Team Rocket Newsletter June 13, 2023

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Bob Baker flew his IO-550 powered F1 Rocket earlier this month.

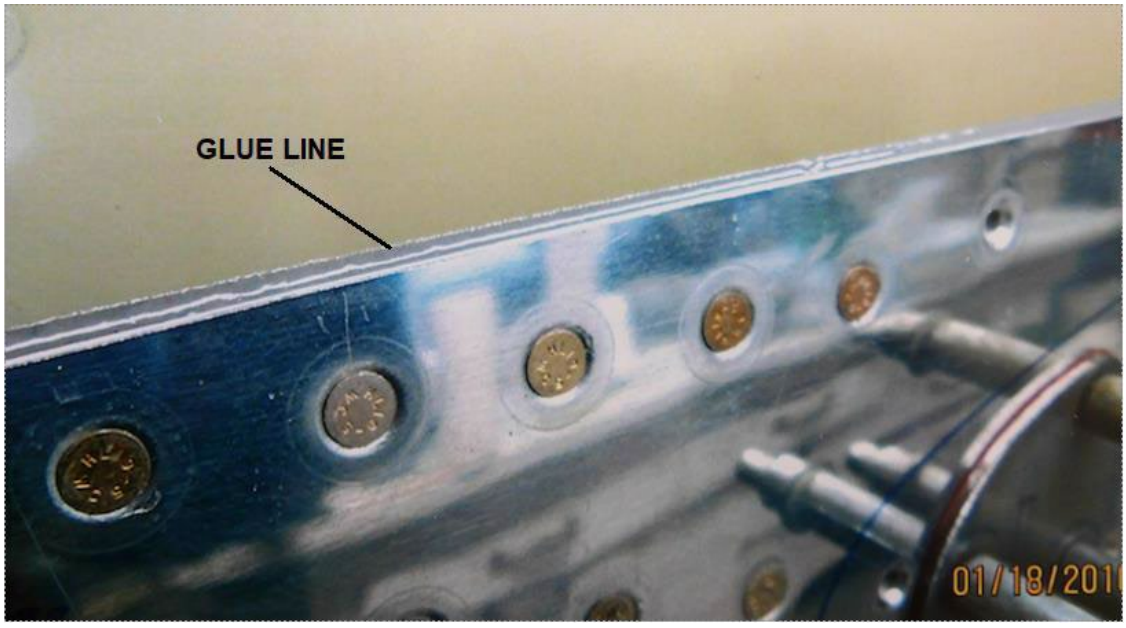
Here it is over western Oklahoma.

It is heading for the paint shop now, with Bob planning to do the work himself. He is well qualified to do the work, having previously painted other aircraft, including his P-51 Mustang (or was it Mustangs?).

Bob chose a Hartzell composite 3 blade prop typically used on Cirrus aircraft and reports that it really performs. "A completely different animal" says Bob. He should know. Bob already owned an F1 Rocket and now has two!

By the way, take a look at those prop blades in the photo above. To say that they have a fat chord is an understatement.

With a bit of luck, and some more of Bob's hard work, we hope to see this new machine at Oshkosh in a few weeks. I can't wait!



Gluing skins and heat treating rivets:

Some award winning aircraft are so nearly perfect that one might wonder "How did they do that?" Well, one of their tricks is to bond and then rivet the skins. This process is definitely NOT for everyone, and it is definitely NOT required.

Gluing skins:
A very brief description of how it works is as follows:

1. build the parts to be bonded, taking care to fit them perfectly, or shim them as needed, to minimize the thickness of the glue joint.
2. Clean, scuff, mask, apply structural adhesive glue, cleco and let set, while cleaning off any excess.
3. Rivet as usual.

Sure it sounds easy, but there are many more details in the PDF that I just posted in the Dropbox folder at: optional skin gluing process specification - Rev C

Heat treating rivets:

There is a lot of info online regarding this subject. You should investigate it on your own because some "experts" recommend against heat treating 2117 alloy rivets depending on their surface treatment, i.e. anodized, alodined, etc.

Here is a general link that describes the heat treating process: 2117 aluminum material properties

The purpose of heat treating your 2117 alloy rivets is to temporarily soften them. Here is what the URL directly above mentions about the process:

Heat Treatment *The aged T4 temper is produced by solution annealing at 935 degrees F for sufficient time to permit thorough heating, followed by a room temperature water quench. Aging from this treatment then occurs normally at room temperature.*

Aging *Aging, following the solution anneal (see "Heat Treatment") occurs naturally at room temperature to product the T4 temper.*

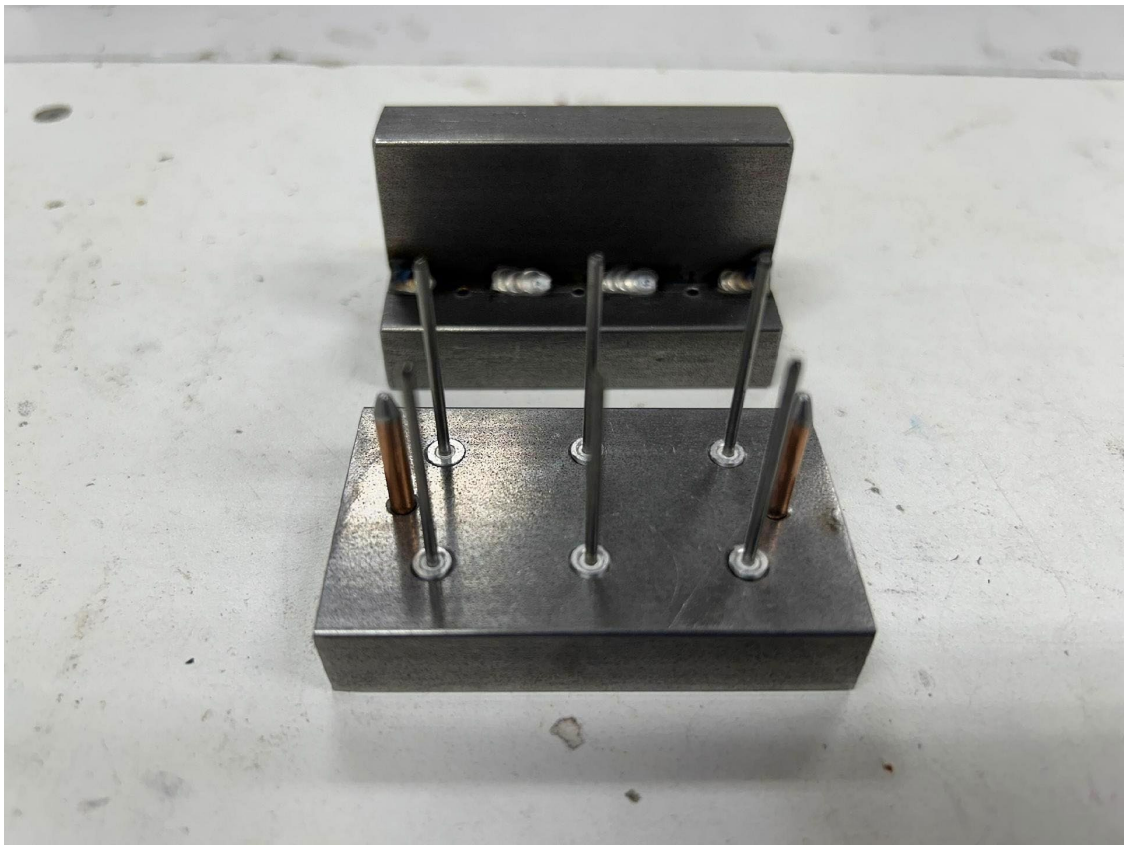
Done correctly, the 2117 alloy rivets should drive like soft alloy rivets, and thereby cause less distortion to the adjacent skins, then slowly re-harden themselves to the T4 condition over the next few days or weeks.

Note that I say "done correctly" There is no wiggle room for using an uncalibrated oven. You need to double, or triple, check the temperature. I use Tempil sticks to bracket the desired 935 degree F temperature. An infrared thermometer is a good backup to monitor the temperature IF you also calibrate your thermometer.

I use a stainless steel "tea infusion ball" to contain the small quantities (50 to 100 or however many you can drive in an hour or two) of rivets during heating. I leave them in the oven for 5 to 10 minutes, depending on how many I'm heating. Then grab my 12" tweezers, open the oven, and IMMEDIATELY quench the tea ball in room temp water.

IMMEDIATELY means one second preferred, two seconds is OK, and anything over 3 seconds is grounds to reject that batch of rivets, toss them in the trash, and start a new batch.

Some of you may want to use these techniques. You know who you are!



David Howe, a true friend of everything related to Rockets, posted information about making sealed shank rivets for use in sealing fuel tank leaks. See it here https://vansairforce.net/community/showthread.php?t=217438

These modified rivets solve the problem of not having any 3/32" countersunk head sealed rivets available. So, in effect, these are similar to "Oops" rivets in that they have a 3/32" head with an 1/8" body.

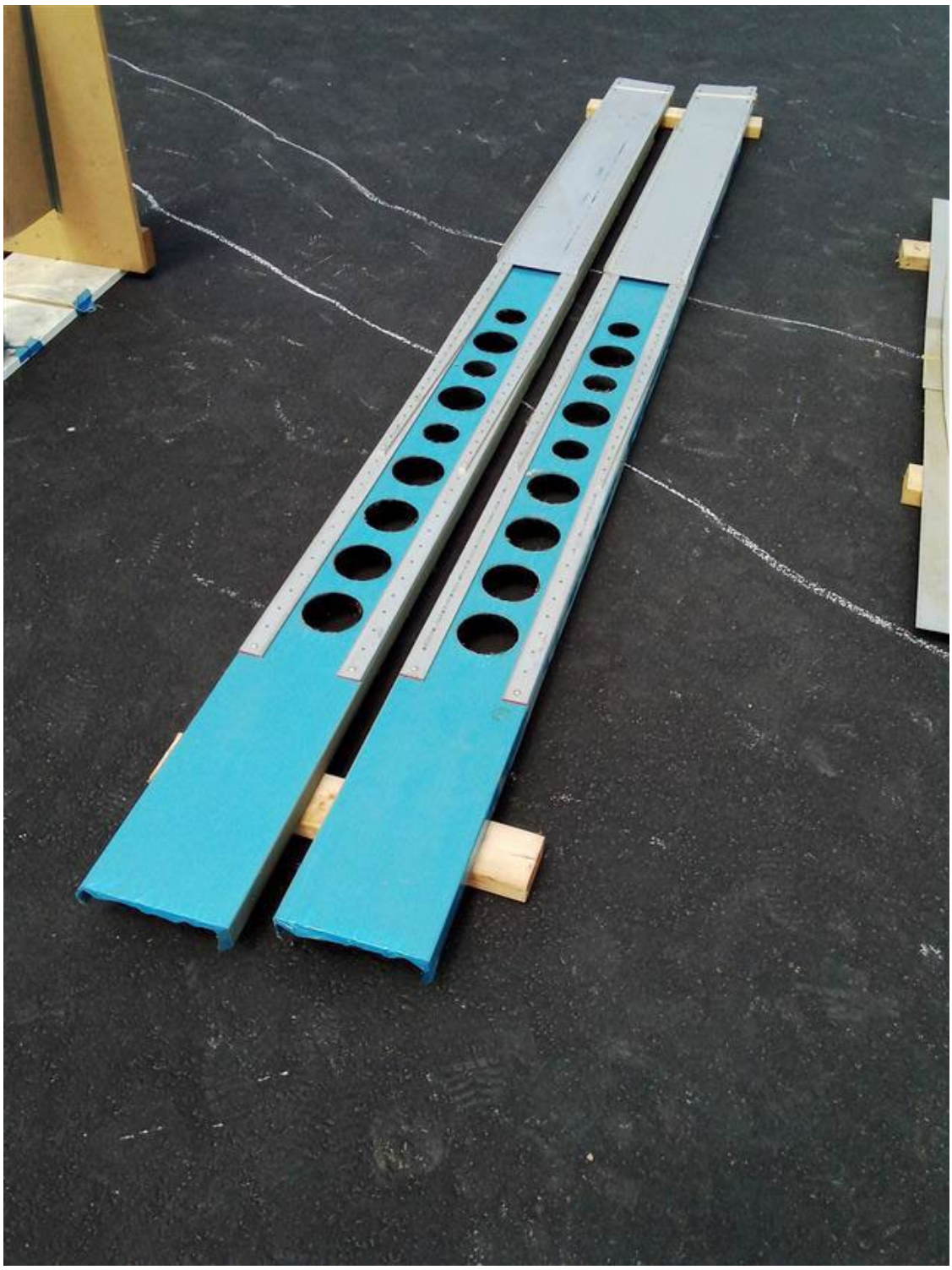
These rivets are made by turning a small amount from the head diameter and then reforming the head in a punch and die (shown above).

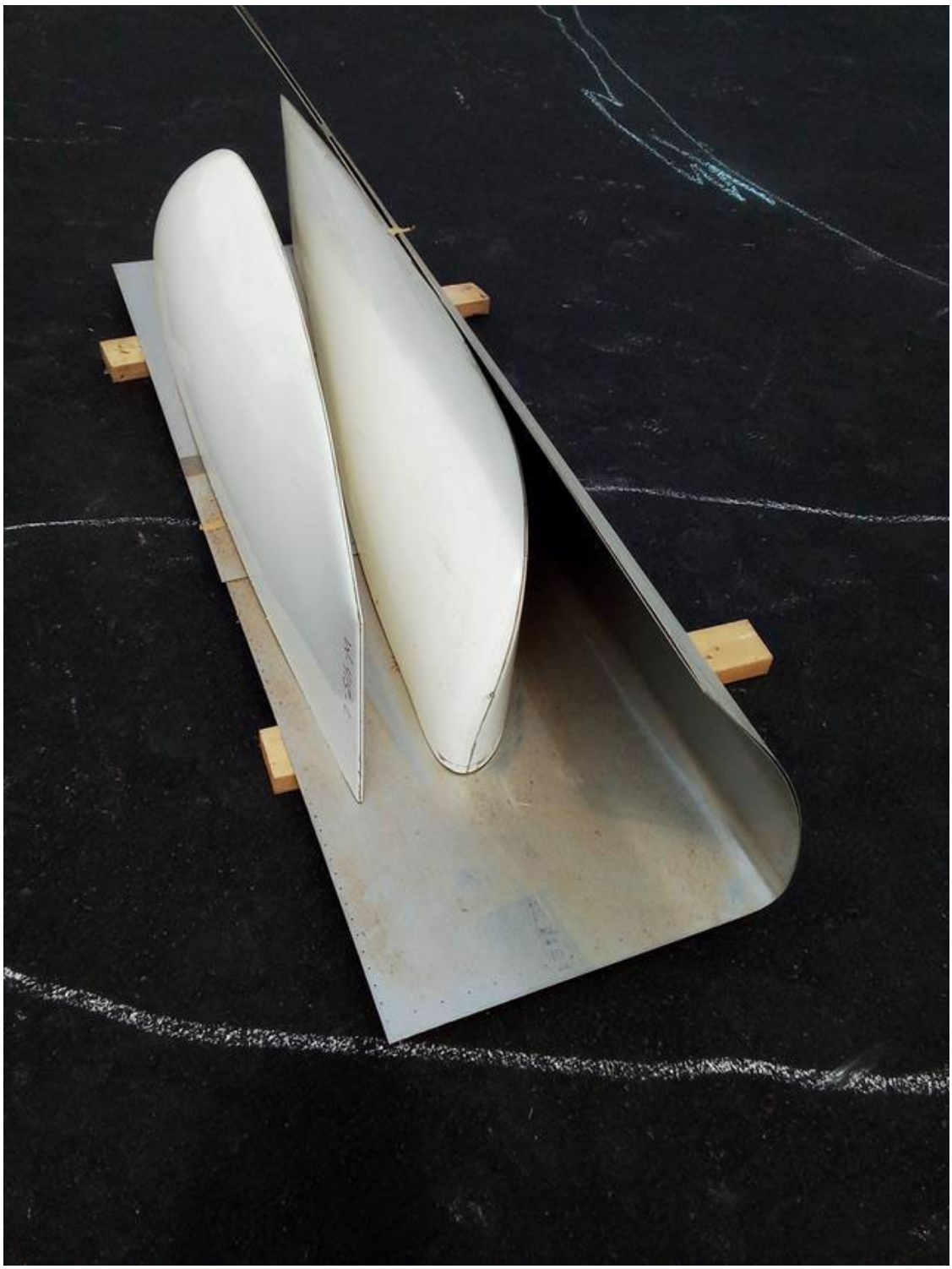
Should you happen to have a REAL need for these you can contact David through the VAF forum, or contact me and I'll put you in touch with him. In the future, hopefully, Blake, me, or someone will make these available to the masses. They are another great idea!

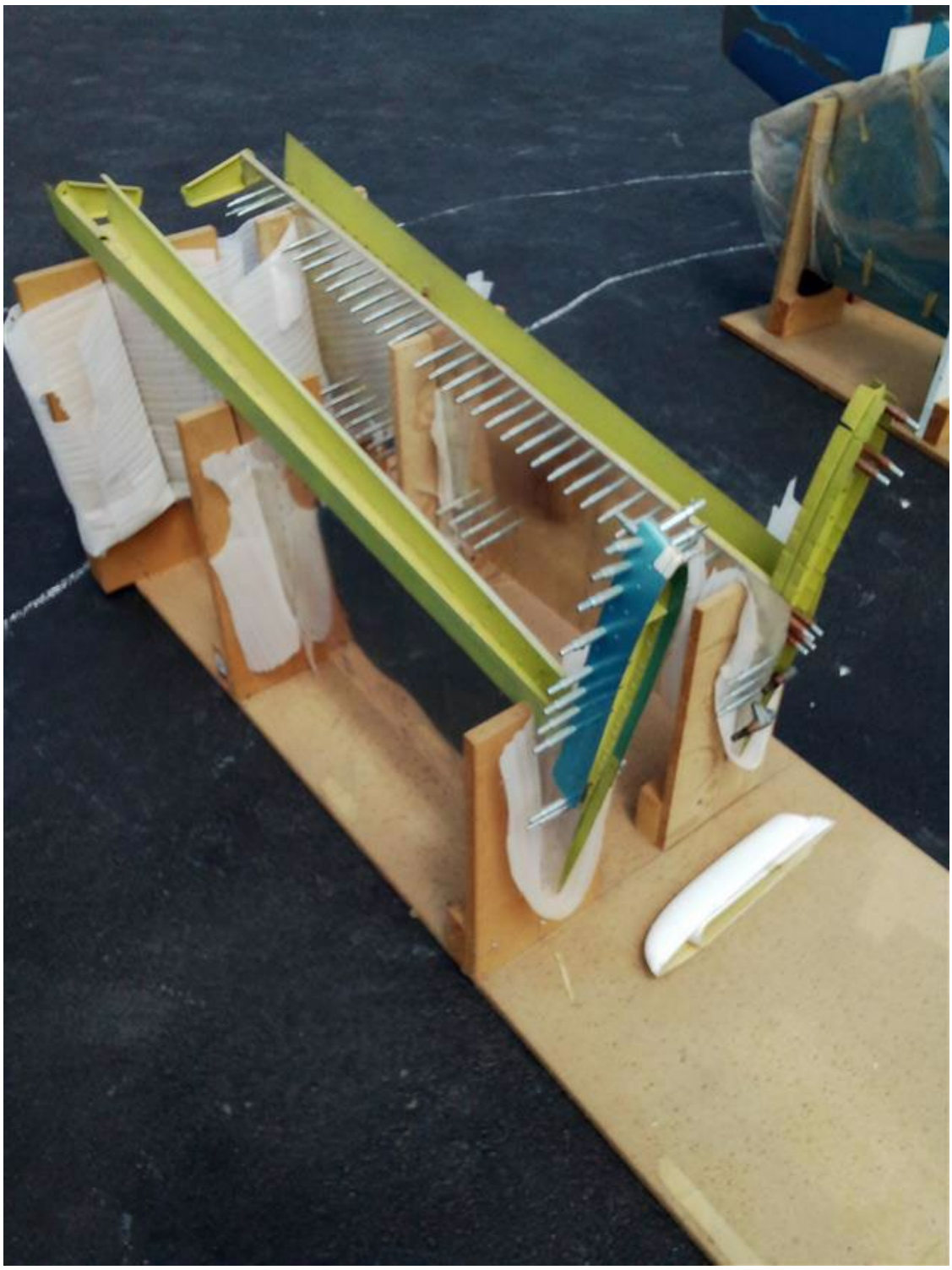
Brad Hood's 2017 Grand Champion F4 is up for sale.

Starting price $250K. The aircraft is currently owned by the estate of Charles Osborn Jr., who passed away last week. Brad is selling it for the estate.

Contact Brad Hood at 502-649-8326 or at dynamicaerosport@gmail.com







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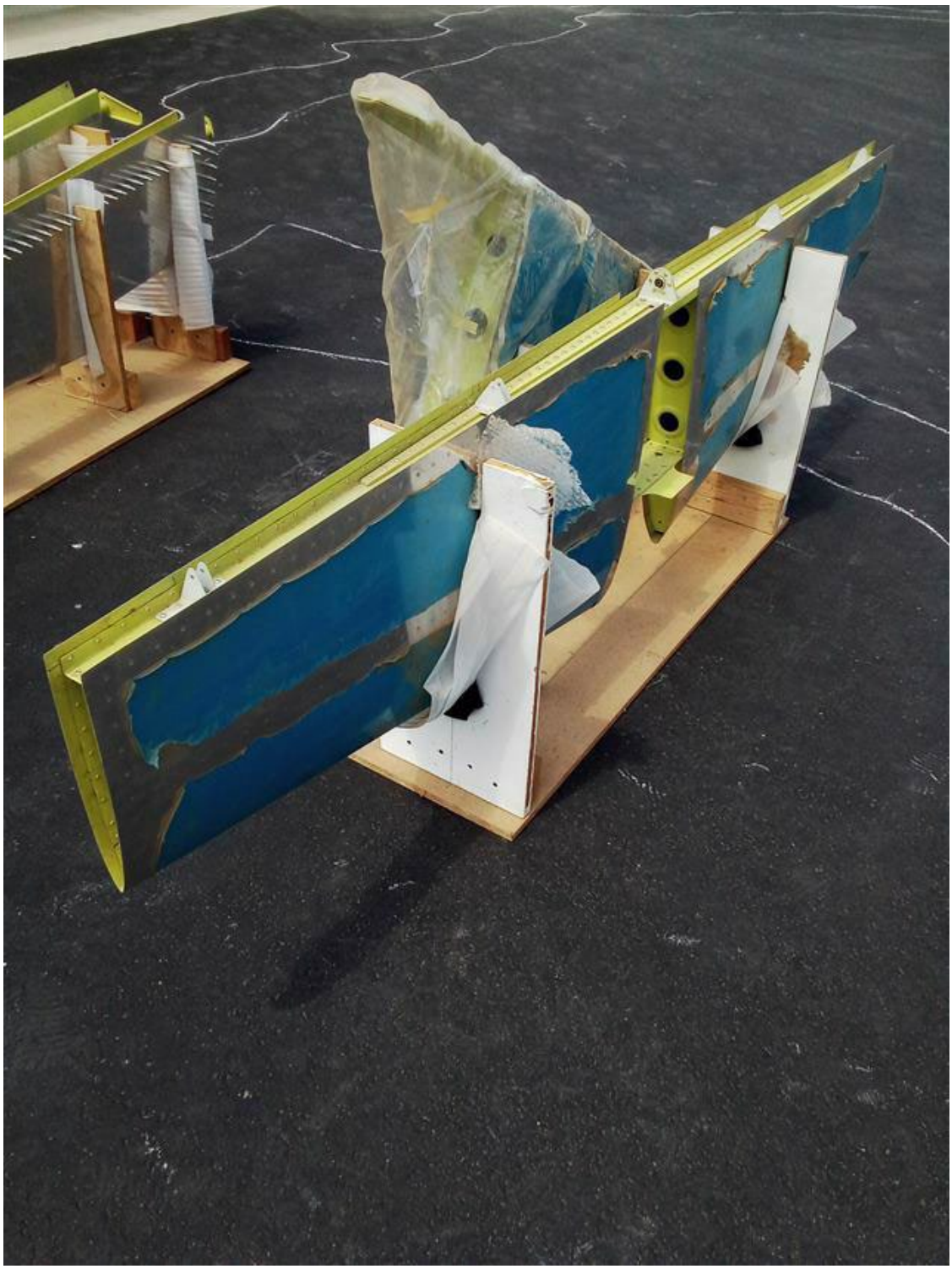

RV-4 wings and tail kit for sale

Vince Winstead, of Minnesota, has an untouched RV-4 wing kit and a partially completed RV-4 tail for sale.

You can reach him at 507-931-5669 or by email at cap_flyer@protonmail.com

Team Rocket, et al, will be at Oshkosh 2023 in the same location as in the previous several years. For those who haven't been there before, we'll be on the north end of the airport in the Homebuilt Aircraft Display area, just east of the EAA workshops/forums on Galatin avenue. Space 645

We hope to have Darryl Hudec's new F1 and possibly also Bob Baker's new F1 on display, weather permitting. We're looking forward to it!

House and shop progress:

The never ending construction continues, although I am putting the shop in order now. We still lack doors and trim, and there is still ongoing construction on the storage parts of the new shop.

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