.5 OZ CARTRIDGE)	

INSTRUCTIONS:

Remove Seawing Tip:

1. Remove the bolt securing the Seawing Tip to the Seawing. Retain hardware for re-installation.
2. Remove the Seawing Tip from the Seawing by applying pressure in the aft direction and rotating up and away from the bottom Seawing skin. If necessary, use plastic soft scrapers to loosen sealant.
3. Remove the sealant by peeling away from the Seawing skin or Tip.
4. Clean Seawing Tip and Seawing skin with isopropyl alcohol. Allow to dry completely prior to proceeding with re-installation.

Inspect Seawing Tip Studs:

1. Inspect 8x (2x forward and aft, LH and RH) Seawing Studs and Seawing Stud Bushings.
 - a. Remove and replace 8x Seawing Studs.
 - b. If Bushing is loose, coming disbonded, or has uneven wear on tophat, remove and replace.
 - c. If there are cracks, voids, holes, or pockets in bonding, remove and replace.

Remove the affected component and re-bond in accordance with the following instructions.

Notes:

1. Read repair instructions in their entirety before proceeding with this repair. Any questions regarding interpretation of this disposition shall be forwarded to engineering immediately.



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2. Unless otherwise specified, the following requirements apply when bonding features or performing wet lay-up repairs:
 - 2.1. No sprays, release agents, uncured silicone, or silicone-based lubricants shall be allowed in the vicinity of the repair area.
 - 2.2. Prior to application of adhesive, protect any areas that should not come in contact with adhesive (fittings, hardware, exterior surfaces, etc.)
 - 2.3. Unless otherwise specified, follow adhesive manufacturer's recommendations for material handling, preparation, application, cleanup, and curing. Repair shall be completed (i.e. bond closed, or wet lay-up repair placed under vacuum) within adhesive work life.
3. Composites are highly susceptible to impact and delamination damage. When breaking bonds, be very careful not to damage the laminate of either substrate. Any damage will require additional review by ICON Aircraft before proceeding with the repair.
4. During damage removal and tapered blend operations, be careful not to damage surrounding structure, including adjacent parts, integral core, etc.
5. During any cutting or abrading process, ensure that the laminate is not over-heated; all substrate materials must be protected from excessive temperatures (exceeding 200 °F).
6. When curing Hysol EA 9394 or EA 9396, use the following cure schedule:
 - 6.1. Initial-cure the laminate or bond at 110-120 °F for 55-65 minutes.
 - 6.2. Post-cure the laminate or bond at 190-200 °F for 55-65 minutes.
7. For bonded joints, Hysol EA 9394 paste adhesive shall be applied in a quantity sufficient to meet bond gap requirements, such that the joint will be completely filled over the faying surface with no areas void of adhesive. Excessive squeezeout of adhesive shall be removed. All edges of bond shall be filleted where possible.
8. For bonded joints, bondline thickness shall be 0.040 +/- 0.020 inch. Apply clamping pressure as required to achieve the required bondline thickness. Clamping pressure shall not be released until bond is at least initially cured. Do not apply, remove, and re-apply clamping pressure, as this will cause air entrapment. If removal of a component is required, re-prepare the joint in accordance with ICA010822.

Instructions

1. Carefully cut away the Seawing Studs and bushings as required. Studs may also be removed by gently heating using a heat gun.
 - a. All substrate materials must be protected from excessive temperatures (exceeding 200 °F) during the application of heat to soften adhesive materials when breaking bonds. Excessive temperatures can cause disbond, delamination, and blistering of composite substrates, resulting in a loss of strength and reliability. Utilize the following methods to prevent temperature damage:
 - i. Keep the maximum output air temperature of the heat gun below the threshold of damage temperature of the substrate and any surrounding components (i.e. 200 °F)

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- ii. Use any available technologies (infrared, temperature sensitive paint, etc.) to monitor the temperature of the nearby substrate during the operation. It should always be below the threshold temperature (i.e. 200 °F).
 - iii. Mask adjacent components and substrates with thermal barrier (silicone sheet or aluminum foil mask) to minimize heat transfer to unintended areas.
2. Remove any remaining adhesive by sanding with aluminum oxide paper until the base laminate is exposed. Do not damage the laminate.
3. Proceed with progressive inspection methods as required to ensure no damage has occurred during the removal of the bond. Inspection methods may include visual, magnified visual, borescope, tap testing, ultrasonic, etc. If required, carefully remove the surface protection by abrasive methods. For paint, primer, and bodywork removal, sand surface with aluminum oxide paper until the laminate is exposed. Do not damage the laminate.
4. Prepare the mating surfaces for bonding:
 - a. Wipe areas marked in red (Figure 1) the RH and LH Seawing with isopropyl alcohol and a lint-free cloth. Allow 15 minutes to dry.

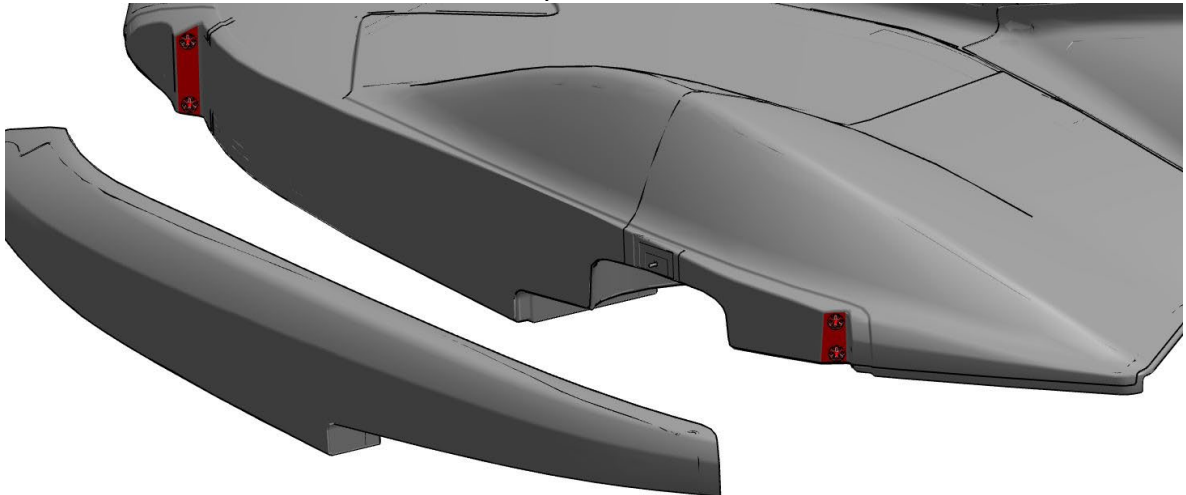


Figure 1. Bonding Area

- b. Abrade the Seawing Studs by grit blasting (120-180 grit aluminum oxide) or hand sanding (120-180 grit aluminum oxide emery paper) such that the surface is uniformly matte with no shiny metallic surface showing, as shown in Figure 2. Clean with isopropyl alcohol.

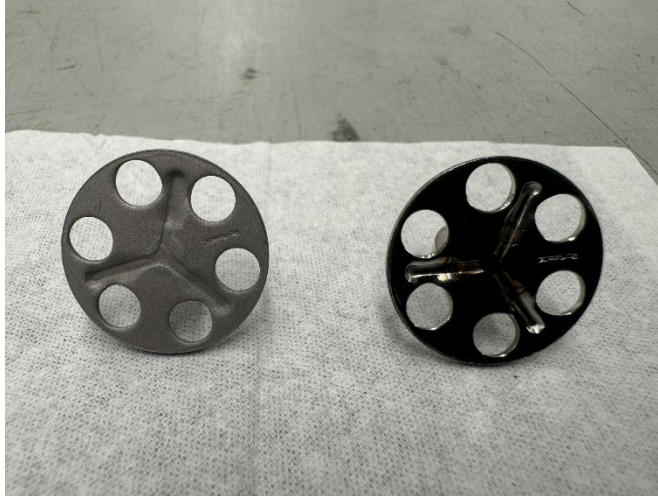
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Figure 2. Prepared Stud (left) and Unprepared Stud (right)

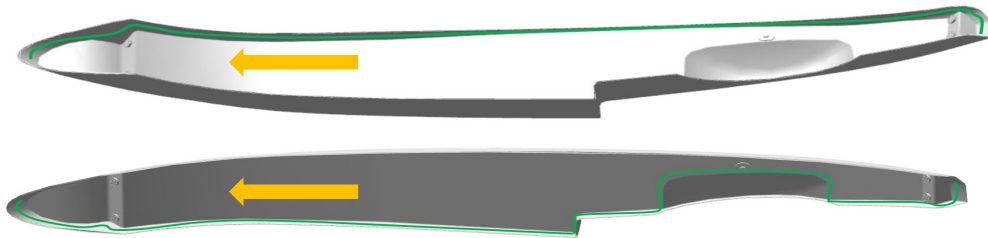
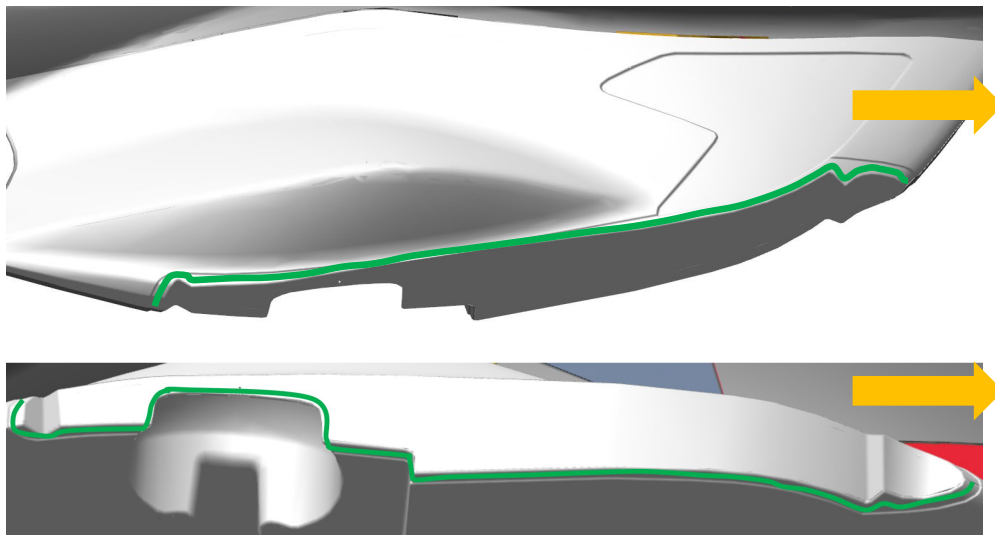
- c. Use Citrisurf to passivate the abraded Studs per manufacturer's instructions.
5. Place 2x .032" thick washers on the Seawing Studs and test fit Seawing Tip for alignment with the attachment bolt. Adjust washer thickness on each Stud until mounting bolt hole aligns and there is a consistent reveal around the Seawing. These are used as temporary shims.
6. In order to set the bond gap thickness, remove one .032" washer from each Stud. This will ensure Studs/bushings are receiving positive pressure while not over compressing during installation.
7. Prepare Hysol 9394 IAW manufacturer instructions

NOTE: *Once installed, allow to cure following manufacturer instructions. Do not attempt to reposition or move as this may cause air pockets or voids in the bond.*

8. Apply Hysol 9394 to Seawing Studs/Bushings as necessary (up to 8x) and place them in the seawing tips and install the seawing tips to match bond them onto the abraded areas on the RH and LH Seawing.
9. Attach Seawing Tip to the fuselage using a bolt with 2x washers into the existing nutplate. Be careful not to over torque creating poor bond gap for Seawing Studs.
10. After allowing to cure, remove Seawing Tip and follow instructions for reinstallation.

Re-install Seawing Tip:

1. Apply carnauba paste wax onto the RH mating surfaces of the entire top and bottom interfaces of the fuselage and Seawing Tip. Allow 5 minutes for the wax to flash off. Wipe carnauba wax off using a lint free cloth to leave thin film of residue on the mating surface. Repeat step a total of 3 times. Repeat process for LH side.

SERVICE LETTER**SL-042920-B***Figure 3. Carnauba Paste Wax Application to Seawing Tip**Figure 4. Carnauba Wax Application to Fuselage*

NOTE: Ensure that the work area is ready for the adhesive to be applied and that all tools, consumables, PPE, etc. are quickly within reach. AC-251 B-1/2 adhesive has a minimum application life of 30 minutes at 77°F with a relative humidity of 50%. The application life is dependent on the temperature and humidity of the work environment.

2. Mix AC-251 adhesive per manufacturer instructions:
 - a. Holding the cartridge, grasp the dasher rod and pull back approximately one inch
 - b. Insert the ramrod into the hollow of the dasher rod, break the piston loose, and inject about 1/3 of the contents into the cartridge. Do not inject all of the catalyst in one location. Distribute evenly throughout the base material
 - c. Repeat steps 1 and 2 until all the contents of the rod are emptied into the cartridge. Remove the ramrod.
 - d. Mix for the required number of strokes (hand mix: 50-75 strokes) or for the required amount of time (Machine mix: 37 strokes [1.5 minutes at 25 strokes/min])
 - e. When mixing is complete, remove bottom cap

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- f. Pull the dasher rod back to the neck of the cartridge, grasp the cartridge firmly at the neck, unscrew the dasher rod and remove
- g. Screw the nozzle into the cartridge, insert into the extrusion gun and use as required. For hand extrusion, press the used dasher rod against the plunger to force the material from the cartridge.

NOTE: Mix the cartridges of AC-251 adhesive one by one as they are needed. Do not mix all the adhesive at once.

3. Apply a 1/8" to 1/4" Diameter continuous bead of adhesive approximately centered along indicated (highlighted in red) curve. Repeat process for LH side.

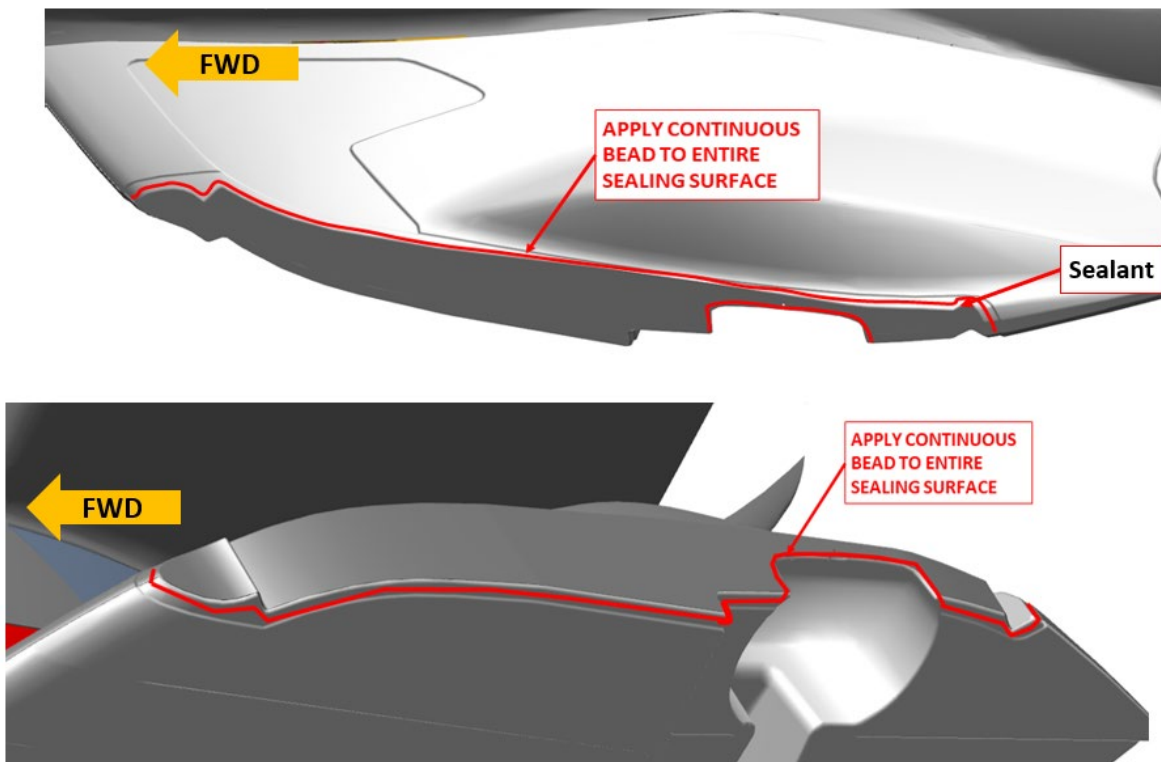


Figure 5 Sealant Application to Seawing

4. Place RH Seawing Tip onto 4x Studs (previously installed) on the fuselage. Repeat for LH side.

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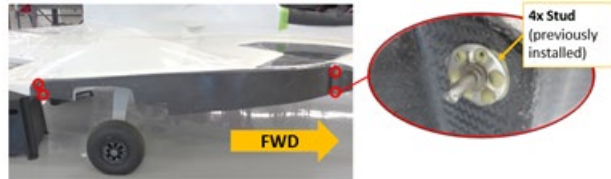


Figure 6 Seawing Tip Installation

- Attach Seawing Tip to the fuselage using bolt with 2x washers into existing nutplate.



Figure 7 Seawing Attachment Hardware

- Torque bolt to 26 in-lbs. Apply torque stripe.
- Verify .060 +/- .020" gap reveal between Seawing Tip and Seawing joggle. Ensure Seawing Tip installation is complete.



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If applicable, make the following logbook entry:

“The instructions of Service Letter SL-042920-B (Seaming Tip Inspection and Sealing) have been complied with (ref. FAA Exemption 10829C)”.

For aircraft registered outside the U.S., omit “(ref. FAA Exemption 10829C)”

If you have questions, comments, or concerns about this Service Letter and/or if you are no longer owner/operator of this aircraft, please forward this information to the present owner/operator and notify ICON Aircraft at:

ICON Aircraft
2141 ICON Way, Suite 100
Vacaville, CA 95688
(707) 564-4000

support@iconaircraft.com

Please include the aircraft registration number, serial number, your name, and if known the contact information of the new owner/operator.