Team Rocket 2-16-2024 newsletter

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Great news!

The shop build is virtually complete now. We received our first large shipment of aluminum sheets to be used in production on Tuesday. Our CNC router, rubber pad press, and our press brake(s) are now all up and running. Even our heat treat oven is up and running, though we are very likely going to add a larger capacity oven later when the need arises.

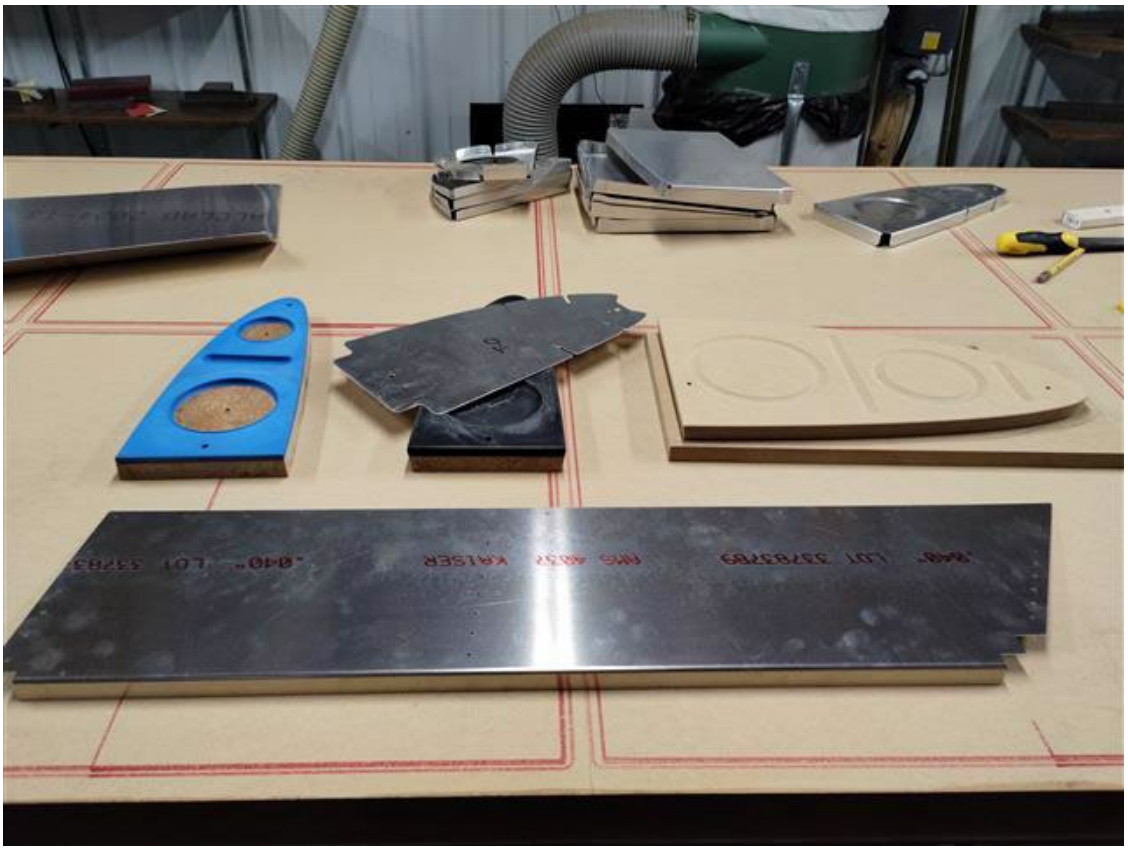
In the photo above, Scott Burge is cutting out rib blanks on the 4' x 16' CNC router. This machine is amazing. Scott and Toby Konnersman tweaked it out to the point that we can cut tabs in material as thin as .025". The big Becker vacuum pump(s) are zoned so that we can utilize any, or all, of the table surface as needed.

Another thing that we're doing that others might not be doing is to set up the machine code so that each part gets a roughing AND a finish pass. This translates into minimal edge clean up for the customer, which should save many hours of labor.

Here's a couple of rib blanks being cut out. These are T-0 and are destined to be test parts for the new heat treat oven.

The oven was used previously by another aviation company. I'm here to tell you that this thing could seriously cook some pizza... and FAST!

The ribs seen in the photo to the left will get to spend some time in here, then immediately get dunked in the water tank.



The part in the foreground is one of the F-013 tunnel ribs. These floated to the top of the list since we needed a set ASAP for a customer. They turned out great!

The other parts in the background are mostly test pieces, including "composite" form blocks which were 3-D printed then bonded to a filler piece of MDF. This process works OK, but it does have limitations, but it is a great way to test new blocks... even if they might get squished a bit in the press if you put too many tons on them.

BTW, Youtube has some hysterical hydraulic press videos of idiots smashing all manner of things.

The MDF block on the right is for a non-Rocket project, but is a good example of an MDF form block. MDF holds up reasonably well against the press and it's cheap. It's also possible to harden the MDF with various sealants which can help it to last longer.

Some shops don't want to divulge "trade secrets". I say "BAH!" They're all on the Internet anyway. Here's a simple trick to keep your CNC table top intact.

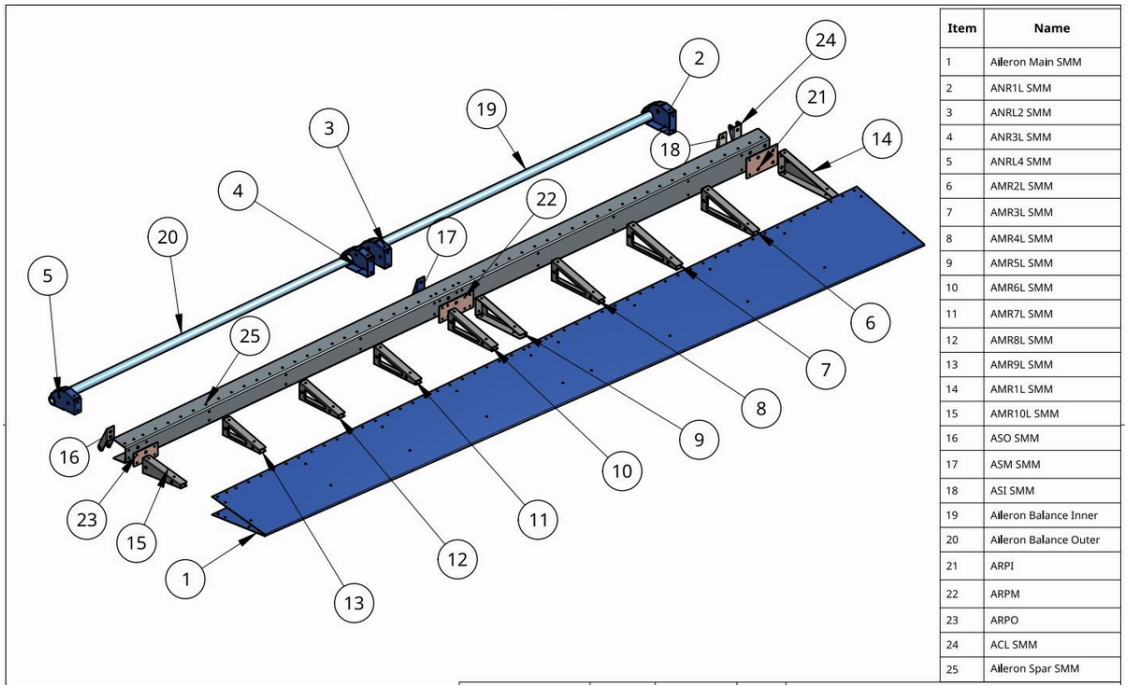
Rather than milling into the table top, which is gonna happen soon enough, you can lay down a layer of masking tape then use cheap Harbor Freight super glue to bond a layer of MDF to it. The tape stays put, and the super glue works amazingly well also.

After milling the part, you simply remove all of the sacrificial stuff and move on to the next project. The table top doesn't suffer any unnecessary wear

This technique isn't feasible on larger parts, but it works just dandy on smaller pieces, like this MDF test form block.

We're having Fun!

If this looks like fun, well yeah, it is. It's the "retirement" that I've been looking forward to for years. With Scott and Toby here, it's even more fun. Both of them bring a lot of skill to the table. They are awesome. I can't wait for everyone to meet them at Oshkosh this year.



Item	Name
1	Aileron Main SMM
2	ANR1L SMM
3	ANRL2 SMM
4	ANR3L SMM
5	ANRL4 SMM
6	AMR2L SMM
7	AMR3L SMM
8	AMR4L SMM
9	AMR5L SMM
10	AMR6L SMM
11	AMR7L SMM
12	AMR8L SMM
13	AMR9L SMM
14	AMR1L SMM
15	AMR10L SMM
16	ASO SMM
17	ASM SMM
18	ASI SMM
19	Aileron Balance Inner
20	Aileron Balance Outer
21	ARPI
22	ARPM
23	ARPO
24	ACL SMM
25	Aileron Spar SMM

F-wing update - ailerons

Now that the shop construction has finally abated, we can get back to other more important work... like making aileron parts. And we are!

We're crossing our fingers and working as fast as a bunch of old men can. We're hoping to have something new to show off at Airventure this year. I doubt that we'll have a flying F-wing there, but we're certainly expecting to have something significant to show! Stand by....

Taking orders soon?

We're not saying that we're ready to take orders yet. But we're not saying that we're not going to take your "statement of interest." What we're saying is that if you're ready to put your name on a list, we're ready to write it down and put you in the queue.

Prices have NOT been determined yet. However, we're optimistic that given our complete lack of debt, low overheard, and the fact that me, Toby, and Scott are all a bunch of slimy airplane whores, we'll be able to keep the costs down and keep our prices very, very competitive. We're very, very, very confident that the airframe will be a low percentage of the overall cost of any F1 Rocket or F4 Raider project.

Then once we're really rolling... well, refer to the photo above. It makes us laugh. After all, how do you make a million dollars in aviation? (Start with two million dollars, of course!)

Static port options

A couple of questions that come up continually:
1) Where do I put the static ports?
2) Why is my airspeed way off?

Well, #1 is up to you, however, the traditional placement in the middle of the rear fuselage sides seems like it is still the best overall location. This is shown on your RV-4 plans.

Others may disagree, but make them prove their opinion with hundreds of successfully flying examples!! Van's already has proven that their location works fine.

Regarding #2, I believe that the general consensus is that a perfectly flush static port doesn't provide accurate static pressure, possibly because it's buried in the dead boundary layer?

Also, we don't want the static ports sitting way up in the airflow where they'll possibly make their own vacuum, or their own pressure, due to their shape impacting the airflow.

So, what to do? Well, Van's has had reasonably good results using a "pop" rivet as the static port. However, connecting a static line to a pulled rivet tail is less than optimal.

One possible, and very cheap, solution is to make your own static ports. I like 3/16" diameter solid rivets, i.e. AN470AD6-20.

All you need to do is chuck the rivet shank up in a lathe and turn some hose barbs lightly into the shank. It's super easy.

If you don't have a lathe, someone in your EAA chapter likely does. Just bug them to make a handful.

Next, turn the rivet around in the chuck, and drill a small hole all the way through the rivet. This is the air passage. It might come out slightly off center on the other side, but that's OK as long as it can't be blocked when you install the static line inside the fuselage.

Now you can face off the upper half of the manufactured head. See the photo. What you want is a relatively flat profile that will protrude only about 1/16" or so above the skin surface when installed.

Then, to finish the static port, trim off any unwanted excess shank length.

Using a 3/16" push nut is the ticket for keeping the static ports firmly in place in the fuselage sides.

Then just run the static lines to the instrument panel.

Piece of cake... and cheap... and they look nice too.

F1 Evo for sale

From the seller, John O'Keefe:

Due to changes in my life, I need to consider selling my F1 EVO.

I purchased S/N 166 in 2016 from the original builder. The aircraft was approximately 75% complete. I decided to remake the empennage with an RV-8 empennage kit modified per Mark Frederick with additional stiffeners.

Power is supplied by a Lycoming, IO-540 – C4B5 with high compression pistons built by Western Skyways. The propeller is a new Hartzell model DHC–11124R.

The included Blue Mountain avionics and auto pilot will need to be replaced. Otherwise, rigging and assembly of the tail, redoing the avionics, finishing fiberglass parts, interior and paint are the main projects for the new owner.

I am asking $110,000 for the project.

To see more photos: F1 Evo project

Thanks,
John O'Keefe
okeefejohn13@gmail.com
509-322-1630
located at Winthrop, Washington at C52

Items for sale. Repeated from the last issue:

See the previous issue for details. The previous issues can be found in our Dropbox repository or at Team Rocket newsletters

- Phlogiston spar, ribs, and LE skin. $12,500. Contact Vince
- RV-4 completed wing - partly converted for F4 use. $6500. Contact Vince
- F4 Raider - Pending - Contact Ray Ward
- Luscombe 8F. Contact Ray Ward 4luscombes@gmail.com 843-263-5816

Toll-free number cancelled

We dropped our toll-free phone number. It was rarely used, so why keep paying for it? So, if you dial that old number and someone answers in China, well, we warned you!

Vince Frazier,

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