



RVator's Log

Newsletter of the Twin Cities RV Builder's Group

Shop Notes

- Doug

June 2026

In this issue

RV-12 Classic ...2
RV-7A Project ...3

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Upcoming Events

*TC RV Builders Summer
Lunch*

*Saturday, July 18, 2026,
1130*

Details page 8

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**Minnesota Wing
Van's Air Force**

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March is my annual condition inspection month. My RV7 is now 14 years old and just passed 1300 hours total time. It's not quite the pristine flying machine it was when I picked it up at Wipaire after its paint job back in 2012. That shiny IO-375 from Aerosport is not so shiny anymore with a few oil leaks here and there but it has been running like the proverbial Swiss watch all this time. I have religiously done oil analysis with Blackstone Labs from day one and a couple years ago started doing borescope inspections as well. But I'm still apprehensive every time an annual inspection rolls around anticipating that dreaded cylinder compression check.



I always have Tom Berge come in and do that for me since it is really a two-man operation and he knows what he's doing, and I barely do. So, I was a little shocked when cylinder number three showed 64/80 and was noticeably leaking through the exhaust valve. Now granted that reading is not a showstopper, but all of my cylinders have always read in the mid to upper 70s. That check was with a cold engine, so I went out and ran it up and we did another. It was slightly better, but still noticeably leaking through the exhaust valve.

Tom suggested I give Don Goodrich a call who is our resident A & P and knows these engines inside and out. Don said go fly it for another 10 hours and aggressively lean it out and then do another check. I've always been very conscientious about leaning aggressively on the ground and in the air as well. I've never had a fouled plug and with dual electronic ignition I assumed that it would not be an issue. Tom and I did a borescope inspection and that exhaust valve did show significant amounts of lead on the

valve stem and possible deposits on the valve seat. Maybe that could be the problem. I also went ahead and bought some TCP lead scavenging fuel additive which I had used all the time when I had my Cessna 180 which was really susceptible to lead fouling with 100LL.

So for the next month, I flew the airplane as much as I could. Aggressively leaning on a couple trips over to Sioux Falls and several Brainerd pancake runs. And started using the TCP additive, which I can recall is very effective in "getting the lead out."

A couple weeks ago I had logged 13 hours since the annual inspection, so I had Tom come over and we did another compression check. The good news was that cylinder #3 was now 74/80 and we could not hear any air leakage



coming through the exhaust valve. And another borescope inspection showed what I think was considerably less lead around the valve stem and valve seat. It was also oil change time, so I sent another oil sample to Blackstone labs. It came back with their usual glowing report except for a high phosphorus level. Blackstone is really great about customer service and after I talked with him it dawned on me that I had forgot to tell them I had started using TCP. They caught that right away and said that's the reason for the high phosphorus level. A quick search on Mr. Google's AI oracle showed: *"TCP (Tricresyl Phosphate) is a highly effective lead scavenger that chemically converts the lead in aviation fuel (100LL) into lead phosphate. This converts the lead into a dry, powdery, non-conductive residue that easily blows out the exhaust, preventing severe spark plug fouling and sticky valves."*

So I'm relieved that I don't have to do anything traumatic to that cylinder. Don says keep flying and we're good to go. I will continue using TCP. Seems like good insurance!

* * * *

An RV-12 Classic

-Greg Long



I created a decal for my RV-12 that I recently attached. My RV-12 is the older generation with the 912 ULS carburetor engine instead of the fuel injected 912 iS version that Vans made a lot of upgrades to and most have been building for several years. Someone gave me a t-shirt that I used as inspiration for the design. I took a picture of the t-shirt, loaded the image into ChatGPT and asked it to create a black and white version. I then loaded that version into an app called Canva which also uses AI. I erased some text and replaced it with RV-12 then sent the image to [decals.com](https://www.decals.com) and voila, two decals that I am very happy with. Attached is a picture of the tail with the decal and one at a recent fly-in where I flew Young Eagles (you have to look closely to see the decal). If any "Classic" RV-12 builder/owners would like to order the decal, I will be glad to send them the image file. Just have them contact me at glongpilot@gmail.com.



RV-7A Project Update: Wing Progress, Tank Sealant, and Waiting on Fuselage

- Beau Laniel

It has been an absolute blast in the workshop since my empennage and wing kits arrived back in January. Getting those crates opened was a massive milestone and joining the builder group that same month really helped kick my momentum into high gear.

Six months in, here is exactly where the project stands:



Empennage

The empennage kit was a fantastic introduction to the world of sheet metal. It's now officially finished right up to the point of hanging the flight control surfaces onto the stabilizers. Seeing those structural pieces come together and look like actual aircraft components was incredibly satisfying, and of course I had to set them up to look like a tail!

That said, the journey wasn't without its detours! I have officially joined the ranks of builders before me who have made stupid mistakes, resulting in a few replacement part orders from Van's. But hey, there is nothing a new rib couldn't fix, or even a torch to re-melt a lead counterweight! Some of the tasks seemed pretty daunting at first, like bending the elevator tabs, but executing them successfully was incredibly rewarding. I've sidelined the tail components for now to keep the workbench clear for the heavy lifting.

Wings

Right now, the focus is entirely on the wings, and they are coming together fast. The leading edges are fully riveted, and I just buttoned down the left wing top skins.

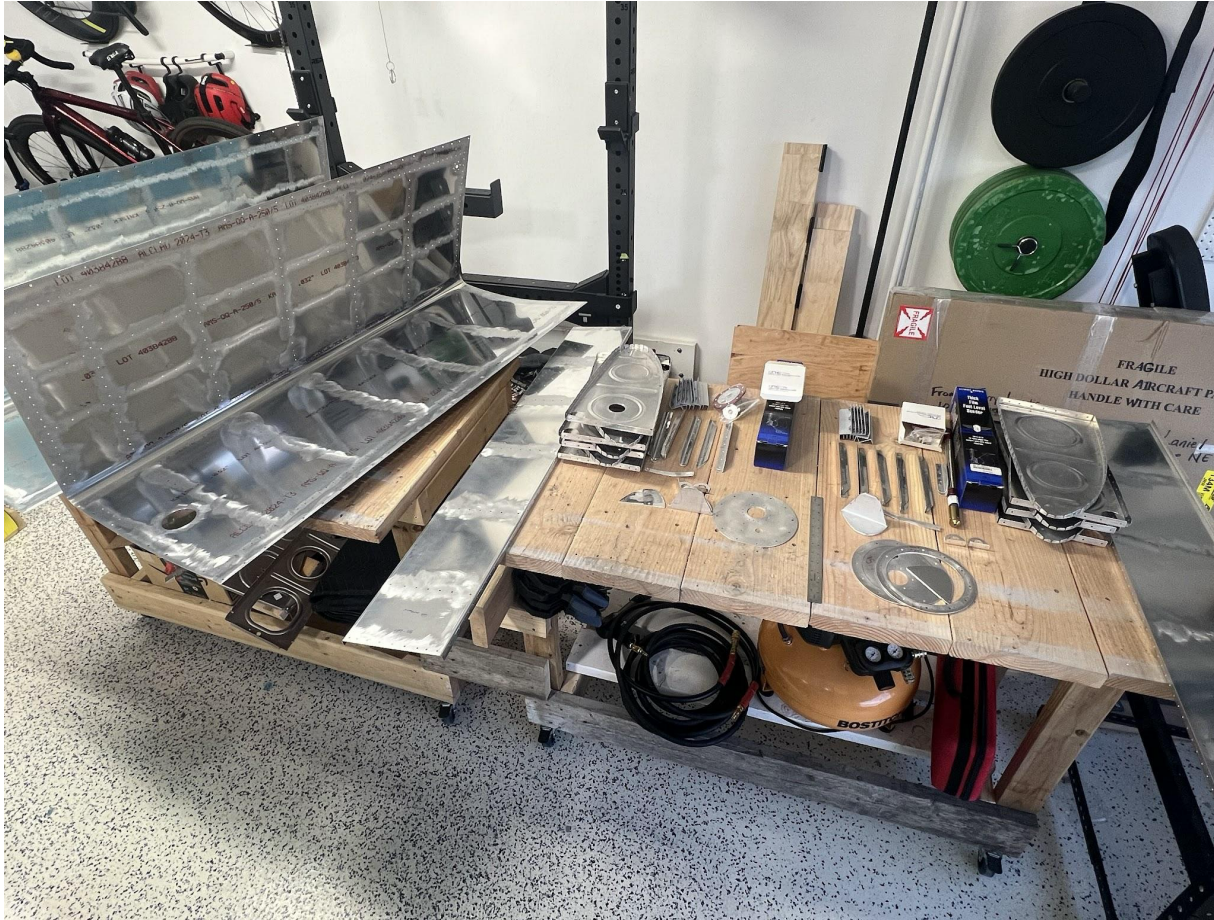


Here is a picture of the wings prior to disassembly and riveting!



Of course, you can't build an RV without surviving the ultimate rite of passage: **Tank Sealant**. Getting the fuel tank ribs riveted and sealed was an experience. I'm pretty sure I'll be finding residual gray sealant on my tools, clothes, and workshop floor for the next year.

Here is the tank before the sealant battle broke out!



Next Steps

The garage is about to get a lot more crowded. My fuselage kit is officially scheduled to ship at the end of July! My goal is to keep pushing hard on the rest of the wing structures over the next few weeks so I have a clean slate, and plenty of floor space, when that next massive crate arrives.

A Note to the Group

I owe a huge thank you to everyone in the builder group already. The support and advice I've received since January has been awesome and has saved me more than a few headaches.

If you have a project and need an extra set of hands for a tough task, whether it's holding a bucking bar, flipping a fuselage, or just needing a second person in the shop, let me know! I'm incredibly eager to learn as much as I can (and avoid making those same parts orders twice!) and am always happy to help out on another build.

Looking forward to the July lunch, but I've thousands of rivets to get back to before then!

God bless,

Beau, beaulaniel@gmail.com

Oh No, Weight and Balance

- Tom Berge

One of my things to discuss while giving flight reviews is W&B. Not in great detail, just the basic formula from which an accurate W&B can be calculated. It's a simple thing, but most times when I ask for just the basic formula, I see stumbling. That is unfortunate since it really is important. For us pilots flying two place side by side RV's, if we adhere to the baggage limitations and gross weight, it's difficult to go aft of the published CG range.

In my musings from the last newsletter, I mentioned an issue I ran into with regards to W&B. While redoing an instrument panel on an RV7A with a very heavy angle valve engine and 3 blade metal constant speed prop, we had decided to remove the Odyssey battery from the firewall and install an Earth-X battery behind the baggage wall, thus moving the CG aft. This RV was very forward CG, and it showed in the flying characteristics.



So before making the switch, we ran a W&B calculation to make sure we weren't causing more problems. Here is where we noticed something was off with the original W&B done by the builder, an A&P. The arms seemed wrong, so we remeasured and sure enough, they were wrong. Well, that's interesting. Then I noticed there was a 45# difference between the left and right main wheel weights. Wow, that's also interesting. Compared to my W&B on N369TB, something was certainly off with empty weight and CG.

WEIGHT & BALANCE DATA for RV-7A

Make	Vans Aircraft		
Model	RV-7A		
Ser. #	70046		
Datum	70 inches forward of wing leading edge		
Design CG Range	15%-29% of wing chord, or 8.7-16.82 inches from L.E., or 78.7-86.82 inches aft of datum.		
Wing L.E.	70 inches aft of datum		
Fuel	80 inches aft of datum		
Pilot/Passenger	97.48 inches aft of datum		
Baggage	126.78 inches aft of datum		
Main Wheels L.&R.	93.96 inches aft of datum		
Nose Wheel	39.11 inches aft of datum		
Recommended G.W.	1800 lbs		
Aerobatic G.W.	1600 lbs		

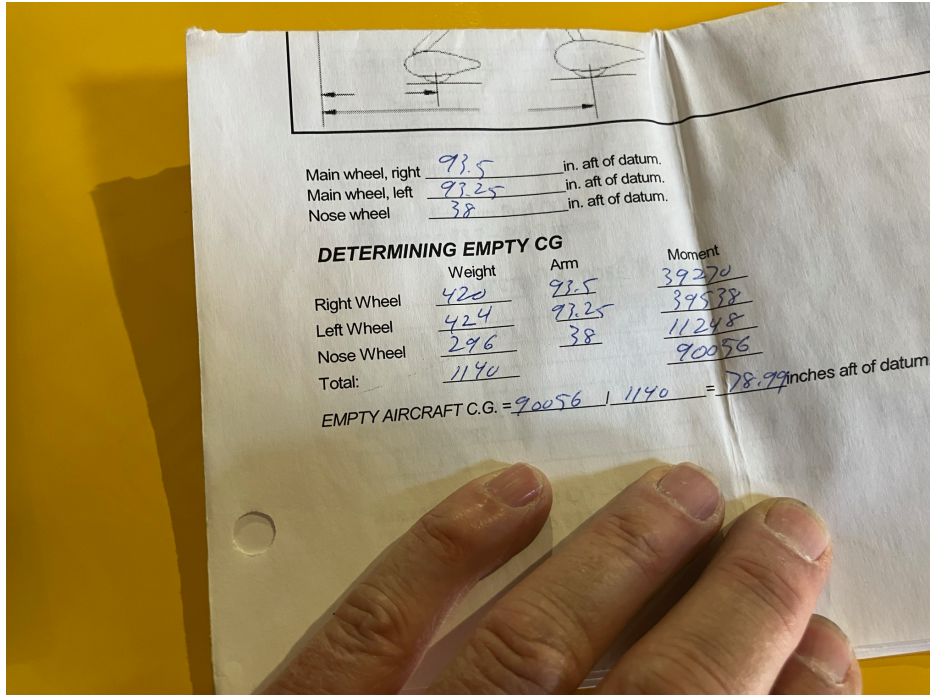
Aircraft weighed empty in level flight attitude. Includes 8 qts. oil, no fuel.

	Weight	Arm	Moment
Right wheel	450 lbs	93.96 in.	42282.0
Left wheel	405 lbs	93.96 in.	38053.8
Nose wheel	322 lbs	39.11 in.	12593.4
Empty weight	1177 lbs		
Total moment			92929.2
Empty CG			78.95429 inches aft of datum

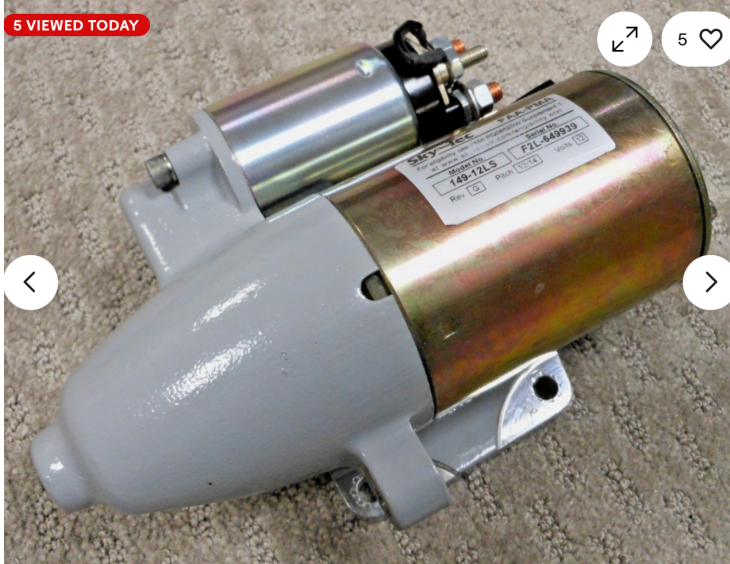
Aircraft weighed on 4/24/2006

James A. Bishop
James A. Bishop, A&P 051241669

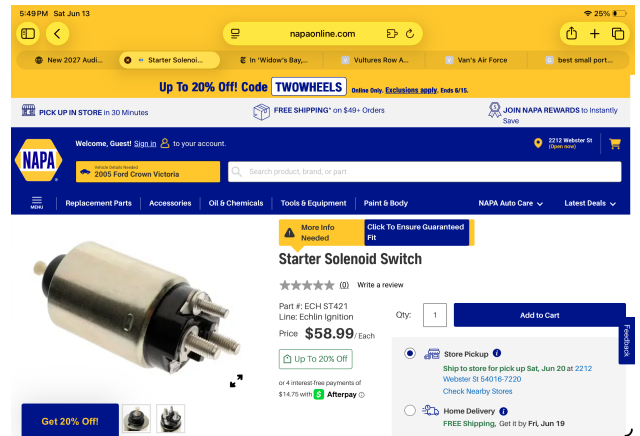
Fast forward to our completion of the panel work, we redid the W&B. Here are the copies of the before and after W&B sheets. As you can see, the arms were all different. Not helpful. The bigger discrepancy was the main wheel weights. Our weights were 4# different, side to side instead of the 45# difference listed on the original paperwork. I stared and stared at these sheets trying to figure out the issue. Then I had an ah ha moment. Look very carefully at the original W&B. Right main was 450# and the left main was 405. What are the chances the original builder simply transposed the 0 and 5? While I'll never know for sure, I like my odds of being correct. Watch your calculations.



ED Note: as we go to press, Tom is on his way to Flagstaff, Arizona in his RV7A a for a Grand Canyon rafting trip this coming week. He made a fuel stop in Dalhart, Texas, and his starter would not engage. This has happened to him before with his SkyTech LS149 and it has always been a failed solenoid. He always carries a spare so 45 minutes later he was on his way.



Moral.... if you have an LS149 on your RV, go down to your nearest NAPA dealer and tell them your 2004 Ford Crown Vic needs one of these. Stow it away in your baggage for when you get stuck out in the boonies!!



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Twin Cities RV Builders Summer Lunch

Saturday, July 18 – 1130 to whenever!

Hosted by Bernie Weiss and Pete Howell
India Lane
Anoka Airport, Blaine, MN (KANE)

Hey gang.... time to celebrate summer!! You know the drill from years past. Pete and Bernie are hosting us again with their impressive spread from Holy Land deli so come hungry!

All RV members are invited along with the guest of your choosing.

Feel free to come a bit early and indulge in some serious hangar flying. Lunch is on us courtesy of your membership dues.

Bring along a camp chair for your dining comfort if you choose. We'll be asking for a headcount via email so watch your inbox lookout about a week prior.

For fly-ins:

You can park at the north end of the hangar line (ask for taxi instructions to "Fox Hollow" at the west end of the airport (taxi lane "India") or on the grass on India Lane opposite the hangars. Please do not block any hangar doors.

For drivers:

From Rte 65: Turn east on 93rd Lane NE. Turn left at airport entrance (gate code 9302). Turn right at T intersection then immediate left on India Lane.

From I35W and Rte 10: Go west on Rte 10 and exit on 93rd Lane. Turn right and take second airport entrance to the right and follow directions above.

Please park on grass or hard surface clear of hangar doors!!!!!!

Questions: Call Doug at 651-398-1184

