

The Trailing Edge

December 2025

Check Me Out! My Journey to RV-12iS Proficiency

One year ago, I earned my private pilot license (PPL). It was an amazing feeling after passing that PPL Checkride. In fact, I was on a natural high for days! It's an amazing feeling to know I can now pilot an aircraft without supervision, and, even better, I can take passengers with me! I didn't stop grinning for days! Fast forward to present day -- I am closing in on 300 hours of flight time; 274.7 flight hours to be exact. Some of that time includes flight hours from many years ago flying the Piper Warrior II. That was in my 20's when I came close to earning my PPL, but life happened, and the funds ran out. The majority of my flight hours include my recent private pilot training flights and my flying adventures after that happy day I earned my PPL. 207 of those hours are in the Cessna 172S I trained in. After getting that PPL plastic card in my wallet, I focused on VFR flying to gain experience and have fun. I've flown many, many trips to airports near my home airport, Edwards Air Force Base (AFB), CA (KEDW). There was one requirement for the airports I flew to -- they had to have a restaurant. I have eaten many breakfast meals at on-airport cafes. These include places, all in California, like William J Fox Field (KWJF), Porterville (KPTV), Apple Valley (KAPV), Hesperia (L26), French Valley (F70), Camarillo (KCMA), Harris Ranch (3O8), San Luis Obispo (KSBP), Hemet (KHMT), and Kern Valley (L05). So much experience gained, so much fun had, and so many breakfast meals eaten!



Yes, I was having fun, but I felt the need for a new challenge. After all, according to aviation conventional wisdom, a private pilot certificate is a license to learn. I have several options in mind. The first option is to earn my glider rating with my good friend, Russ "OB1" Erb (CFI-G), who has offered to be my instructor. I am definitely going to do that in the future, but right now, I have a, er...gross weight issue, if you catch my drift. So, until I lose some poundage, I'll have to find something else. My second option is to train for my complex and high-performance endorsement in the Edwards Aero Club's Cessna 182RG. I started the ground instruction for that recently, but alas the aircraft is broken. I'll have to wait until it gets repaired. A third option is to take aerobatic lessons in a Super Decathlon with Justin Rhines of "Unhinged Aerobatics." Yes, I want to do that, too. But that may be too much of challenge for me at the moment. I learned some time ago from my compadres at work that there is a flying club located at William J Fox Field. Fox field is only 5 miles from my house. The name of the club is the Happy Bottom Flying Club. The name harkens back to the Happy Bottom Riding Club near Edwards AFB in the 40's & early 50's. The Happy Bottom Riding Club was a restaurant and bar owned by the famed female aviator Florence "Pancho" Barnes. It is an infamous part of Edwards aviation history. It was just to the west of the base and was a favorite hangout of Chuck Yeager and all his test pilot buddies.

The namesake Happy Bottom Flying Club (HBFC) owns a Cherokee 140 and an RV-12iS. Wait...an RV-12iS?... that plane has a stick! Plus, it has a G3X Touch glass cockpit. I'm starting to build my own RV-8A and I plan to put the Garmin G3X Touch in my aircraft when I get to that stage of the build. So, with the RV-12iS, I get to fly an airplane with a stick, I get to get familiar with the G3X Touch avionics, and I get to get experience in a Van's RV aircraft. That's the ticket!

I joined the club immediately and intended to start my checkout in the RV-12iS as soon as possible (ASAP). Sounds easy, right? It turned out to be



Van's RV-12iS Light Sport Aircraft

several months of stop and go training. This drawn-out training was due to many factors. First, I joined when the HBFC was short on instructors. There was one instructor in the RV-12iS, Glenn “Doc” Watson, and Doc is an airline pilot. Most of you know an airline pilot’s schedule is unpredictable to say the least. Secondly, over my checkout period, the RV-12iS had grounding maintenance issues more than it should have. I scheduled the aircraft for 19 Apr 2025. I had prepared by reading the POH and the training manual. I was psyched to get to fly this aircraft! I got to the



hangar at Fox Field early. I decided to start the walk-around before Doc arrived. As I walked into the hangar, I immediately noticed something that made me sigh heavily in disappointment. The nose wheel was flat. I continued the walk-around as prescribed by the checklist and the POH I had read earlier. Everything else looked good. The last thing to do was to burp the Rotax 912iS engine to check the oil. Doc walked in about that time, and we exchanged our “Good mornings.” I said, “Well, I started the walk-around and we have a problem.” I point to the nose wheel. Doc said, “That’s not good.” He pulled out his cell phone and called the club member responsible for the RV-12iS maintenance. They would get someone out to the hangar in a few minutes. It should only take about an hour to change out the nose wheel tire. Great! However, when the

mechanic arrived and we tried to change the tire, we found the wheel was heat-welded to the axle. The club had to purchase the whole wheel assembly, and it would take over a week to get the part. That ended my first RV-12iS day.

Over the next 2 months there were a myriad of issues that kept me from flying the RV. First, it would be mid-May before the new wheel assembly arrived. So, the club decided to take the RV down for annual which was coming up anyway. The RV successfully went through the annual inspection, and the wheel was delivered on 12 May 25. It was installed shortly thereafter. An engine run was accomplished on 18 May, and the RV was returned to service the same day. Good, now all I had to do was line up my busy schedule with Doc’s busy schedule.

I scheduled 23 May 25, but the next time the plane was flown (21 May), there was an engine control unit (ECU) fault. I had to cancel again. During troubleshooting, the mechanic thought he found an issue with a spark plug boot and fixed it, but before he could confirm, the EGT 1 sensor failed which caused an ECU failure. Given that, the plane was down again awaiting parts. By 31 May, the EGT 1 sensor arrived and was installed. Also, all of the sparkplug boots were replaced. The plane was returned to service, and it seemed all the electrical gremlins were banished. However, the next issue was a lost fuel cap. Evidently, the fuel cap was not installed correctly during ground refueling, and during a cross-country flight the fuel cap liberated itself from the airplane. While we were waiting for the new fuel cap, the oil was changed. The new fuel cap was received on 13 Jun 25, and the plane was returned to service. The plane was flown that same day and during shutdown, the Garmin G3X avionics displays went dark while the Master Switch was still on. Grounded again. Troubleshooting finally tracked the problem to the starter relay assembly. The relay was ordered, received on 20 Jun 25, and installed on the same day. An engine run was performed, and the plane was again returned to service. Finally! After all the issues were cleared, I was finally able to schedule a flight with Doc on 24 Jun 25.



I was there early on 24 Jun 25, unlocked the hangar, and started the walk-around inspection. Doc Watson walked in as I was finishing up. The walk-around is very similar to any other small GA airplane ground inspection. However, there are a couple of notable differences. First, you have check to make sure the wings are installed correctly. Yes, the wings of the RV-12iS are designed to be removable. Evidently, Van’s Aircraft wanted this little airplane to be easily transportable via trailer and able to be stored in a small space, like a garage. There is a handhold on the outboard edge of each wing. To ensure the wings are installed correctly, you grab the handhold, pull outward, and wiggle front and aft. You want to make sure the wing is secure and there is no play at the rear spar junction. Also, you inspect the



Wing Handhold

oil. The Rotax 912 series are dry sump engines unlike Lycoming engines which are wet sump engines. The burping process moves oil still in the engine into the oil tank to ensure an accurate reading on the dip stick. This procedure consists of ensuring the Master Switch is in the OFF position, removing the lid from the oil reservoir, and then turning the prop clockwise (from the pilot's seat) until you hear a very distinctive burble sound. You normally have to turn the prop about 7 -10 rotations before you hear the burp. After that, you pull the dipstick to ensure the oil is full. The plane looked good, so we pulled the plane out of the hangar and hopped in.

I was "psyched" to be able to fly this cool little airplane.

The bubble canopy tips up and forward for entry, and it is surprisingly easy to get in and out of the cockpit. The first



thing you notice when you sit down in the pilot's seat is that it's cozy... very cozy. It's a small cockpit and you are shoulder-to-shoulder with the person next to you. There's not much room to spare and not much storage for any phones, papers, iPads, etc. However, all the controls are well-placed and easy to reach. The flight controls are two sticks positioned between the legs of the pilot and co-pilot. The throttle is positioned in the center console between the two pilots. It was about even with my mid-thigh. I felt very comfortable in the cockpit. The flap switch is a small red switch behind the throttle. The engine start-up procedure is very different from the Cessna 172S I've been flying. That's because the Rotax 912iS engine in the RV-12iS is very different from the

Lycoming IO-360 in the Cessna 172S. Unlike the air-cooled Lycoming engines, the Rotax 912iS engine has a hybrid cooling system. The cylinder heads are liquid-cooled in a closed circuit with a radiator and water pump, while the cylinders themselves are air-cooled by ram air. In the place of a dual engine-driven magneto system, it has a dual electronic ignition system powered by an internal generator that creates electrical energy, which is managed by the ECUs and sent to dual ignition coils. In addition, it is a high revving engine with a max RPM of 5,800 according to the POH. The RPM looks much different than I'm used to, however, I had studied the POH and understood the differences. I used the checklist to start the engine. It was very easy to start. After startup, we set up all the avionics. The RV-12iS has a Garmin G3X Touch glass cockpit with an integrated GFC-500 autopilot. It had many similarities with the Garmin G1000 that I've been flying in the Cessna 172S. One thing I don't like about the RV-12iS is that it only has one

inboard rear root to make sure that (1) the hinge bracket bolt is securely installed and (2) the tab on the inboard flaperon is fully engaged into the slot in the actuator. After all, you don't want your wings falling off midflight or your flaperons not responding to your stick inputs. Since the wings are removable, they are not "wet" – they don't hold gas. The fuel tank is inside the cockpit behind the pilot seats. There is a fuel gauge on top of the tank so you can determine fuel quantity. Also, due to the removable wing design, the Pitot tube sticks out of the spinner. You inspect that like you would any other Pitot tube. The final difference is the procedure for checking the engine oil. The Rotax 912iS engine in the RV-12iS is much different than the more common Lycoming engines. You have to "burp" the

Rotax engine to check the



from the



comm radio, but that is just an inconvenience. We started to taxi out to the runway and the first thing I had to get used to was the absence of nosewheel steering. Doc explained to me that you had to use differential braking to steer it. That took some getting used to, but it wasn't too hard to figure out. I made the necessary radio calls, and we taxied to the engine runup area near the threshold of runway 24.

As I stopped the RV in the runup area, I turned my checklist to the runup procedure. I followed each step. First step is "Brakes: HOLD." The RV-12iS doesn't have a parking brake. Don't necessarily like that, but another slight inconvenience. Next, I ran the little

Rotax 100 hp engine up to max power to ensure it ran smoothly. You should see around 5,000 RPM and that's what we saw. Then I pulled the throttle back to 4,000 RPM and checked each ECU, "lane A" and "lane B." I turned each lane off one at a time and ensured the max drop in power was less than 180 RPM. Today, it was only a drop of 10 – 20 RPM. Finally, I pulled the power to 2,000 RPM and checked the two fuel pumps. I turned each off, in turn, and checked that the fuel pressure remained in the green. Both fuel pumps were working as advertised. And that's it. We tightened our seat belts, locked the canopy, briefed the takeoff plan, turned on the lights, and we were ready to go. Today everything looked good and both the plane and I were ready to fly!



Garmin G3X Touch System



Today's mission was to fly out in the local area to get used to the plane and return for some touch and goes (T&Gs). I was excited, but very nervous. I knew this airplane was very different than the airplane I've been flying. I radioed tower that we were ready to take off and requested a right crosswind departure to the north. Fox Tower cleared us for takeoff and approved the right crosswind departure. I rolled onto the centerline of runway 24, slowly applied full power, and pushed in right rudder to keep us straight on centerline. At 55 KIAS, I pulled slightly back on the stick, and the wheels smoothly left the ground. We were airborne and I was grinning! I climbed out at 75 KIAS and as soon as we reached the departure end of the runway, I turned right and climbed away from the ground toward the north. I noted I had to apply a significant amount of right rudder in the climb;

the little high-revving engine combined with the RV's light weight produces quite a bit of left turning tendency. Fox Tower approved a frequency change, and we called up Joshua Approach for flight following. Joshua gave us a squawk code and Doc showed me how to enter it in the G3X touch. There are several ways to do it, but the one I like is to touch the squawk code on the display. That touch opens a window with numbers, you touch the 4-digit squawk code into the system, and touch enter. It's that easy. We climbed to 5,500 MSL and I flew around as Doc showed me the "ins-and-outs" of the G3X touch avionics system. We also discussed "eco mode." The RV-12iS has a detent on the throttle that decreases the RPMs and you enter eco mode. This mode is for long cross-country flights. Eco mode optimizes fuel efficiency. In eco mode, we were burning 4.0 gallons per hour (GPH). Wow! Next, we did some steep turns and entered slow flight. Both were easy to fly. This plane flies great. It is very maneuverable. I love flying a stick instead of a yoke. It is much more intuitive. I also love the view. The bubble canopy gives you an amazing view. After some experience at altitude, it was time to go back to Fox and practice some landings.

We headed back toward Fox. I cancelled flight following with Joshua approach and called Fox Tower to tell them we were inbound and staying in the pattern. Fox Tower told us to enter a right base for runway 24 and report a 3-mile base. We followed the instructions. As we got closer, I started configuring the RV for landing under Doc's tutelage. My approach and traffic pattern was good, but that's when things started going awry. I rounded out above the runway much too high. Doc pushed the stick forward and said, "Bring it on down, you're too high." I was listening to him, but my mind was fighting it. He kept pushing the stick to bring us lower and when we were the correct height, Doc let go of the stick and I finished the flare and landed the airplane. As we flew around the pattern, we talked about what happened and that I was too high on the roundout. The next time around, the same thing happened. I rounded



out too high and Doc again had to push the stick forward to get us lower. I did that 3 more times. The 5th and final time, I did get a bit lower with Doc's instruction (he didn't touch the stick this time), but I was still too high, and the landing was a hard one. On debrief, I realized that the sight picture for the RV-12iS was much, much different from the Cessna 172S that I've been flying. That was the issue. I came away from the flight very disappointed and wondered if I'd ever be able to land the RV-12iS. I expected more of myself.

I scheduled the next flight for the following week, 3 Jul 25. Throughout the week, I'd been thinking about my roundout issue from the last flight. I knew I had to change something to force myself to see the correct sight picture. I tried to visualize it in my mind's eye. After considerable thought, I thought if I could widen my field-of-view instead of looking straight down

the runway, I'd be able to learn to roundout at the right height above runway. I arrived at the hangar early as is my habit and did the walkaround. When Doc arrived, I had the plane ready to go. Before we stepped into the plane, I told Doc that I had been thinking a lot about last week and how I rounded out way too high. I told him I was planning to roundout lower than I was comfortable and I was relying on him to pull out of any trouble. He said, "No problem. That's what I'm here for." After we took off, we went out to the practice area. This time we practiced steep turns and stalls. We performed both a power-off stall and a power-on stall.



Edwards AFB Lakebeds off the left wing

One thing to note is the RV-12iS with the Garmin G3X Touch Avionics has an Electronic Stability Protection (ESP) system that is designed to subtly nudge the controls if the pilot strays outside recommended limits (too much bank, too slow/fast). This helps prevent stalls, exceeding limits like overspeeds, or going beyond safe roll angles. To perform stalls for training, you must turn off the ESP system. The plane had gentle stalls and was easy to recover. The Garmin avionics also has a button on the autopilot that says "LVL" with a bold blue line around it. If you push this button, the autopilot is engaged and will level the wings and bring the airplane back to straight-and-level flight. This button is there in case a pilot gets himself into an unusual attitude and gets disoriented. I put the airplane into a couple of unusual attitudes and pushed the LVL button. It worked as advertised. This is a very nice feature. Now it was time to go

back to Fox Field and try my hand at landing again. We entered a base to runway 24 and called out a 3-mile base as requested by Fox Tower. My approach was a good approach. On final, I widened my view of the runway in front of me and rounded out. It worked. I rounded out at the correct height, flared and brought the plane down into a soft landing. I grinned. Something had clicked in my mind. All you pilots know that feeling. As we went around the pattern, Doc and I talked and he indicated that I rounded out at the correct height and complimented me on the landing. We did a couple more touch-and-goes and I did well on each one. Doc said I had figured it out and, since we had been doing full-flap landings, instructed me to try a half-flap landing on the next one. That one turned out good. Then he instructed me to do a no-flap landing. On this one I came in too fast. I floated a long time, and it wasn't a great landing. I wasn't satisfied with that one, so I went around the pattern and tried again. This time I was able to control my speed and greased the landing. We made this a full-stop. As we taxied back, I was definitely grinning. I felt confident in my roundouts and landings now.



Doc said the next flight would be a cross-country to Camarillo and if that went well, he'd sign me off to fly on my own. Cool! I scheduled the plane for 11 Jul 25. The morning of 11 Jul, I woke up early and jumped in the shower.



As I was showering, I bent over to pick up my shampoo bottle and felt something a pinch in my back. Uh-oh, that's not good. As I finished showering the pinch turned into real pain. Evidently, I had pulled a muscle in my back. I shuffled to my bed and lay down hoping relaxing for a few minutes would make it go away. No such luck. My back was officially "out." I texted Doc and told him the bad news. My flying day was over before it began; I couldn't even get out of bed I was in so much pain. I was extremely disappointed. It was a few days before I was able to go to work, and it was over a week before my back had healed enough for me to be able to go flying.

Even though I was ready to fly, other plans got in the way. I was planning to go to Airventure 2025 in Oshkosh, Wisconsin on 20 – 27 July 2025, and Doc was planning a vacation trip to Scotland with his family until 20 Jul – 1 Aug 2025. I had a

fantastic time at Oshkosh, and Doc and his family enjoyed Scotland. I contacted Doc when he returned to mesh our schedules and he gave me his availability. Before I could reserve the airplane, one of members noticed an EFIS battery fail during run-up. The EFIS battery needed to be replaced. We received the new battery, and it was installed on 22 Aug 2025. However, that didn't resolve the problem. On the next flight, a club member noted another EFIS battery low volts warning. Turns out the battery control board had failed. By the time the new board was received and installed, it was 13 Sep 2025. I texted Doc to see if he was available the next weekend. No such luck, but he told me that we had a new CFI that was able to give checkouts in the RV-12iS. His name was Chuck Webb. I contacted Chuck and he was available. I reserved the plane for 21 Sep 2025.



Me and Chuck enjoying a great flying day!

On the morning of 21 Sep, I arrived a little early as is my habit and started the walk-around inspection. Everything looked good. Chuck arrived as I was finishing up. We pulled the airplane out of the hangar and hopped in. It had been two and a half months since I'd flown the RV-12iS, and I was a bit slow on the checklists. At any rate, we fired up the engine, taxied out, completed the run-up, and took off for a local area flight. We flew out to the training area, and I performed some slow flight and a power off stall. Chuck continued to instruct me on the G3X touch system and gave me pointers on how to use the autopilot. I wanted to see what a smaller runway looked like during landing, so we dropped into Rosamond Skypark for one landing. I was happy with that landing, so we headed back to Fox for a few T&Gs there. Chuck was pleased with my command of the plane and my landings. He said he would sign me off, but I asked him to do a short cross-country flight with me to give me more confidence in the airplane. He agreed and said he would like to see me do some crosswind landings. Evidently, the RV-12iS is a handful on the ground during higher winds since it is so light. I scheduled the airplane for 27 Sep 2025. Unfortunately, the plane was grounded to change out the coolant tank, and it was 5 Oct 2025 before we could get together for another flight.



On 5 Oct, we took off and flew to Hesperia Airport for some T&Gs. The wind there was unpredictable that day. I did a couple of T&Gs that were safe, but not the greatest. Chuck took the stick to demonstrate a landing and agreed that the winds that day were... strange. In addition, with both of us in the RV, the climb rate wasn't the greatest and the terrain around Hesperia made the takeoffs a little more challenging than we would have liked. So, we flew to



Tehachapi Train Loop

Victorville airport. Victorville has 3 runways and we were hoping to get some crosswind practice. Unfortunately, the winds at Victorville were tame. We did a few T&Gs and headed back to Fox Field. During the whole trip, Chuck gave me pointers on the G3X avionics and autopilot. I was feeling very comfortable now in the RV. When we landed at Fox, Chuck signed me off to fly the RV-12iS by myself. I was fully checked-out!

On 12 Oct 2025, I flew my first solo RV-12iS flight. I decided to fly to Porterville Airport (KPTV) since it was an airport I had flown to many times and was very familiar with. It was a great flight. It was a beautiful flying day, and the flight was uneventful and fun! When I flew over the Tehachapi train loop on my right, I rolled up to 30 degrees of bank and took a picture. I love flying this maneuverable little airplane! It was a blast! I definitely have the RV grin!

After that flight to Porterville, I took some time to reflect on what I had learned from this experience of checking out in a new airplane. First of all, I learned what it means to be an owner of an aircraft. As a Happy Bottom Flying Club member, I was part owner of the RV-12iS. Unlike most clubs that rent aircraft, there is only one aircraft. Since there is only one aircraft, if there are maintenance issues, you don't have another airplane jump into. You must wait until the airplane is repaired before you can fly. This can get frustrating. You have to be patient. This gave me a glimpse of what it is going to be like to be the full owner of an airplane. Secondly, since there is only one aircraft, you have to be persistent and goal-focused. But isn't that a life rule for anything worthwhile you set out to do? I

certainly had to be persistent and goal-focused as I was training for my PPL. I learned that discipline and persistence will be needed for any aviation goal that I set for myself. Finally, I learned that new experiences make me a better pilot. If you have to struggle, you know you are learning. The initial struggles to learn to land a new airplane taught me techniques to use in landing any airplane. Learning about the handling characteristics of the RV-12iS gave me broader pilot experience and improved my airmanship. As I mentioned earlier, a private pilot license is a license to learn. This experience showed me that adage is absolutely accurate. As private pilots, we should always be striving to be better and safer aviators. Continued learning keeps you on your toes and keeps you from getting complacent – a horrible trap for private pilots. New experiences, whether it be checking out in a new airplane, getting that tailwheel endorsement, getting a new rating, or completing a FAA WINGS phase make you a better and safer pilot. That's because you are learning and improving your skills. I will take this lesson to heart and continue to find new learning experiences. For my next learning experience, I plan to train and earn an endorsement in a complex, high performance aircraft, the Cessna 182RG. I've already scheduled the first training flight. What are you doing to make you a better pilot?



The RV Grin!

- Glenn "Grits" Nicholson
Private Pilot and now RV-12iS driver