



2300 Madison Highway Valdosta, GA 31601

SERVICE BULLETIN

CATEGORY 2

This Service Bulletin contains information pertaining to a threat to the continued safe operation of an aircraft or to the safety of persons or property on the ground unless some specific action is taken by the aircraft owner.

REVISION

SB-195 A

ATA 5521

DATE: June 1, 2021

SUBJECT: Bondline Inspection

MODEL / SERIALS AFFECTED: AA5, AA-5A and AA-5B / All
AA1, AA-1A, AA-1B and AA-1C / All

TIME OF COMPLIANCE:

AA-5A, AA-5B
AA5, AA1, AA-1A,
AA-1B and AA-1C

Perform Part (A) within the next 100 hours, time in service, or the next scheduled inspection, whichever occurs first and every Annual Inspection thereafter.

AA5, AA1, AA-1A
AA-1B and AA-1C

Perform Part (B) once, within the next 25 hours, time in service, or at the next scheduled inspection, whichever occurs first.

REFERENCE DOCUMENTS:

True Flight Aerospace Service Kit-125B “Flight Controls (ATA No. 27) and Structures (ATA No. 51) Bondline Delamination, Repair of”

GENERAL: All AA1 and AA5 Series Aircraft

All AA1 series and AA5 series aircraft were constructed using a metal-to-metal bonding process. While the bond adhesive has been determined to remain structurally sound throughout the aging process, factors such as corrosion and freezing moisture have been found to compromise the structural integrity of some of the bond joints. This can lead to delamination of the skin from the wing and stabilizer frames as well as support structure in the fuselage. Delamination, left undetected, could result in loss of controlled flight.

Field reports have shown that bondline inspections called out in Chapter 5 of the maintenance manual are not being adequately performed during routine inspections. As these aircraft age and have more exposure to the elements, bondline damage due to moisture, ice and corrosion are becoming more frequent. As a result, mechanics must make bondline inspections a primary concern during 100 hour/Annual inspections.



This service bulletin provides for the inspection and repair of bondlines.

A. Required Action: Bondline Inspection - AA1 series, All - AA5 series, All

1. Carefully inspect all bondlines of the wings, stabilizers and fuselage (Figure 2 & 3) for bondline separation using the “Tap Test” method. With a coin or similar object, tap the length of each bondline while listening for a change in tone as the area is traversed. A bondline separation will produce a flat or hollow sound when tapped in the delaminated area. Mark delaminated areas with a grease pencil on the outer surface. (Figure 1)
2. To verify delamination exists, attempt to insert a 0.004 to 0.006 feeler gauge or another similar tool into the bondline.
3. If no delamination is found, clean all accessible bondlines with MEK, Isopropyl Alcohol or Acetone and seal with paint as required.
4. If any delamination is found, accomplish step C or D of SK-125B as required for repair.
5. If delamination is found in a horizontal stabilizer of the AA1 series aircraft or the AA5 Traveler, comply with B2.

NOTE: 1604-0412 rivets may be substituted for CR3242 -4 - 2 rivets.

6. Inspect the interior of the wings, stabilizers and aft fuselage for corrosion. If only light surface corrosion (white ash appearance) is found, proceed to step (7). If major corrosion (blisters, flaking, cracks or holes in the metal) is found, make repairs as required in accordance with the maintenance manual Chapter 20 or install a replacement, serviceable part then proceed to step (7).
7. If corrosion exists, treat the interior surfaces of the wings, stabilizers and aft fuselage with MIL-C-81309E (ACF50) or MIL-PRF-81309H (Corrosion X) corrosion inhibitor or equivalent.

NOTE: Remove the wing tips, elevator tips, tail cone and all inspection panels to facilitate corrosion treatment. Use corrosion inhibitor application equipment necessary to reach all internal surface areas. After application, inspect the interior of the aircraft to ensure all surfaces have been completely treated. Repeat corrosion treatment as required.

8. Record compliance in the aircraft log book and note the time for the next inspection.

B. Required Action: Horizontal Stabilizer Inspection - AA1 series, All - AA5 Traveler, All

All AA1 series aircraft and the AA5 Traveler have horizontal stabilizers that are similar in design and use the same attachment method for the elevators. We have received several reports of significant delamination of the horizontal stabilizers on these aircraft. This has led to the detachment of the outboard elevator attach bracket on one aircraft, resulting in loss of elevator control and significant damage to the aircraft.

1. Inspect all bondlines of the horizontal stabilizers as called out in A, 1-4 above (FIGURE 3) with emphasis on the outboard rib at the outboard elevator bearing support assembly (FIGURE 4).
 - a. Remove the outboard bearing support assembly from the outboard rib of each stabilizer. Ref: AA1 or AA5 Series Maintenance Manual Chapter 55.
 - b. Inspect the outboard rib in the shaded area for cracks, buckles, corrosion and delamination (FIGURE 4).

- c. Inspect the two MS210471L3K nut plates for security and condition. Replace if corroded or rusty.
 - d. If no damage is found, remove paint and surface corrosion from the rib, clean with acetone and repaint. Make sure paint covers the bondlines.
 - e. Reinstall the bearing support using new MS24694S53 screws.
2. If any delamination or a previous repair is found on either horizontal stabilizer, accomplish the following.
- a. Remove the elevator and the stabilizer as required to gain access to the affected bond joints. Ref: AA1 or AA5 Series Maintenance Manual Chapter 55.
 - b. Repair delaminated bond joints in accordance with instructions in SK-125B, D-1 and D-2.
 - c. To protect the integrity of the 301030-501 bearing support assembly attach point, install rivets in accordance with SK-125B, D-1 in the top and bottom of the outboard rib and rear spar bondlines (Figure 4).

NOTE: 1604-0412 rivets may be substituted for CR3242 -4 - 2 rivets.

CAUTION

See Figure 5 for rib and spar flange center line location. When the rivet pattern has been established, visually verify that proper distance from the edges of the flange is maintained as each hole is drilled. Hole pattern may need to be modified.

A rigid ruler or other suitable measuring device may be used as an aid for locating the flanges of the center rib and forward spar. Reference Figure 5.

- i. To locate the forward spar flange, insert a ruler into a lightening hole in the rear spar of the stabilizer until it contacts the forward spar web. Make sure the end of the ruler is resting solidly against the spar web and not on a spar lightening hole flange and, as close to perpendicular to the spar as possible. Note the distance from the stabilizer trailing edge to the spar web. Remove the ruler and on the outer surface of the stabilizer (at the same location), measure that distance from the stabilizer trailing edge forward and mark the location of the spar web. Repeat this process as necessary along the spar to establish a line indicating the forward spar flange location. Mark rivet lines in accordance with SK-125B Figure 3.
- ii. To locate the stabilizer center rib flange, insert a ruler into a lightening hole in the inboard end of the stabilizer until it contacts the forward rib. Make sure the end of the ruler is resting solidly against the rib web and not on a lightening hole flange and, as close to perpendicular to the rib as possible. Note the distance from the stabilizer inboard edge to the rib web. Remove the ruler and on the outer surface of the stabilizer (at the same location), measure that distance from the stabilizer inboard edge outward and mark the location of the rib web. Repeat this process as necessary along the rib to establish a line indicating the center rib inboard flange location. Mark rivet lines in accordance with SK-125B Figure 3.

- d. Reinstall the stabilizers if removed and reinstall the elevators. Ref: AA1 or AA5 Series Maintenance Manual Chapter 55.
3. Inspect the interior of the horizontal stabilizers for corrosion. If only light surface corrosion (white ash appearance) is found, proceed to step (4). If major corrosion (blisters, flaking, cracks or holes in the metal) is found, make repairs as required in accordance with the maintenance manual Chapter 20 or install a replacement, serviceable part then proceed to step (4).
4. If corrosion exists, treat the interior surfaces of the stabilizers with MIL-C-81309E (ACF50) or MIL-PRF-81309H (Corrosion X) corrosion inhibitor or equivalent.

NOTE: Use corrosion inhibitor application equipment necessary to reach all stabilizer internal surface areas. After application, inspect the interior of the stabilizers to ensure all surfaces have been completely treated.

5. Terminating action of Part B of this service bulletin is either of the following:
 - a. A finding of all horizontal stabilizer bondlines to be structurally sound.
 - b. The repair of all delaminated horizontal stabilizer bondlines plus the installation of rivets in the outboard rib and rear spar bondlines in both horizontal stabilizers in accordance with B2.
6. Record compliance in the aircraft log book and notify True Flight Aerospace, LLC of compliance.

PART B COMPLIANCE NOTIFICATION:

1. Notify True Flight Aerospace, LLC of the following by email at Info@TrueFlightAerospace.com
Please use the subject "SB-195 Report N*****" and include the following in your message.
 - a. Owner
 - b. "N" number
 - c. Model and year of manufacture
 - d. Serial number
 - e. Airframe total time
 - f. Is Aircraft Regularly covered/hangared?
 - g. Condition encountered as a result of SB-195 Part B inspection
 - h. Action taken
2. Email is preferred method of notification but if unable please use the Compliance Form (SB-195 CFB1) at the end of this document and mail to the address below.

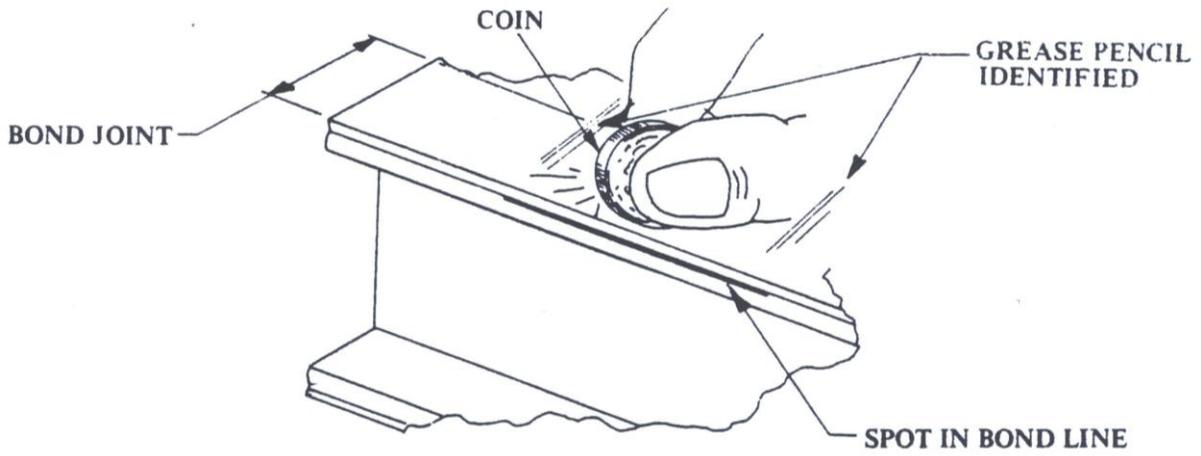
TRUE FLIGHT AEROSPACE, LLC

2300 Madison Highway

Valdosta, GA 31601

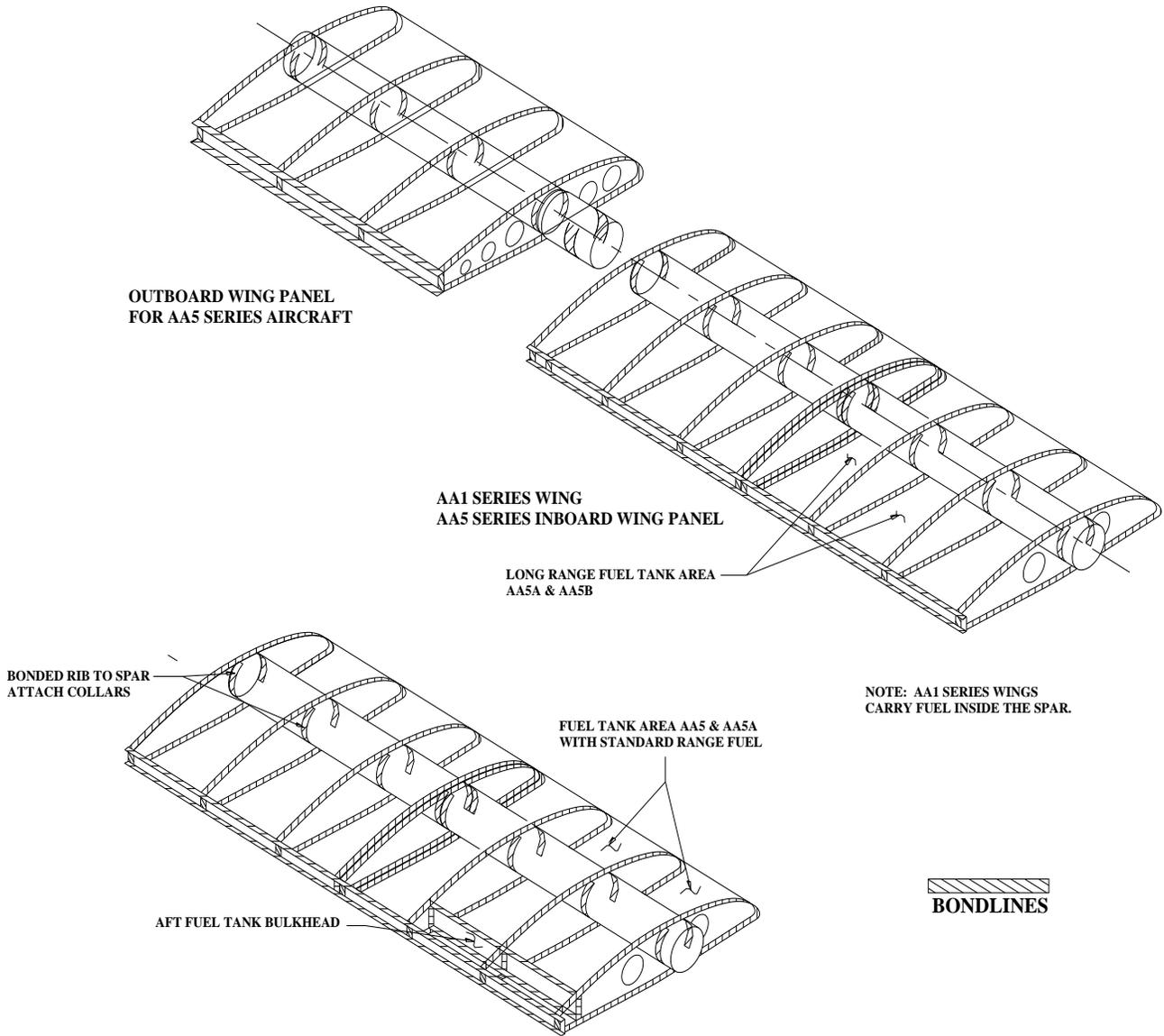
Phone: 229-242-6337

Info@TrueFlightAerospace.com

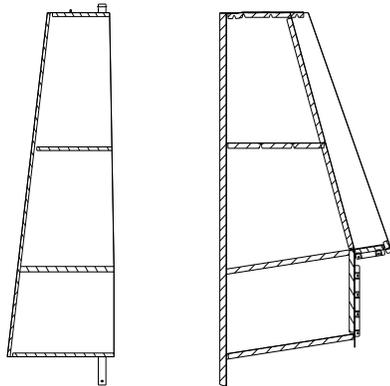


**FIGURE 1
TAP TEST**

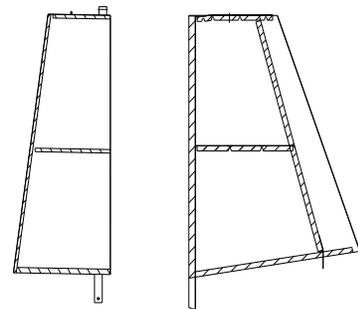




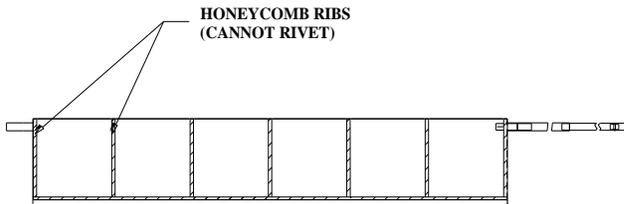
**FIGURE 2
WING BONDLINES**



RUDDER & VERTICAL STABILIZER
AA5, AA5A AND AA5B

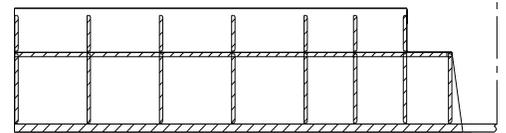


ELEVATOR AND HORIZONTAL STABILIZER AA1 SERIES AND AA5
RUDDER AND VERTICAL STABILIZER AA1 SERIES

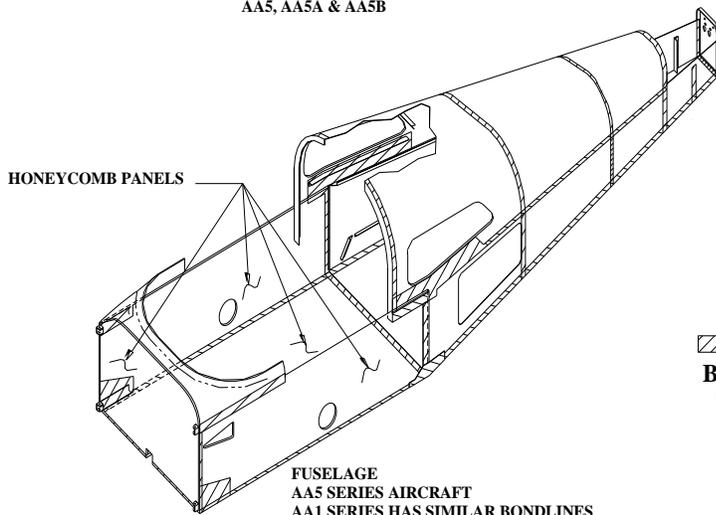


HONEYCOMB RIBS
(CANNOT RIVET)

AILERON ASSEMBLY:
AA5, AA5A & AA5B

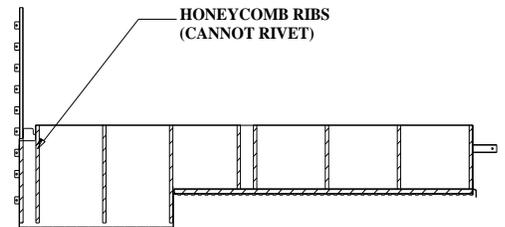


HORIZONTAL STABILIZER
AA5A & AA5B



HONEYCOMB PANELS

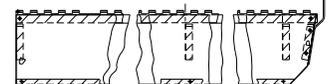
FUSELAGE
AA5 SERIES AIRCRAFT
AA1 SERIES HAS SIMILAR BONDLINES



HONEYCOMB RIBS
(CANNOT RIVET)

ELEVATOR ASSEMBLY
AA5A & AA5B

BONDLINES
NOT TO SCALE



TRIM TAB

SYM

FIGURE 3
AA1 SERIES AND AA5 SERIES
BONDLINES

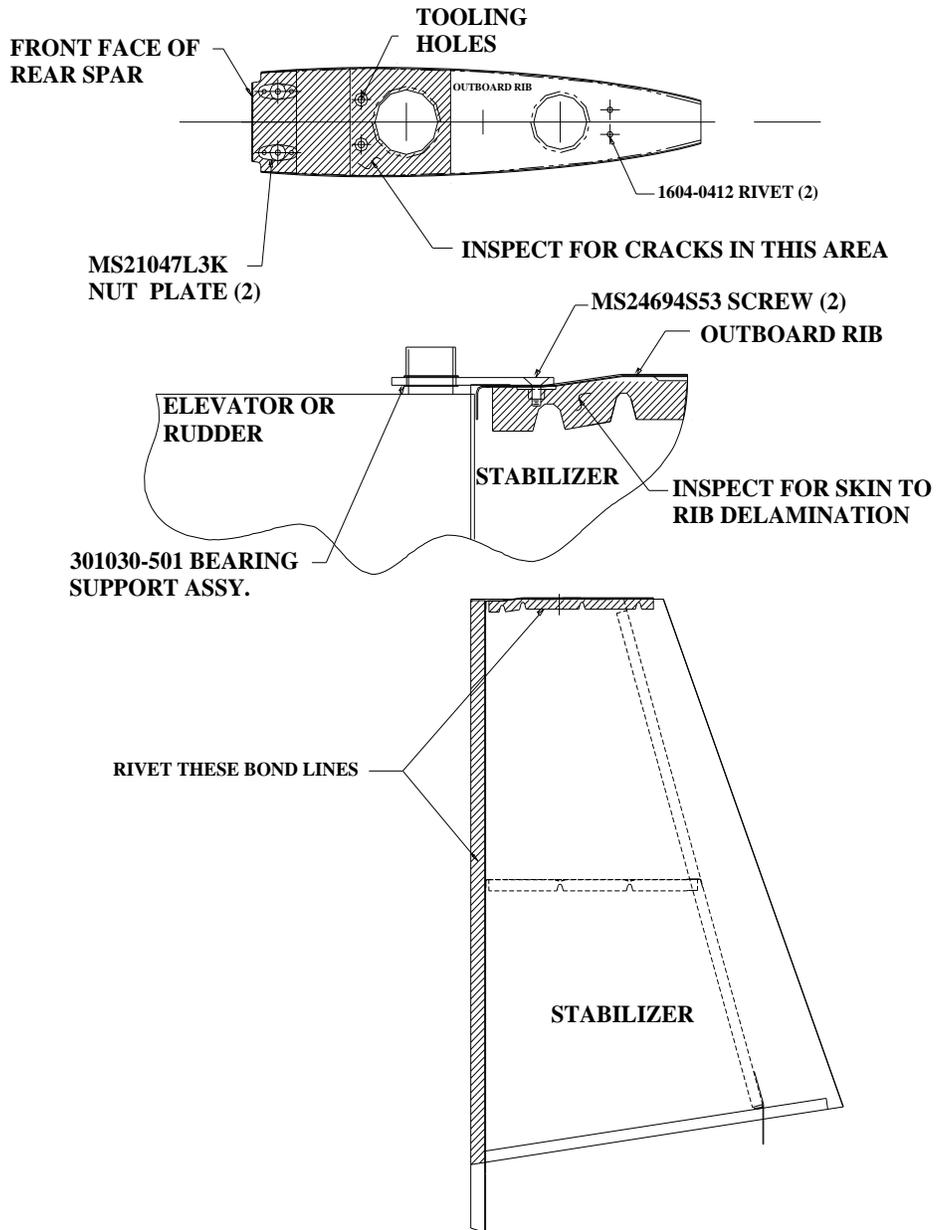


FIGURE 4
STABILIZER OUTBOARD RIB INSPECTION
AND RIVET AREA AA1 SERIES & AA5

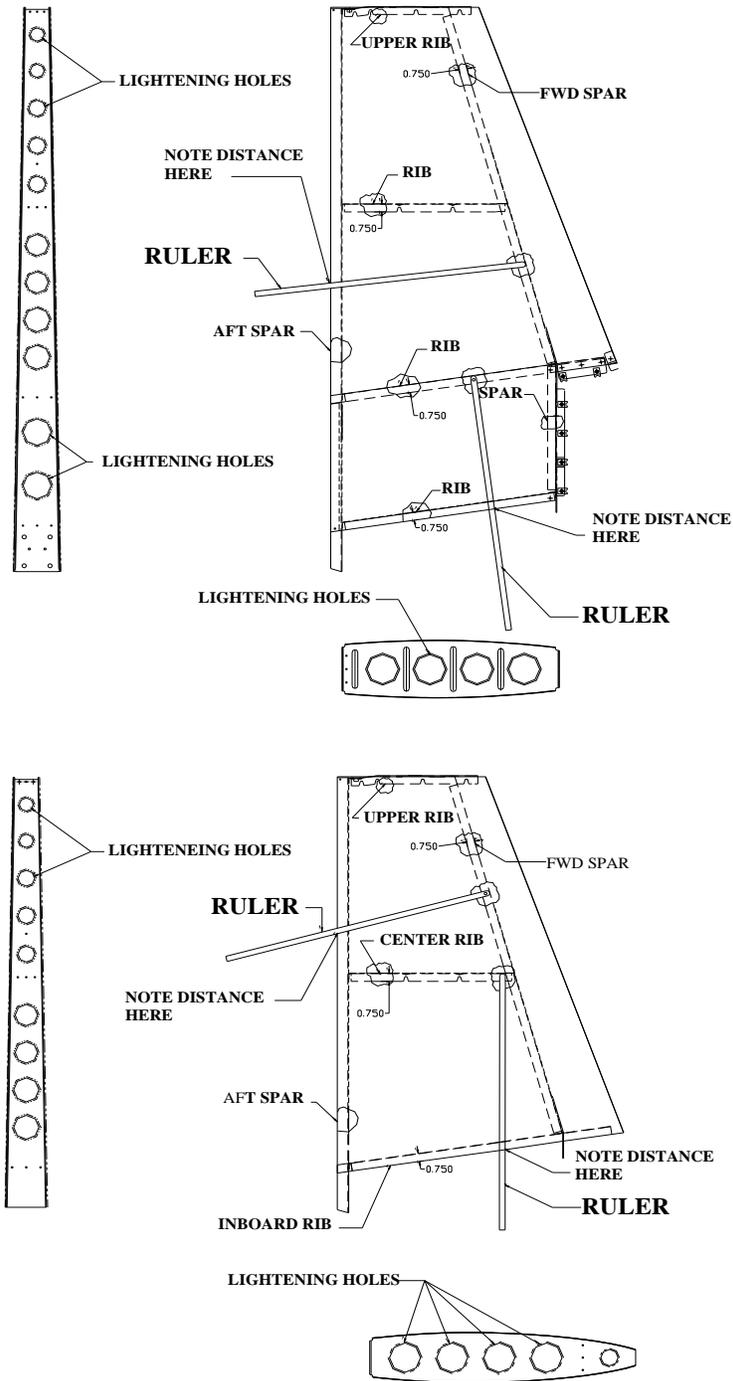


FIGURE 5
SAMPLE RULER LOCATIONS, HORIZONTAL AND VERTICAL STABILIZERS



SB-195 Part B Compliance Notification

Owner _____

“N” Number _____

Model _____ Year of Manufacture _____ Serial Number _____

Airframe total time _____ Is Aircraft Regularly covered/hangared? _____

Condition encountered as a result of SB-195 Part B inspection:

Mailing Address:

TRUE FLIGHT AEROSPACE, LLC
2300 Madison Highway
Valdosta, GA 31601