

Service Bulletin 52

Subject: Sportsman Stabilizer Pin Engagement

Applicability: All Sportsman Aircraft


Compliance Time: Before 1st flight or next 10 flight hours.

Discussion and Background Information:

Glasair Aviation has recently discovered that, under certain conditions, there exists a potential for the horizontal stabilizer attach pins to have inadequate engagement in the spherical bearings on the fuselage attach bracket. This condition primarily exists on factory pre-built Sportsman fuselage assemblies, where the bulkheads have been installed at the factory. The problem arises with variation in the bulkhead thickness or if excessive laminates have been made by the customer on the aft face of the E-bulkhead to correct any angular misalignment of the D and E-bulkheads. These variations could potentially move the stabilizer aft, which in turn would keep the forward stabilizer spar alignment pins from obtaining proper engagement. For this reason, it is felt that a maximum allowed dimension should be set for the relative distance between the D and E-Bulkheads and that proper pin engagement is verified by the builder.

Note: We have not seen this problem on fuselage assemblies built by the customer where the E-bulkhead is located and positioned using the stabilizer assembly as prescribed in the Assembly Manual. The method described in the Assembly Manual keeps the E-bulkhead up tight to the aft stabilizer bracket, and as long as the stabilizer is positioned all the way forward on the two locating pins, proper pin engagement is ensured.

On factory prebuilt fuselage assemblies, the set distance between the aft face of the E-bulkhead and the forward face of the D-bulkhead is approximately 11.56-11.60 inches. A measurement from the forward face of the aft spar attach bracket on the stabilizer to the front face of the forward stabilizer spar build up measures approximately 11-3/8. This is illustrated in Figure 1. Adding the 1/16" thick pin shoulder on the forward side of the front spar and the 1/16" aft protruding shoulder of the spherical bearing to this 11-3/8 gives the ideal D-bulkhead to E-bulkhead spacing of 11-1/2".

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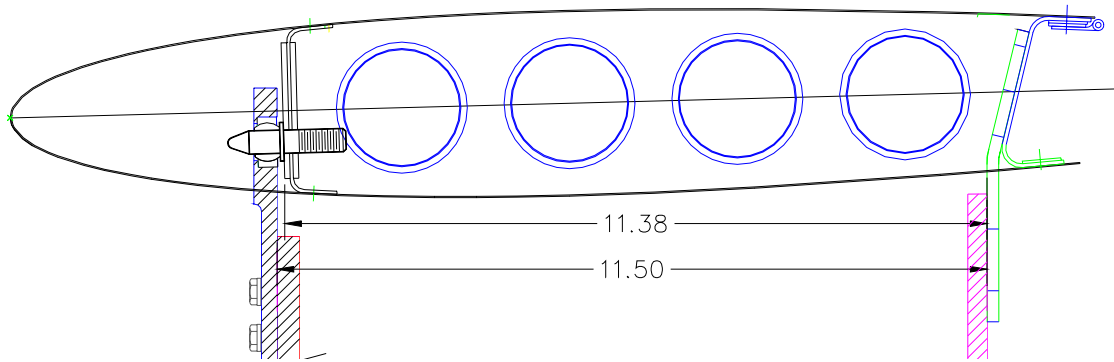


Figure 1: Ideal Dimensions for Bulkheads D and E

Required Action:

A. Verify Condition.

Use an inspection mirror to determine if the tapered edge portion of the pin is not more than 1/32" inside the bore of the bearing. If so, you have proper pin engagement.

If you cannot make this determination with the mirror, measure the distance between the aft face of the E-bulkhead and the forward face of the D-bulkhead. If your spacing is greater than the 11.63 shown in Figure 2, you must rework your installation in either one of two ways.

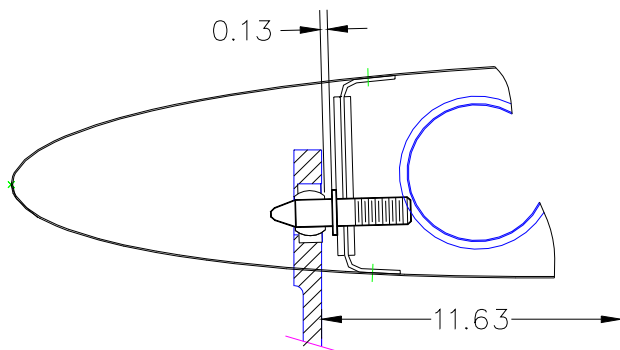



Figure 2: Maximum allowed Dimension between Bulkheads D and E

B. Remedy.

If your strakes are not installed on the airplane, you may remove laminates from the aft side of the E-bulkhead in the area under the arms of the attach bracket, until you fall inside the 11.63 minimum dimension. It is recommended you relieve it until the measurement is 11.56. You should then laminate the same thickness of plies (as those that have been removed) on the forward side of the E-bulkhead over an area twice as wide as what was removed.

If your strakes are already installed on the airplane, then you should replace the pins on your horizontal stabilizer with two pins that are longer (302-00011-03). These pins are available through Glasair Aviation. You will need to cut an inspection hole in the bottom of your stabilizer between the two main center ribs to access the nuts on these pins. You may install the same backup ring and cover as that used on the wings, namely the 201-33001-01, 201-33002-01, (4) K-1000-08 and (4) AN526-8R6 fasteners also available through Glasair Aviation.

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