TeamRocket
www.F1Aircraft.com

August 29, 2018 issue

Finally.... tapered wing discussion, Airventure updates, Mk3 empennage tips, new products, builder photos, and other blather..... enjoy!

J.J. Janovetz and Neils Agather are very proud to announce that their 2017 Team Rocket F1 EVO was awarded a Bronze Lindy at AirVenture 2018. Stunning is the only word to describe this machine. The craftsmanship and attention to detail... wow. I expect that you'll be seeing this machine on the cover of some well-known aviaiton magazines soon.

If you follow the EAA awards, you'll recall that Brad Hood's equally stunning F4 Rocket II won grand champion kit built last year. This really puts a lot of pressure on Ray Ward,

Robert Thurmond, Andy Patterson, and others to win a top award next year! Don't let us down!

Neils Agather and J.J. Janovetz with their well deserved bronze Lindy.

F-1 Rocket N265AJ
SPECIAL FEATURES

1) Retractable Tie Downs
2) Retractable Air Scoop for Back Seat
3) Extra Storage in Turtle Deck
4) Smiley Face on Brakes
5) Removable Rear Rudder Pedals
6) Carbon Fiber Look Glare Shield and Antenna Cover
7) Removable Front Windshield
8) Back-Lit Switch Panel
9) Cowl Flaps
10) Smoke Oil Tank with External Fill
11) Dual Outlet Heater Duct
12) Dual Light Speed Engineering Ignition
13) Custom Landing and Taxi Lights
14) iPad Mount for Back Seat Passenger
15) Two Front and One Rear USB Plugs

CLEAVELAND
AIRCRAFT TOOL
TeamRocket

Oshkosh 2018 We were nestled in behind the Van's Aircraft tent again this year. Mark Frederick had his F1 Evo at our booth again this year. As always, it draws a crowd.

A bit of recent history... it's been an interesting progression for us. In 2016 we had nothing to show except a handwritten sign that said "Ask about Team Rocket". We were just starting to put a few repair parts into production at that time.

In 2017, we had a few parts and were taking orders for the new Mk3 empennage kits. You had to have a fair amount of faith in humanity to plunk down your cash based on vague promises of a tail kit. Nonetheless, the first 12 tail kits sold out in no time.

Jump up to 2018 and we've got most of the airframe available, excluding the wings, and are working on a new tapered wing design that we hope will be optimized for the F1s and F4s. We even had a few parts to display. We'd have brought more... if we had a bigger truck!!

Even better, there are at least 3 new kit starts that are getting very close to flying status. Two F4s and one F1 should be flying soon... maybe early Fall.

Now that's what I'm talking about. Life is good.

Paul McVitty joined us this year. Paul makes the FlyLEDs system of LED lighting for your plane. His stuff is amazing. You can find his stuff at www.flyboyaccessories.com or atwww.flyLEDs.com

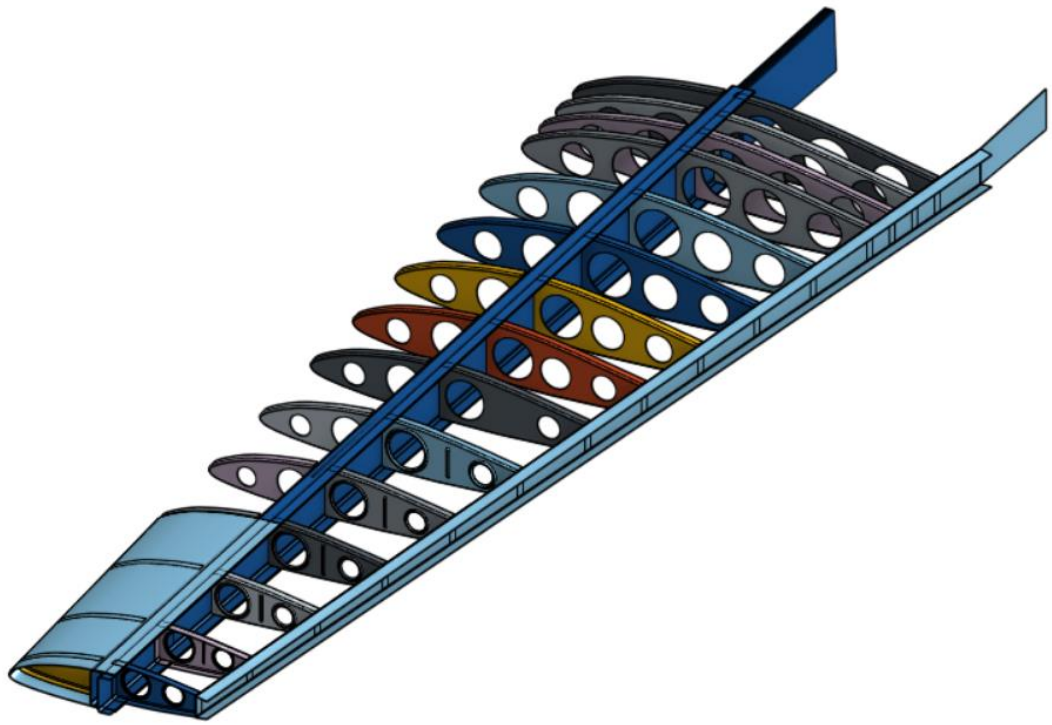
Next to Paul, L to R, is me, **Vince Frazier**, and **Blake Frazier**. In the truck, just behind Blake, safely out of sight, is a fridge full of beer. Just saying. Talking all day is tiring. Refreshments are required.

L to R: **Vince Frazier**. **Paul Romano**. Paul is heading up the new tapered wing design. Paul is an F1 Rocket builder/flyer and insists that the new wing will be tested on his plane first. That's commitment! Next is **RIck Thomason**, proud father of **Adam Thomason**. Adam is an aeronautical engineering senior at Purdue and is assisting Paul with various calculations and other engineering tasks on the new wing.

Some more familiar faces. From L to R: **Loyd Remus**, of RVbuilders.com. Loyd has helped build several F1/F4 fuselages now, and countless RVs. **Lee Logan**. Lee is an F1 Rocket owner/builder who also helps me keep track of where the original and new kits are going. **Ray Ward**. Ray's work has been shown several times in our newsletter. And **Mark Frederick**. Mark is responsible for starting all of the F1 Rocket madness, which has now morphed to also include the F4 Raiders, and who knows what is yet to come!

Mark Frederick's F1 Evo getting ready to depart. You might notice that Mark installed new cowl cooling inlets. Mark is very pleased with them. They keep the big Continental running cool.

You'll also notice a new graphic on the side of the cowl. If I had a dollar for every photo that folks took, I'd have enough dollars, well, I'd buy everyone at camp a beer for sure! TAYLOR MAID, very nicely done.



EAA Airventure engineering discussion

What we discussed, in very informal discussions, was what we're working on, including the new tapered wing design. As you might imagine, there is a lot of interest in that project.

Paul Romano was on hand to answer questions about how and why different design parameters were chosen. For a non-engineer, like me, the discussion was interesting, eye-opening, confusing, and informative all at once.

To start the discussion, it must be understoof that the standard, Van's type, Sport wing is a really good, all-around performer. There's a reason that you'll find that same airfoil used on a great many popular and successful aircraft. However, many people balk at the Van's type "Hershey bar" planform and would prefer a tapered wing.

To design a new wing, it was decided that the new wing design should have:
1) higher top speed
2) lower stall speed (using slotted flaps)
3) and it should maintain the docile handling of the Sport wing
4) and, of course, a more appealing tapered planform.

There are always trade-offs though. Potential disadvantages to a tapered wing include:
1) a narrower CG range because the CG range is related to the average wing chord. A tapered wing might likely have a smaller average chord value... but it depends on the

design!
2) A tapered wing might also have a different stall progression as shown below.

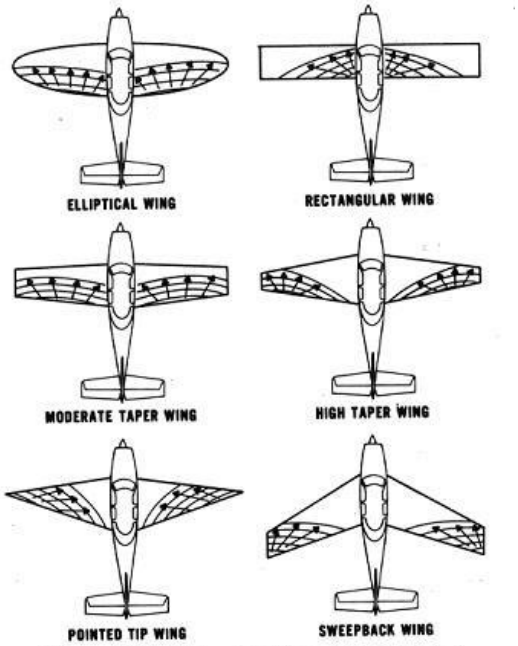


Figure 17–13 Wing Planforms (Exaggerated)

I'm passing this info along just so folks get a tiny snippet of all of the design considerations that are involved. Engineering a new wing, with a new airfoil, is no small task.

There are hundreds, or thousands, of calculations, dozens of drawings, and a million decisions to be made before the first piece of metal can be cut. Speaking of cutting metal, what if part of the new design weren't metal?

Stay tuned. More to come....

NEW PRODUCTS: Blake has carbon fiber tailwheel pants in prototype/production now. These are designed to fit ONLY the Screaming Eagle tailwheel fork that Blake

makes/sells.

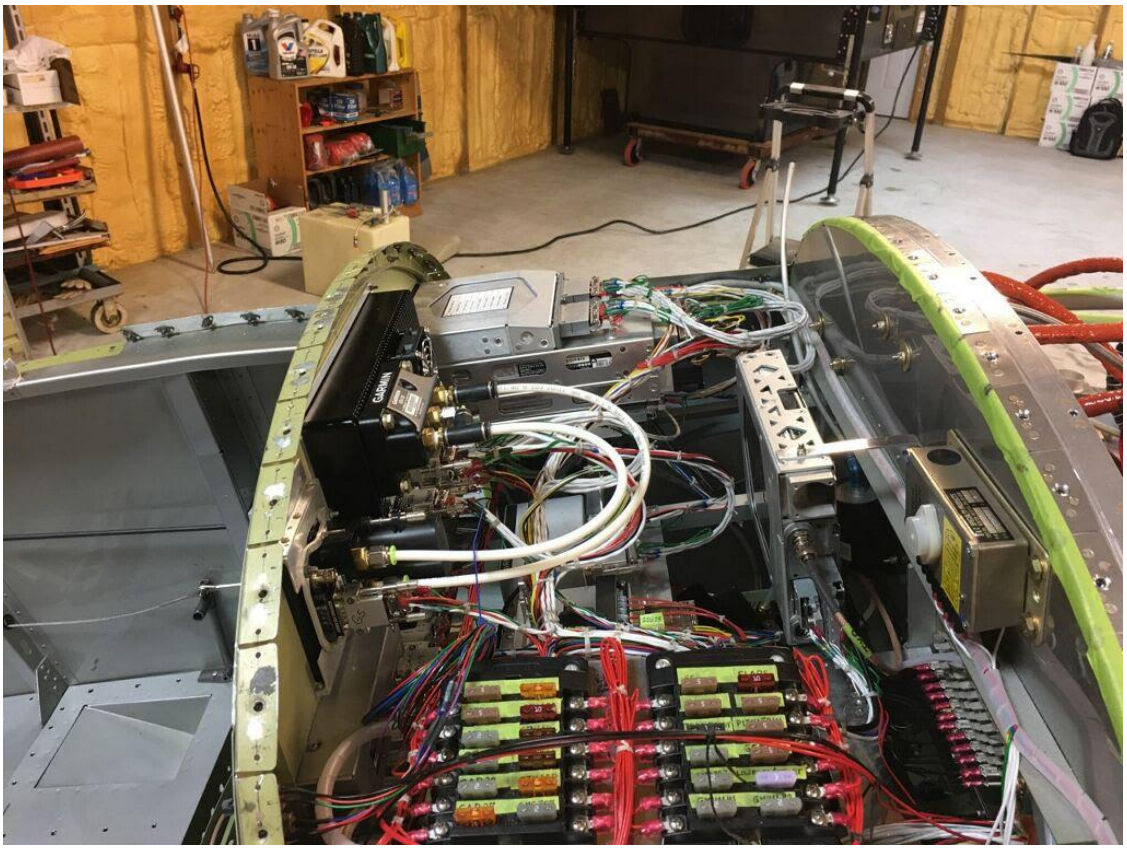
You'll notice that the upper portion of the pant, just under the control arm, is designed to remain stationary and cover the normally exposed housing that contains the tailwheel pivot shaft.

Early indications are that this tailwheel pant should add at least 20 knots. Maybe 30? Well, it certainly looks FAST!! ;)

In the other **new products** category this month.... a new hub with a new pneumatic tire. Specifically, a 7" diameter (roughly) tailwheel tire for those who don't like the slightly rough and noisy ride that our typical solid rubber tailwheel tires give. Check out www.flyboyaccessories.com for more info.

Sadly, this tire is too big to fit the carbon fiber pant shown above.

Last month we showed you one method for jacking up your Rocket/Raider. Here's Scott Roth's answer to that problem. I like both methods, but this one should be easier to use since it doesn't require any wrenches to bolt it on.



Builder projects: Ray Ward's project now has functioning Garmin goodies. The first engine start can't be too far off.

Ray is close to finishing the wings too.

And we have wingtips back in stock again!

Darryl Hudec submitted this photo of his aileron. Darryl keeps coming up with nifty ideas, like the cap plug to close the counterbalance ends. Assuming that the plug is permanent, that will help keep the mud daubers out of that area! Nice work!

Engine options: Just to get you drooling... a Barrett IO-540. I talked with Allen Barrett at Oshkosh and they would be happy to build one for you.

And here is an IO-360. If you need one, contact Allen at www.bpaengines.com Be sure to tell Allen that you heard about it here!

Until next time, fly safely and build on!

Thanks,

Vince Frazier
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