



Date: January 21, 2016

## **SERVICE BULLETIN 02-916**

- TO:** ALL OWNERS, OPERATORS AND MAINTENANCE PERSONNEL OF CESSNA T206H/206H/TU206G/U206G AIRCRAFT WITH THE SOLOY WING CAMERA MOUNT INSTALLED IN ACCORDANCE WITH SOLOY STC SA02478AT
- SUBJECT:** Wing crack inspection and doubler installation
- EFFECTIVITY:** All Cessna 206H, T206H, U206G, and TU206G airplanes that have wing-mounted camera system installed per Soloy, LLC STC SA02748AT, reissued June 28, 2010, or earlier revision.
- COMPLIANCE:** Soloy considers accomplishment of this service bulletin mandatory. The Federal Aviation Administration (FAA) may publish an airworthiness directive (AD) related to this service bulletin. The AD would make the compliance tasks and times given in this service bulletin mandatory.
- DESCRIPTION:** Inspect the left wing lower skin, upper and lower skin of the outer flap cove and flap for cracks. Repair any cracks found, and install a modification as given in the accomplishment instructions.
- APPROVAL:** This service bulletin was examined by the FAA. The changes specified in this service bulletin comply with the applicable regulations and are FAA approved for all airplanes listed in the service bulletin effectivity. This service bulletin and its approval were based on the airplane in its original Cessna delivery configuration and as modified by Soloy, LLC STC no. SA02748AT.
- If an airplane has a non-Soloy modification or repair that affects a component or system also affected by this service bulletin, the operator is responsible for obtaining appropriate regulatory agency approval before incorporating this service bulletin.
- MANPOWER:** The table below shows an estimate of the task hours necessary to do the work for each airplane. The estimate is for direct labor only, done by an experienced crew, and does not include final painting after the modification.

Task	Number of Persons	Task Hours	Elapsed Hours
Part 1 – Inspection	1	0.8	0.8
Part 2 – Repair	1	If crack repairs are necessary, the additional time that will be required depends on the number and extent of the repairs.	
Part 3 – Modification	2	24	48

**REFERENCES:**

- (a) Cessna 206H/T206H 1998 and on Service Manual, Document No. 206HMM, Revision 18 or later.
- (b) Cessna U206 Series (1977-1986) Service Manual, Document No. D2070-13, Revision 3 or later.
- (c) Cessna Single Engine (1997 And On) Structural Repair Manual, Document no. SESR, Revision 8, or later.
- (d) Cessna Service Newsletter SNL03-4, Heavy Duty Flap Availability, dated March 17, 2003.
- (e) Cessna Modification Kit MK206-57-01A, Heavy Duty Flap installation, dated February 10, 2003, or later FAA-approved revision (applies to certain 206H and T206H airplanes)
- (f) Cessna Service Kit SK206-47, Heavy Duty Flap installation, dated March 17, 2003, or later FAA-approved revision (applies to certain 206, U206, and TU206 airplanes)
- (g) Knots2U Supplemental Type Certificate No. SA2382NM (EASA STC SA1329), Amended July 15, 2003 or later FAA-approved revision, and associated installation instructions and instructions for continued airworthiness.
- (h) FAA Advisory Circular AC 43.13-1B, Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair, dated September 08, 1998, or later.
- (i) Soloy Drawing 916-1000, Revision E, or later approved revision.
- (j) Soloy Drawing 916-1013-1, Revision H, or later FAA-approved revision.

**WEIGHT AND BALANCE CHANGES FOR THE MODIFICATION:**

916-1348-1skin doubler installation.....0.7 lb @ 54.0 inches

The required Knots 2U C206FGS Flap Gap Seal and the Cessna Heavy duty flap, if not already installed, will alter weight and balance as specified by the respective manufacturer.

**MATERIAL INFORMATION:**

The following parts are required for installation of the 916-1348-1 Skin Doubler. These parts can be supplied by Soloy as a kit (order Kit no. 916-SB-02). The following list assumes installation of the doubler without any cracks in the skins or the wing structure. If cracks are found in any of the structure, adjustments to the following list may be necessary to accommodate repairs.

Part Number	Qty	Description	Source
916-1348-1	1	Doubler, Lower LH Wing	Soloy, LLC
MS20470AD4-5	14	Rivets	Soloy, LLC
MS20470AD3-4	67	Rivets	Soloy, LLC
MS20470AD5-8	2	Rivets	Soloy, LLC
MIL-S-8802, Type II, Class C-20	1 Pint	Sealant	Obtain locally
Sheet, Vinyl, .01	1 sheet	Rigid Template, 25"X52" Clear	Soloy, LLC

Note: A short nap paint roller (3-4 inch) will be helpful for installation of the 916-1348-1 Skin Doubler.

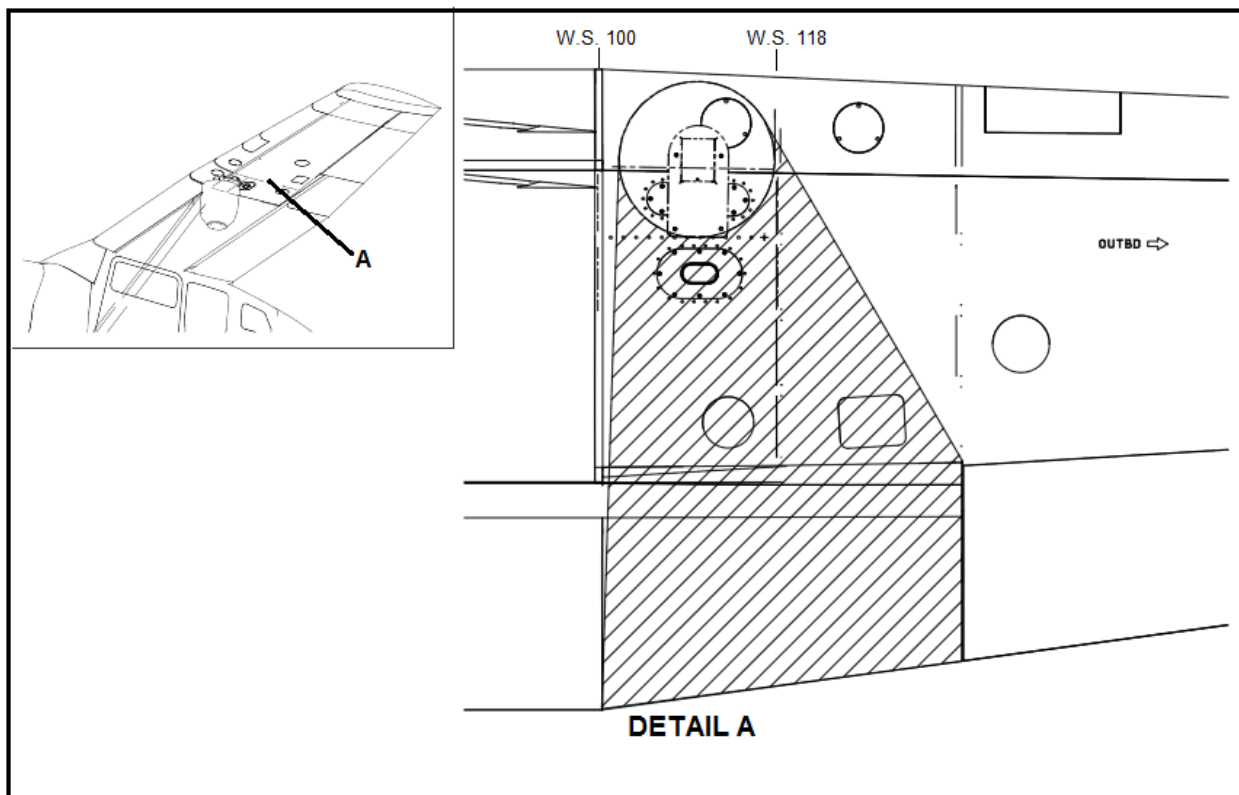
**ACCOMPLISHMENT INSTRUCTIONS:****PART 1: INSPECTION**

These inspections are to be done until the modification per PART 3 of this service bulletin is accomplished:

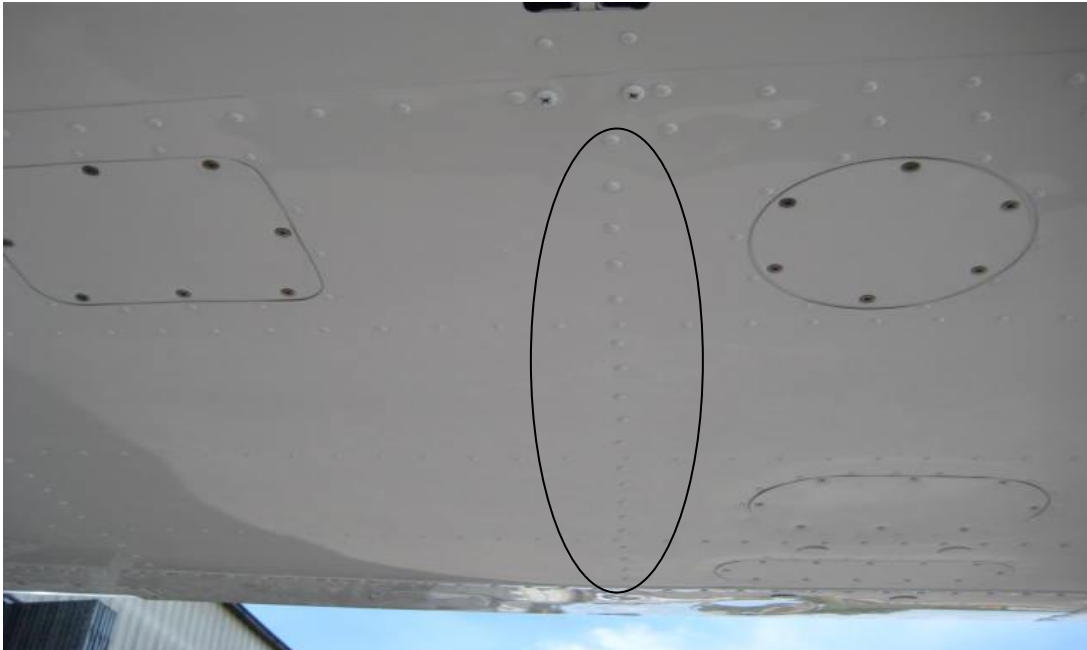
Inspection Threshold:	Within 20 flight hours or 30 days from the release of this service bulletin, whichever comes first.
Inspection Interval:	Every 50 flight hours.
Inspection Method:	Detailed Visual Inspections as detailed in the steps below. When doing a visual inspection, refer to reference (h), AC 43.13-1B, Section 5 for inspection procedures.

1. Lower the flaps to the full down position with the flap switch.
  - a. Ensure that the master switch is in the OFF position.
2. Remove the two aft wing access panels behind the sensor mount ( designated 510AB and 510DB on H model aircraft).
3. Perform an external detailed visual inspection of the left lower wing skin in the area aft of the sensor mount for cracks (see Figure 1, shaded area). Pay particular attention to the wing skin rivets on the rib line (W.S. 118.0) forward of the outboard flap track (see Figure 2).

4. Perform an internal detailed visual inspection of the interior wing structure in the area aft of the sensor mount for cracks (see Figure 1, shaded area). Access to the internal wing structure is through the aft access.
5. Perform an external detailed visual inspection of the left flap for cracks in the area shown on Figure 1. Pay particular attention to the flap skin at the outboard flap track (See Figure 3). Perform an internal inspection of the flap structure through the access panels on the upper surface of the flap.
6. Perform an external detailed visual inspect of the outboard flap cove area and upper wing trailing edge skin for cracks in the area shown on Figure 1. Areas of particular concern are the opening at the outboard flap actuator, the upper skin above the flap cove (see Figure 4) and the attach brackets at the outboard flap track.
7. If no cracks are found, reinstall the removed access panels, raise the flaps with the flap switch and put the airplane back into airworthy condition.



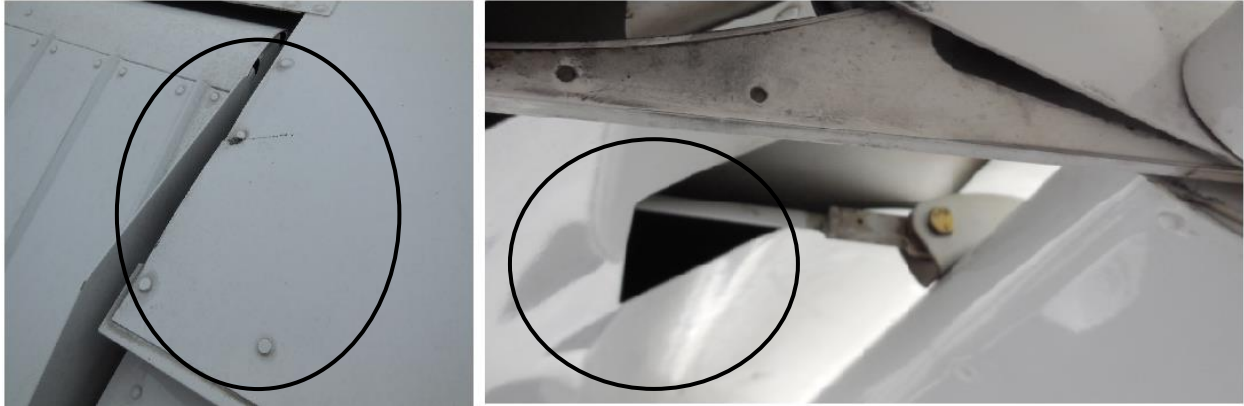
**FIGURE 1: Inspection Area**



**Figure 2:** Left Lower Wing Skin Area of Particular Interest, Rib W.S. 118.0



**Figure 3:** Outboard Flap Track Area of Particular Interest, Rib W.S. 118.0



**Figure 4:** Upper and Lower Flap Cove Areas of Particular Interest

## **PART 2: REPAIR**

If cracks are found, repairs will be necessary. Contact Soloy Product Support for coordination of a suitable repair procedure.

## **PART 3: MODIFICATION**

This modification is intended to provide a fatigue improvement, and prevent premature cracking of the airplane wing structure. The modification consists of three components:

- A. Skin doubler installation (Soloy skin doubler)
- B. Flap gap seals installation.
- C. Cessna Heavy-Duty flap installation.

All three installations must be incorporated for the modification to be considered accomplished in its entirety.

Accomplishment of this modification in its entirety terminates the inspections per PART 1 of this service bulletin. After the modification is done in its entirety, do inspections per PART 4 of this service bulletin.

**NOTE:** If the modification is not done in its entirety, inspections per PART 1 of this service bulletin are still required. Inspections per PART 1 of this service bulletin are only terminated if the PART 3 modification is done in its entirety.

### **A. Installation of the Skin Doubler:**

**NOTE:** Special shoring of the airplane during the following steps is not required, however it is recommended that the airplane not be jostled or moved until the skin doubler is installed, in order to prevent inadvertent misalignment of the structure while the fasteners are removed.

1. Lower the flaps to the full down position with the flap switch.
  - a. Ensure that the master switch is in the OFF position.

2. Remove the two aft wing access panels behind the sensor mount (designated 510AB and 510DB on H model aircraft).
3. Refer to references (i) and (j), Soloy drawings 916-1000 and 916-1013.
4. Mark the outline of the 916-1348-1 onto the clear plastic template, then orient a clear plastic template of the doubler onto the wing, as shown on drawing 916-1013. Note the existing fasteners that must be removed where the doubler will be installed.

**CAUTION: TAKE EXTRA CARE WHEN DRILLING OUT EXISTING RIVETS. DO NOT ELONGATE OR OVERSIZE HOLES WHEN DRILLING OUT RIVETS.**

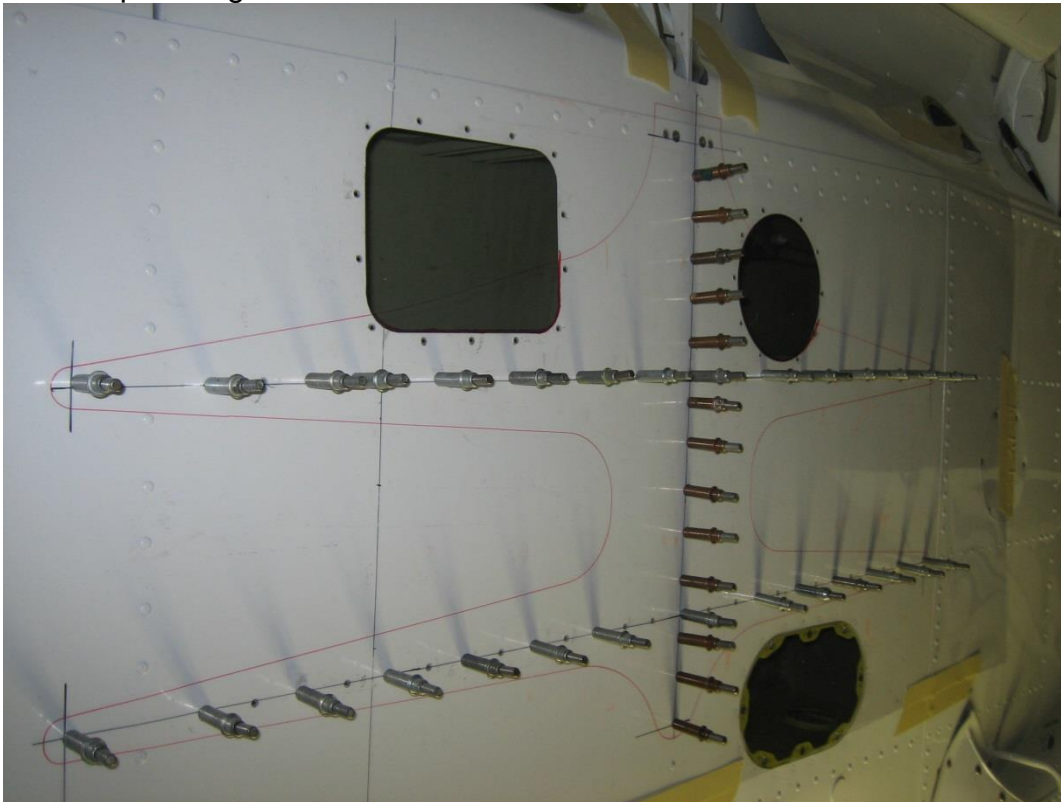
5. Remove the overlay and drill out the wing rivets enclosed by the doubler shape. See Figure 5.
6. Remove the existing access panel reinforcement rings by drilling out the rivets.



**Figure 5: Removed Wing Rivets**

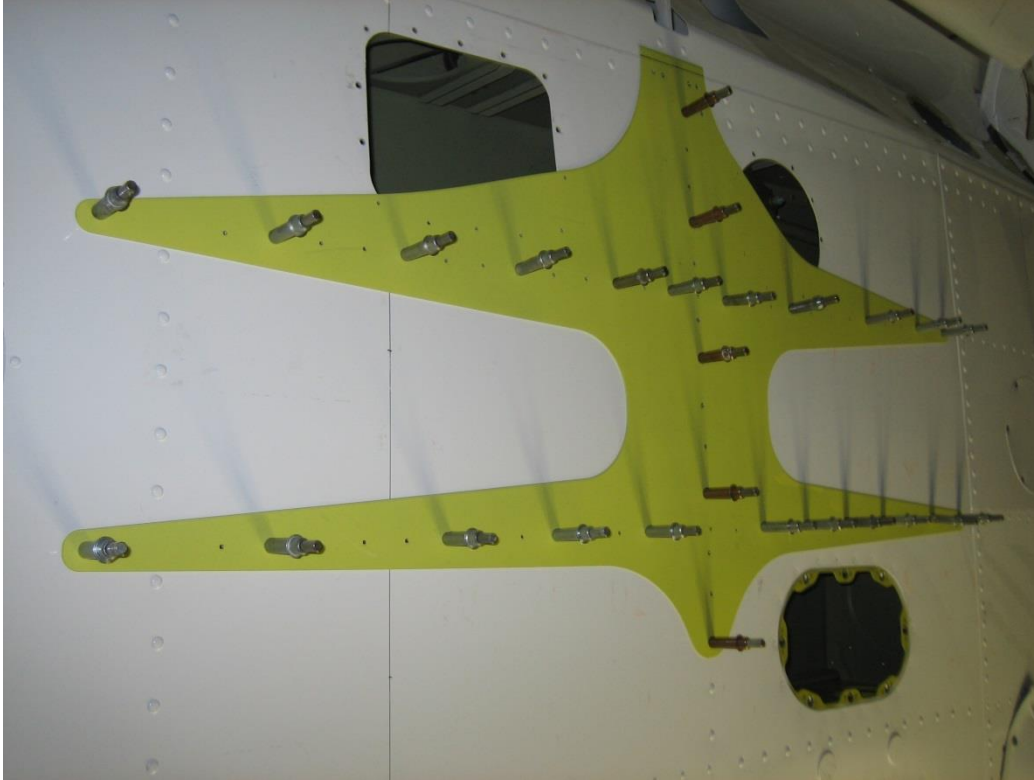
7. Re-install the plastic template and mark the rivet locations (See Figure 6).
8. Transfer the fastener locations to the 916-1348-1 Doubler.
9. Carefully drill the Doubler to match the template, with the following notes:
  - a. Maintain minimum 2D fastener edge margins, where D=fastener shank diameter, and the edge margin is measured from the center of the fastener holes.
  - b. Drill hole sizes as indicated per reference (h) AC 43.13-1B chapter 7 for the size and type rivets indicated in the drawing.
  - c. Deburr the fastener holes.

10. Trial fit the Doubler to the wing and verify that it lays flat and tight to the wing skin. Adjust as necessary with slight forming of the doubler to achieve a tight fit.
11. Mark the corner cutouts of access panels onto the Doubler, then remove the doubler.
12. Trim the doubler at the corner cutouts of access panels, to be flush with the access panel cutout edges with the following notes:
  - a. See Figure 7.
  - b. Match the inside radii of the trimouts to the existing cutouts in the wing.
  - c. Break and deburr the trim edges.
13. Mask the area around the perimeter of the Doubler approximately  $\frac{1}{4}$ " beyond the doubler edges and scuff the underlying paint lightly with a Scotchbrite™ pad.
14. Apply touch up primer (per Mil-P-23377 or equivalent) to the trimmed edges of the doubler.
15. Coat the faying surfaces of the Doubler and the wing skin with a thin coat of MIL-S-8802 Sealant with the following notes:
  - a. Mix and apply the sealant using the manufacturer's instructions.
  - b. For a smooth, even coating, application using a 3" paint roller is recommended. See Figure 8.
  - c. Slight thinning of the sealant per the manufacturer's instructions will aid in spreading.



**Figure 6:** Plastic Overlay Matched to Rivet Pattern





**Figure 7:** Doubler Trial Fit and Mark



**Figure 8:** Sealant Coated Faying Surfaces

16. Install the Doubler to the wing with the following notes:
  - a. Install the doubler and rivets before the sealant cures (a working time of 2 hours is normally available at room temperature, but refer to the sealant manufacturer's instructions).
  - b. It may be necessary to lightly clamp some raised edges of the doubler as shown in Figure 9 to insure that it lays evenly on the wing skin.
  - c. Install rivets per reference (h) AC 43.13-1B chapter 7.
  - d. Reinstall the access panel reinforcement rings as the doubler is fastened in place. The fasteners will be common to the new doubler.



**Figure 9:** Light Clamping of Raised Edge

17. Clean excess sealant from the Doubler and the edges and fillet seal the edges with fresh MIL-S-8802 sealant. Allow the sealant to cure.
18. Finish paint as desired per reference (h) AC 43.13-1B chapter 6 or reference (a) or (b) Maintenance Manual as applicable.
19. Reinstall the removed access panels, raise the flaps to the full up position with the flap switch, and put the airplane back into airworthy condition (refer to reference (a) or (b) Maintenance Manual as applicable).

#### **B. Installation of Flap Gap Seals:**

A Knots 2U approved flap gap seal kit (ref g) p/n C206FGS is required as a part of this modification. If such seals were not previously installed on the airplane then an installation per the manufacturer's instructions will be required.

NOTE: If the airplane is already equipped with flap gap seals, it is not necessary to install new gap seals. If the gap seals were installed per the reference (g) Knots2U STC, no further work is required. If the gap seals were installed under a different STC, different approval, or an earlier revision of the Knots2U STC, contact Soloy Product Support for an evaluation of compatibility with this service bulletin.

### C. Installation of Heavy-Duty Flap:

A Cessna left wing heavy duty flap installation is required as a part of this modification. If the heavy duty flap was not previously installed on the airplane, then an installation per Cessna service information is required (see Cessna Service Letter SNL03-4).

## PART 4: POST-MODIFICATION INSPECTIONS

These inspections are to be done after the modification per PART 3 of this service bulletin is accomplished:

Inspection Threshold:	Within 100 flight hours since the modification per PART 3 of this service bulletin.
Inspection Interval:	Every 100 flight hours.
Inspection Method:	Same as the inspections outlined in Part 1 except additional areas of emphasis will be around the perimeter of the installed doubler. If cracks are found, prior to further flight, contact the Soloy Service Department for repair instructions and do the repair.