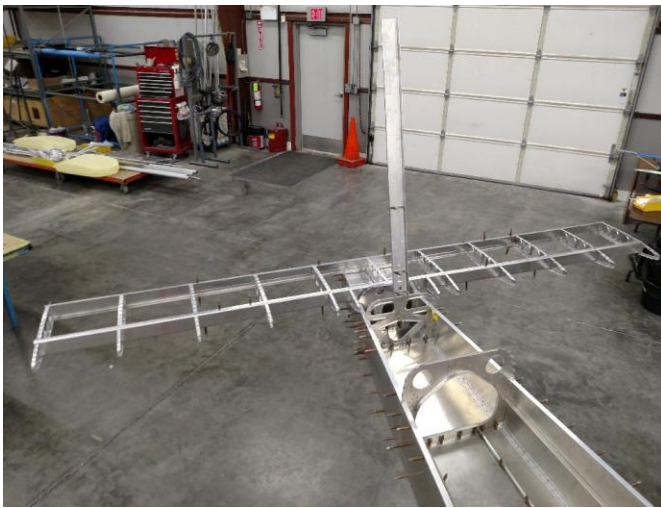


1-12-17 Outbound Progress Report

Horizontal Stabilizer

In keeping with the design intent to maximize on building ease, the horizontal stabilizer features identical spars front and aft. Made of three nesting channels, the spars come final hole sized, deburred and ready to cleco assemble, then rivet. Our tooling worked out very exact for the nesting, which can sometimes be a challenge. Because of the three channels, three different rib lengths are required between the spars. Your parts label as well as a sequence of tooling holes denotes rib location. Of course with a .10" difference in rib lengths it will be obvious if you try to fit one in the wrong location.

The skin layout should have all holes located and in final hole size. Even the holes are already in the spar caps, meaning no transfer drilling from skin to spar. To assure no twist in the horizontal stabilizer we may need to provide end jigs made of MDF that key into the rib tooling holes. These would be mounted to your build table in exact alignment and fixture the surface during riveting.



Vertical Fin Spar, Rudder and Elevator

The vertical fin spar is constant width, and is the same depth as the horizontal stabilizer spars. This means elevator and rudder can share hinges and ribs. At the root of the vertical fin spar is three layers of attach tangs. These transfer the loads into the bulkhead. Bolts will retain the vertical fin for ease of removal.

Since the rudder construction is like the elevator, we may include a trim tab that could be ground adjusted or in flight.



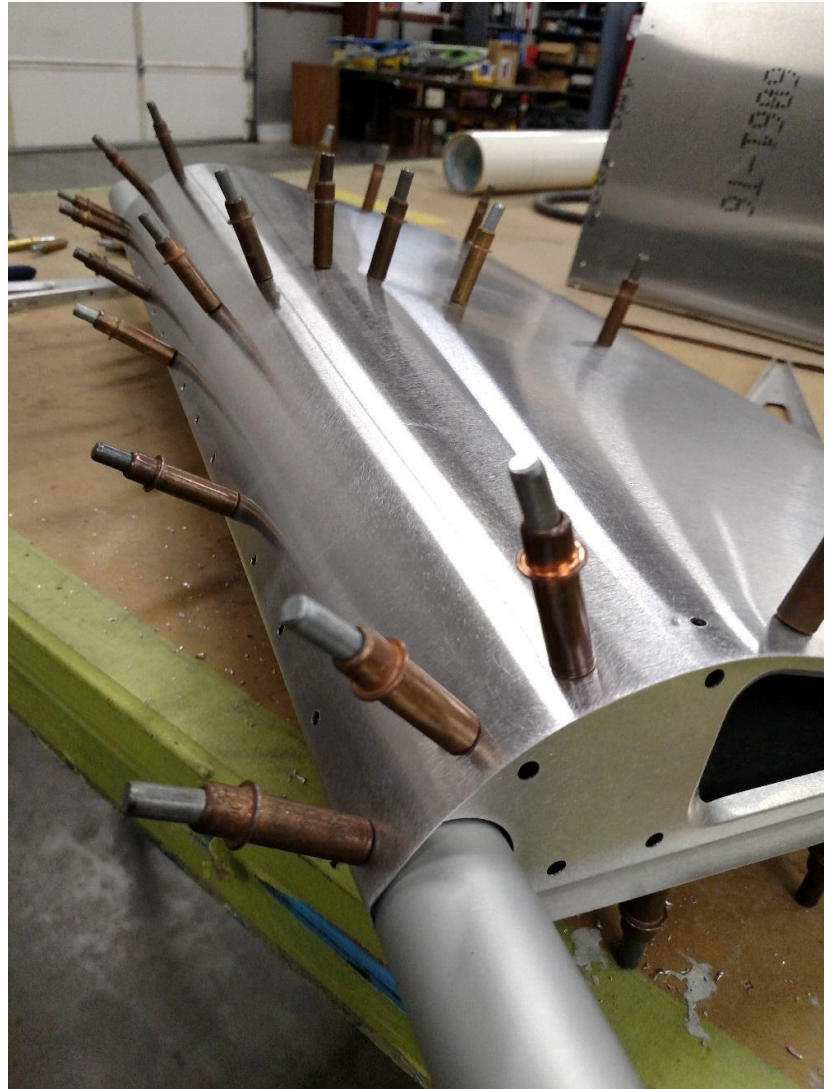
Engine Options

We are getting a lot of inquiries into what engines will officially work on the S-21. The mount and cowling will fit the Titan 340, which has the dyna-focal type 1 mount. The Lycoming 233 and 320 will also fit the mount and cowl. Other options may include the Rotax 912ULS, 912iS, 914, and when ready, the 915. There may need to be airframe adjustments to actually use the Rotax line of engines, as they are significantly lighter.

The Continental O-200 could be a viable option, we have had some interest, and if it grows the mount may be offered.

Aileron and Flap Assembly Test

The aileron and flaps are based around a tube spar. The spar will come with one set of holes to match the skins. Assembly starts with clecoing the skin to the tube spar and rolling it just slightly to form the curve. Ribs are clecoed to the skin, then the spar is slid into place and squared up in the holding fixture (provided); the second set of holes are then transfer drilled into the tube. You would clean up the chips, and burrs and rivet. Prior to all this assembly you will have attached the flap and aileron hinge plates to the assigned ribs. The whole process should be a few hours to build all four surfaces. The ailerons feature a heavy wall tube to provide most of the counter balance required.



New Order Form

Take a look at the new order form. We have dropped the BAK idea, in favor of offering more kits. The total cost is the same, and it offers the option of ordering kits as you progress with the build or have the finances. Some items are yet to be determined and will be listed as they are decided on.

Outbound Building Classes

Look online for a schedule for Outbound Building Classes, which will be held at the RANS factory or other locations. Expect this later in the year. We may even demonstrate the ease of build on some components at major airshows. We remain dedicated to the goal of bringing you a great performing

plane
building
that
precise,
timely.

with
ease
makes it
fun, and



We received our first mill run of the XL lift strut, to be used on the S-21. As per RANS tradition, these lift struts will arrive to the builder CNC machined, with all of the holes and end profiles complete.

Thanks for stopping by, stay tuned! RJS