

S-21 Outbound Progress Report 20

Sun and Fun 2018

On the way to Sun-n-Fun we had plenty of time to compare the Outbound with the Rotax 912ULS to the Titan 340 powered Raven with the 141 wing. Of course the Raven had the greater climb rate and speed, but what stood out, was the difference in fuel burn. Typically the bigger engine equipped Raven burned only a half-gallon more per leg, and that was with a slight speed advantage of 5 knots. If we matched speeds the burns were even. The prop of the Raven was a 80"x50" Catto, which offered very aggressive climb performance. We have other props to try and will post performance numbers, which will help to confirm the projected performance of the Outbound with the Titan engine.

At the show we did a lot of demos in both planes. We had very positive remarks about the handling, fit and finish of the S-21. We were all impressed at how well the plane performed with the humble power source of the Rotax. We saw rates of climb over 1000 FPM with two up and over half fuel. There were constant comments about the planes harmonized handling. There was no issue at all operating out of Paradise City for either plane. The Raven with the 340 showed off it's muscle with short take off runs and steep climbs touching 2000 FPM. Many took demos in both planes and got a great preview of how a Titan powered Outbound would perform. From my experience flying both, the only differences are a slightly lower cruise speed and a touch more adverse yaw. The Outbound roll couples better since it has a longer tail moment and ample sized vertical stabilizer.

We finished up the week with several new orders and many very happy customers who already pre-ordered. It was great to meet everyone and show off the plane we believe will not only prove to be a fun build, but a great performing plane for many years to come.



S-21LS and S-20LSM

On March 15th RANS certified two new planes into the SLSA status. The first, the S-21LS is equipped with the Rotax 912ULS and a panel right out of the Raven program. The plane offers up a 500-pound payload under the current 1320 gross. Please note we are ready to go to higher gross weights, since the Outbound was tested to 1800 at 6gs limit load. That means we can even expand it well beyond 1800 pounds, provided a decent power to weight ratio is maintained. For the Rotax powered S-21LS the gross should stay near 1320 for best performance, however flight test at 1500 gross produced acceptable performance (reference our sale page online for the S-21LS). The plane is a super substantial light sport, and should find favor as a trainer and touring plane. Again, check out the details on our web site for this feature packed offering at a base price of \$119,000.00.

The second plane earning SLSA status is the Raven S-20LSM. This plane is a powerhouse, with the Titan 340 180 HP engine and the 141 metal wing. This plane has the iconic appeal of a backcountry tube and fabric fuselage, mated to our innovative 141 metal wing. Performance is stellar; check it out on our web page!



More Testing and Expansion of the S-21 Envelope

We drop tested the S-21 at 1800 pounds gross and decided to upgrade to 2000 pounds. We are happy to report the airframe passed. The extra margin testing to a 6g-limit load allows expansion of the gross weight. No doubt this airframe will see power plants above the current 100 and 180 HP ratings, and the extra gross capacity will be a welcome feature. We are already looking into 200-plus HP engines that may be a good fit.

We have successfully completed the drop test of the trike gear configuration at 1800 pounds.



Assembly Continues of Outbound #2...

As we assemble the second S-21 we are testing the fit of parts, and tweaking the manuals. Major components such as the elevator, rudder, horizontal and vertical stabilizer are now in final form and production is rolling.

The tail cone and cockpit cage is also going through the process. The good news is we are very happy with the fit and finish, and ease of assembly.

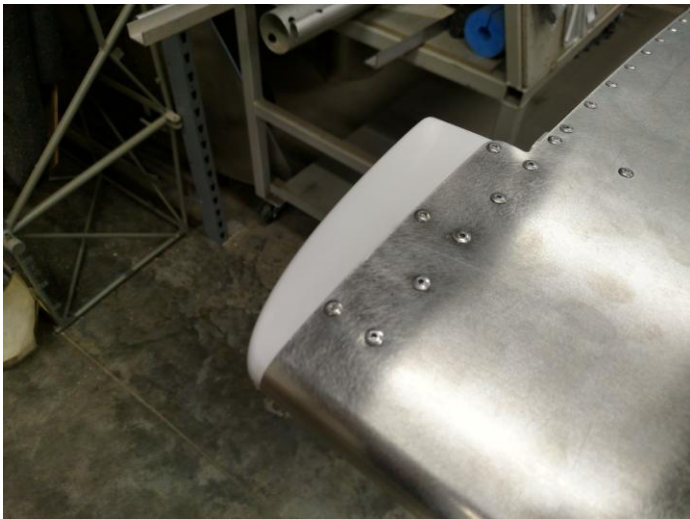
As we begin series production of ready-to-fly S-21's we will be making builder videos to bring you into the build process as done by our experts at the factory.



Adjustment of the angle of incidence of the horizontal stabilizer is a standard feature.



Simple method to assure the bearing for the elevator horn stay in place is this rivet/washer combo.



Nice fitting thermal formed parts make for fast assembly.

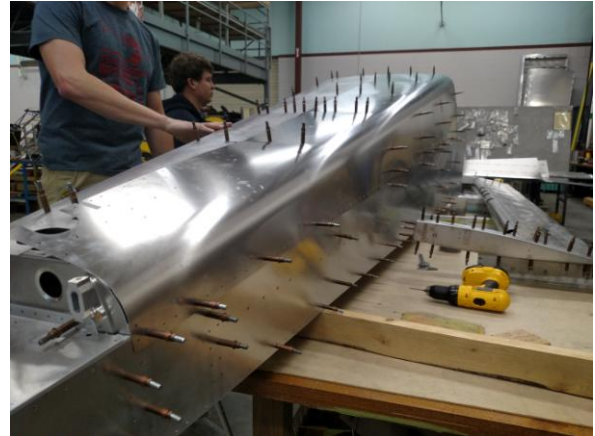
S-21 Production Version Improvements

No reverse rudder cables: The rudder pedals now feature a set of horns to attach the rudder cables for a simpler install. This offers better ground handling since the system is direct to the rudder and tailwheel.

Preformed Skins: The pre-formed skins for the top of the tail-cone and lower corner panels on the boot cowl are going to make the builder smile. They are well machined and fitted.

The tailcone and cage matches up very well. Both the cage and tailcone have been dialed in to a precise fit. Builders will be able to pre-assemble the tailcone and mate it to the cage at any point in the construction. This will serve well for those with a limited building space. For example, you could build up the cage to the point the panel, engine, boot cowl, and most of the interior work are

complete. Then you can attach the tailcone, then the skin to the cage. We plan to do just that for our series production of light sport planes.



Leaving the tail cone off to assemble the cockpit cage components can shave off many hours by not having to walk around a whole fuselage.

There are 22 thermoformed parts that come stock in the Outbound kit. These include close-outs for the interior. Some wonder why we bother with providing the components to finish out the inside of the plane. Safety and creature comfort are the main reasons, besides looking finished. The interior kit provides protection from items falling into the belly of the plane and possibly jamming the controls. We know some will opt not to install these parts, but we strongly recommend it! On a side note, there will be a close-out to cover over the rudder cables running down the middle of the floorboard, offering a very nice finish and protection for the cables.

We are offering an optional gear leg fairing, which will clean up the junction of the gear to the belly. The same fairing should work to cover the trike main gear.

Kit Production

Full kit production is underway. Updates of delivery will be sent to depositors as soon as kits are near ready for shipment.

Thanks for stopping by...more to come...RJS