SERVICE LETTER NUMBER 170

AIR TRACTOR EMPENNAGE CRACKS

By: RCG	**Aircraft Makes/Model(s):**	**Float Model(s):**	**Note(s):**
Approved: JRS	AT-802 AT-802A	10000A	Mandatory Compliance Service Letter P/N 1009111 ECO 24720
Date: 10/24/2016			
Rev: A			

FAA approval has been obtained for technical data in this publication that affects STC or TSO design compliance

EFFECTIVITY:

This service letter applies to: Air Tractor models AT802 and AT802A with Wipline 10000A Fireboss Amphibious Floats installed per STC SA01795CH

COMPLIANCE:

Mandatory compliance

BACKGROUND:

Fuselage cracking has been found in areas such as the horizontal tail section, tail pedestal, and upper longeron section

COMPLIANCE METHOD:

Inspect the fuselage for cracking in accordance with the Work Instruction section of this service letter

APPROXIMATE SHOP HOURS:

Inspection per method 1 or 2 of this service letter will take approximately 1 hour to complete. Additional time will be needed if installing the fuselage pressurization testing modification or if installing the tail section access panel per additional inspection method of this service letter

WARRANTY INFORMATION:

Parts and labor not included for this modification

TECHNICAL DATA:

Copies of this service letter, associated service kit, float service manual, and float parts manual are available at www.wipaire.com

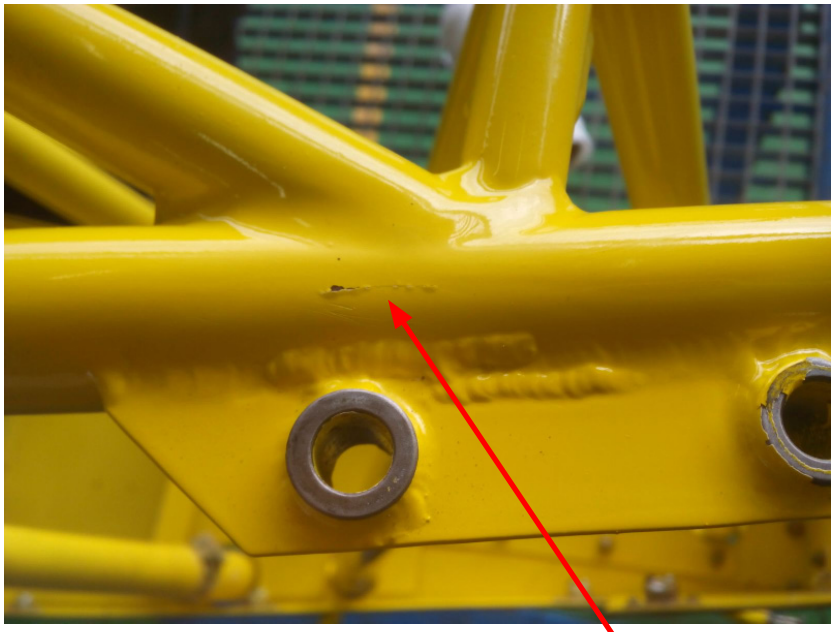
See photos and figures below for details to aid in performing this modification

For basic float model maintenance information, see applicable Wipaire service manual at www.wipaire.com

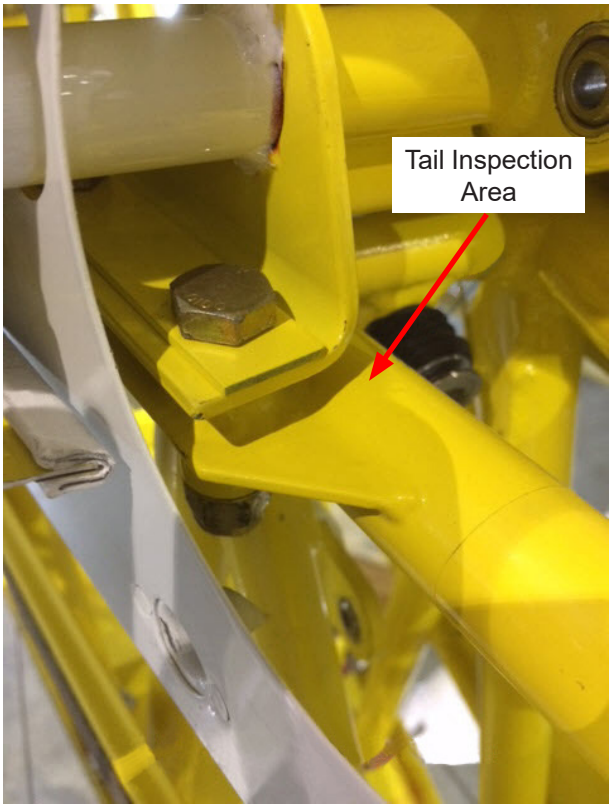
For basic float model parts information, see applicable Wipaire parts manual at www.wipaire.com

WORK INSTRUCTION

1. Inspect empennage for cracking per 1 of the 2 following methods. Inspection area and examples of cracking are shown below:



Example of a crack



METHOD 1

Inspect critical areas every 50 hours. Use an inspection mirror and flashlight to look for cracks on the pedestal mounts. Use the access location shown in Figures 1 through 4. At certain angles, deformations in the paint may be seen. These deformations could signify a fracture has been created under the paint and should be addressed immediately. Cracks that have broken through the paint should be addressed and repaired with the use of Air Tractor Service Letter or Service Kit, or any additional guidance given by either Air Tractor or Fireboss on a case by case basis.

METHOD 2

Inspect critical areas every 50 hours. Use a 6 or 8 mm borescope to inspect the locations shown in Figures 1 through 4 and the pedestal mount for any deformation in paint or signs of cracking.

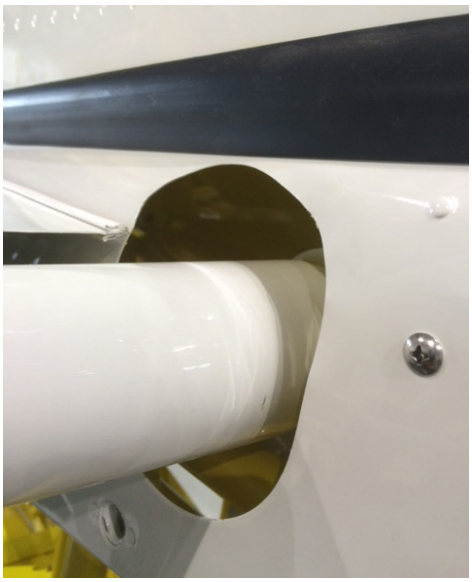


FIGURE 1

FIGURE 2

FIGURE 3

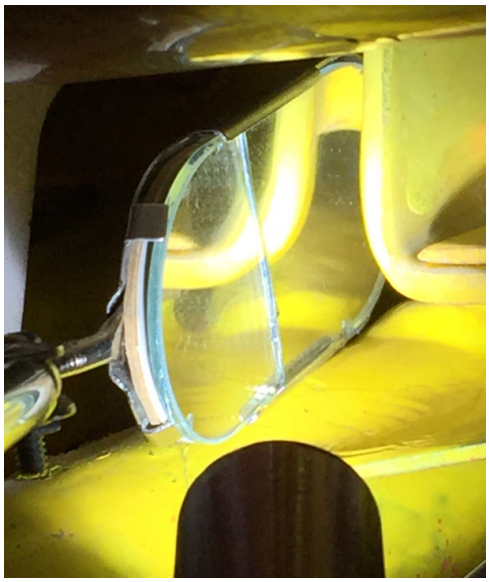


FIGURE 4

FUSELAGE PRESSURIZATION TESTING MODIFICATION

Inspect every 100 hours. Additional inspection measures can be taken with the use of a fuselage pressurization testing system. Use of the fuselage pressurization test does not eliminate the visual inspection requirement that must still be accomplished as listed in method 1 or 2. Pressurize the entire fuselage with a Schrader valve and pressure gauge assembly connected to the fuselage. During the aircraft manufacturing process, each tube cluster has a 1/8” hole where each tube is welded in place. During final manufacturing, the fuselage is pressurized, checking for any welded seam that may not be entirely sealed.

PARTS REQUIRED

PART NUMBER	DESCRIPTION
3847K71	1.5" Pressure Gauge
8063K33	Air Fill Valve
50785K321	1/8" NPT Brass Tee
NPT186	1/8" NPT Steel Bung
	Teflon Tape

1. Identify the location on the tube behind the hydraulic access door to install the assembly. Make sure that the bung is mounted so that the gauge assembly can be installed and viewed easily when installed as shown in figure 5 and 6 for the AT-802A Fireboss and figure 7 and 8 below for AT-802 Fireboss
2. Drill a 1/8" hole in the pipe where the bung will be welded. Make sure to only go through one wall of the pipe
3. Prep the area for welding where the bung will be welded to the pipe
4. Weld the bung to the fuselage
5. Using Teflon tape, assemble the gauge and Schrader valve to the brass tee
6. Using either Nitrogen or filtered compressed air, pressurize the fuselage to 10-15 psi
7. Leave the fuselage pressurized for no less than 24 hours
    - A slight pressure loss is possible depending on the gas used to pressurize the fuselage. If the fuselage loses pressure, the fuselage will need to be inspected in-depth using a linseed oil mixture type fluid or an equivalent leak check to help identify cracks
    - If the gauge assembly is removed, the bung should be sealed with a 1/8” NPT plug

FIGURE 5 (AT-802A)

FIGURE 6 (AT-802A)

FIGURE 7 (AT-802)

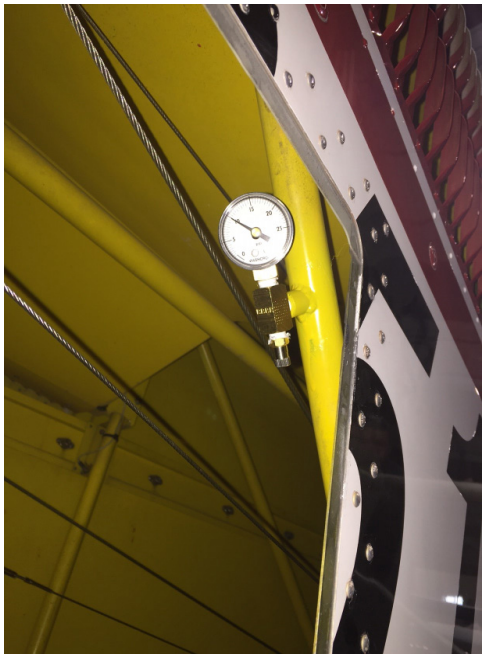


FIGURE 8 (AT-802)

TAIL SECTION ACCESS PANEL MODIFICATION

An additional modification can be made to the tail panel to install a removal access panel to allow for easier inspection of the fuselage. This modification requires the removal of the vertical and horizontal stabilizer in order to remove the tail panel. Once the modification has been made to the tail panel, removal of the vertical and horizontal stabilizers is not needed.

1. Remove the following items per the Air Tractor service manual in order to gain access to the tail panel
   - Elevators
   - Rudder
   - Left and right horizontal stabilizer
   - Vertical stabilizer
2. Remove tail panel

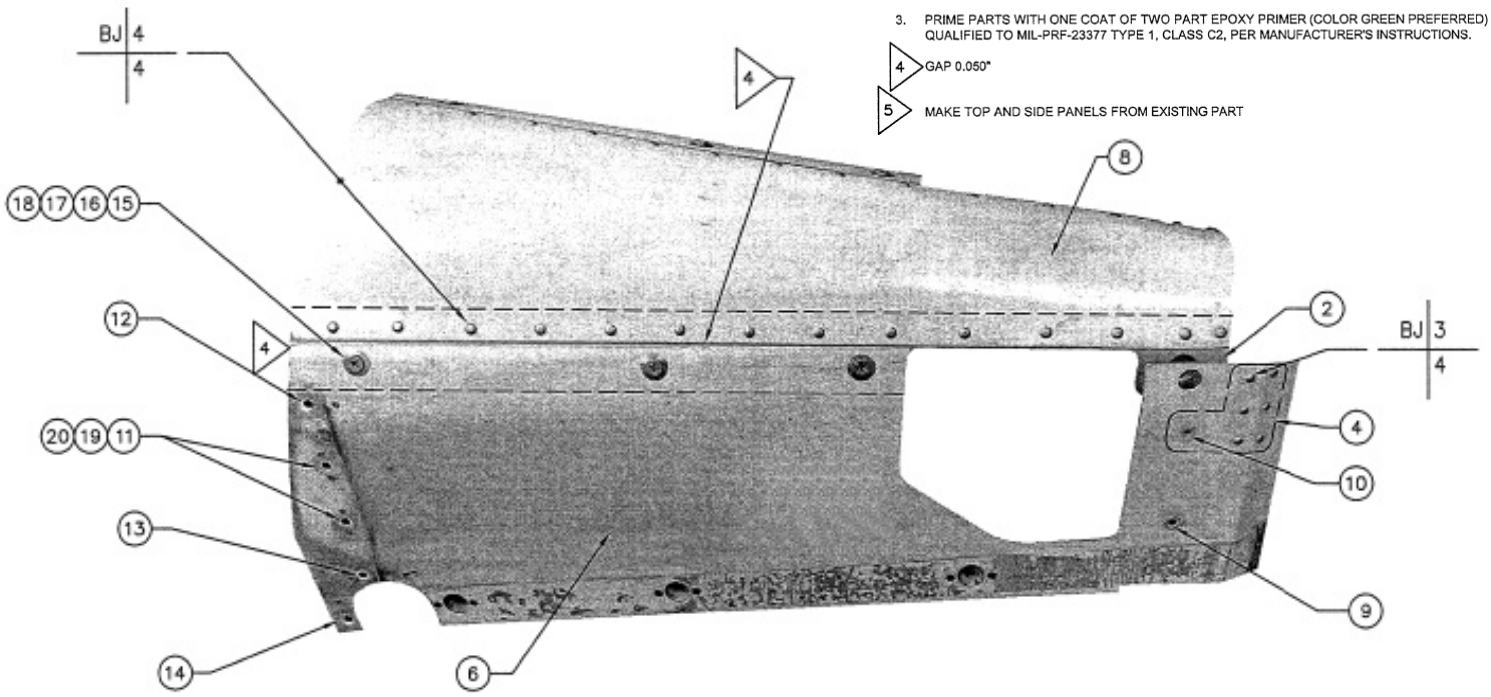
3. Make the following modifications to tail panel:

NOTES

1. BREAK ALL BURRS AND SHARP EDGES 0.005"/0.015" ON PARTS.
2. ALODINE PARTS IN ACCORDANCE WITH MIL-DTL-5541 CLASS 1A CHEMICAL CONVERSION COATING OR CPS 88-009.
3. PRIME PARTS WITH ONE COAT OF TWO PART EPOXY PRIMER (COLOR GREEN PREFERRED) QUALIFIED TO MIL-PRF-23377 TYPE 1, CLASS C2, PER MANUFACTURER'S INSTRUCTIONS.

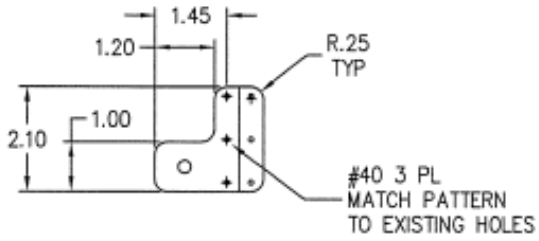
4 GAP 0.050"

5 MAKE TOP AND SIDE PANELS FROM EXISTING PART

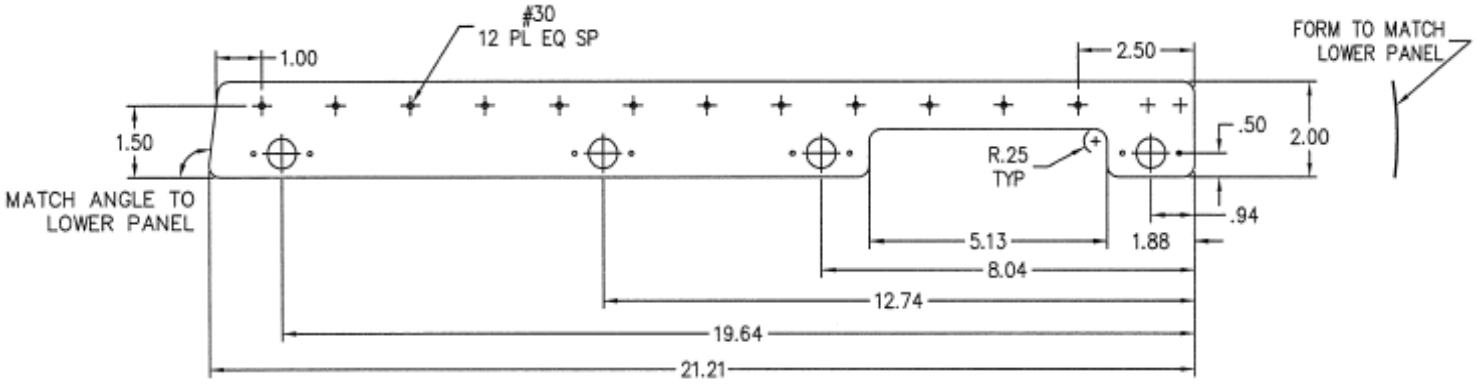


-301 TAIL PANEL ASSEMBLY – LH SIDE SHOWN, RH SIDE OPPOSITE

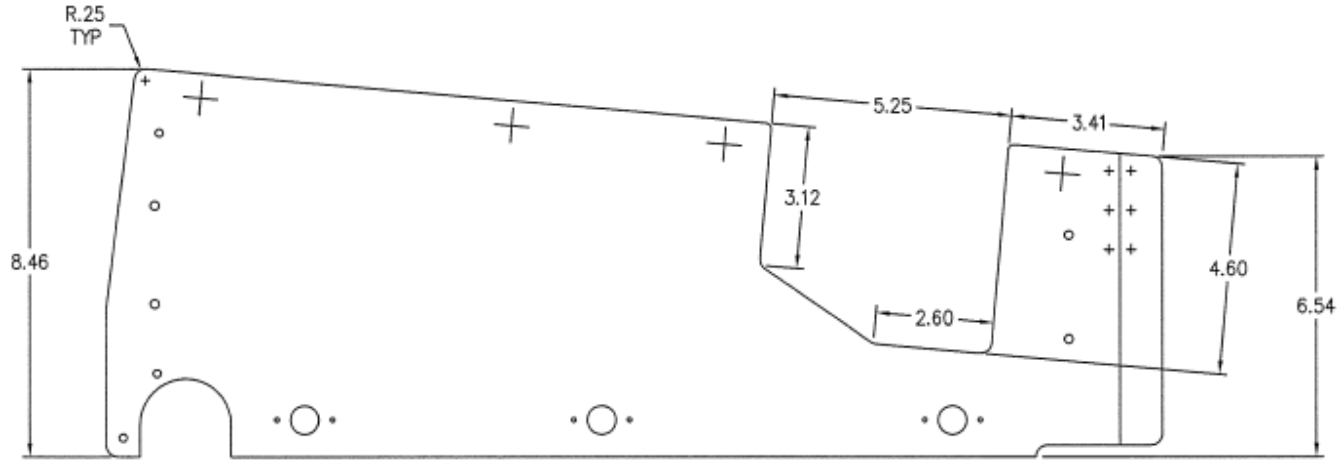
	2			AN960-10L		WASHER				20
	2			AN3-4A		BOLT				19
	8			R4G		RING				18
	8			4002N		COLLAR				17
	8			4002-4R		STUD				16
	8			40R17-2		RECEPTACLE				15
	2			MS21053L08K		NUT PLATE				14
	2			MS21059L08K		NUT PLATE				13
	2			MS21061L08K		NUT PLATE				12
	4			MS21059L3K		NUT PLATE				11
	2			MS21061L08		NUT PLATE				10
	2			MS21059L08		NUT PLATE				9
5	1			-9		UPPER PANEL				8
5	1			-8		RH LOWER PANEL				7
5	1			-7		LH LOWER PANEL				6
	1			-6		DOUBLER	2024-T3	0.040 THK	QQ-A-250/5	5
	1			-5		DOUBLER	2024-T3	0.040 THK	QQ-A-250/5	4
	1			-4		DOUBLER	2024-T3	0.040 THK	QQ-A-250/5	3
	1			-3		DOUBLER	2024-T3	0.040 THK	QQ-A-250/5	2
				-301		ASSEMBLY				1
	-301	WT	SER NOTE	PART OR IDENTIFYING NO.	SH & ZONE	DESCRIPTION	MATERIAL OR MFR	MATERIAL SIZE	MATERIAL SPEC	ITEM NO.



(4) DOUBLER, (5) OPPOSITE



(2) DOUBLER, (3) OPPOSITE



(6) LOWER PANEL, (7) OPPOSITE

4. Reinstall new tail panel assembly, horizontal and vertical stabilizers, and torque tube
5. Reinstall flight controls per Air Tractor maintenance manual
6. Rig flight controls per Air Tractor maintenance manual
7. Return to service per Air Tractor maintenance manual

LH and RH Lower Panels can now be removed without removing the horizontal or vertical stabilizers. Inspection can now be done by removing LH and RH lower panels

NOTES:

1. Upon completion of inspection, enter information in Aircraft Logbook for completion of Wipaire Service Letter 170
2. Once service letter is accomplished, please visit www.wipaire.com and update your aircraft service letter/kit record using the link found on the Customer Support dropdown menu under “Update Service Letter & Kit Compliance Status"