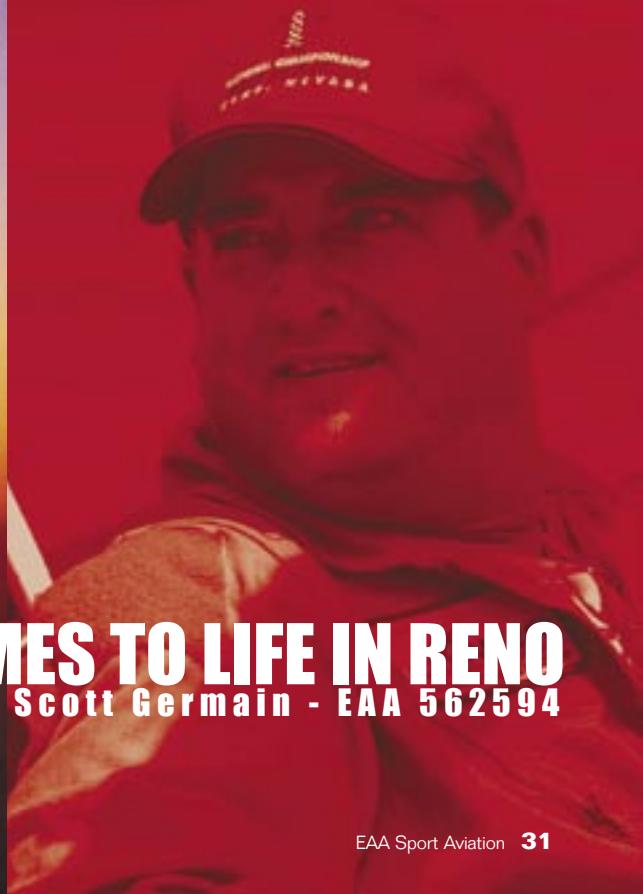
A dramatic sunset or sunrise over a desert landscape. The sky is a mix of deep reds, oranges, and yellows, with a bright sun on the right side. In the foreground, the silhouettes of several people are visible, some with their arms raised in a celebratory gesture. In the background, a pylon air racing plane is visible, flying across the sky. The overall mood is one of excitement and achievement.

Like so many other EAAers, my passions lie within aviation, sport aircraft, and especially pylon air racing. My imagination and dreams were sparked by Steve Hinton and the RB-51 Red Baron Mustang at the 1978 Mojave air races. As a 10-year-old boy, I saw that race plane flash by the front stretch under ungodly power. Something inside me understood that, and I knew that I wanted to race some day. That fire has burned inside me for the past 27 years.



# ROOKIES RACER



**A 27-YEAR PASSION COMES TO LIFE IN RENO**  
By Scott Germain - EAA 562594



Getting to Reno involved extensive practice at low-level flying, aerobatics, formation flying, and simulated engine failures.

## R O O K I E R A C E R

It's taken me all this time to get through high school, graduate from Embry-Riddle Aeronautical University, and then build a successful aviation career. From instructing to night cargo, from charter to regional and major airlines, I've climbed the ladder with a singular goal in mind: race at Reno. Since people weren't exactly beating my door down to have me race their airplane, I decided to break the Skip Holm Rule of Air Racing. His rule? *Never* be an owner. Owners pay the bills and pick up the pieces.

I didn't have a choice, so I broke the rule.

The career ladder I climbed held a variety of experiences that would relate to racing some day. Instrument flying might not pertain directly to racing, but a quick and accurate scan sure does. The psychology of discipline and interacting with

others would certainly help, too. But I would need more important skills around the pylons: formation flying, aerobatics, and low-level flying. Without a military career I felt a bit disadvantaged. But where there is a will, there is a way. Fortunately, during my stay at ERAU Prescott, I fell in with a group of former military aviators who taught me those skills in warbirds and sport planes. At some point, it would all come together nicely. Finally, the time had come.

I did have the benefit of another type of air race training. I've been an aviation writer emphasizing warbirds and air racing for a number of years, and have always written with a pilot's-eye view on racing subjects. I had hundreds of hours of interviews and conversations with unlimited race pilots, owners, and crew members. For me, each interview was like going to graduate school.

With life and career in place, I was in a position to inform a bank of my grand idea to buy a Lancair 360, and cajole it into a loan. The Lancair held the most bang-for-buck within my price range, and it looked good, too. I found a suitable example, the bank agreed with my wisdom, and I became the owner of an experimental airplane. I flew the airplane for a bit, then dove headlong into training for racing. I practiced low-level flying, aerobatics, simulated engine failures, and formation flying. While I'm no expert at any of those, I felt confident and comfortable.

To race at Reno, you must attend and pass the Pylon Racing Seminar in June. In the four months leading up to PRS, the airplane sat in a hangar as I sanded off two previous paint schemes, had a new cowl and cooling system installed, and made other improvements. The little Lancair

put up quite the fight; there were problems and setbacks at every turn. My airplane just didn't like me very much, but I was persistent. I also was able to call on fellow EAAers Pat McGarry and Len Raluso as expert sources of mechanical ability and guidance. Two weeks before PRS found me flight-testing the new cowl and cooling plenum, and ensuring my paperwork was in order.

## GETTING THERE

Sitting on the ramp at Reno's Stead airfield for the 2005 Pylon Racing Seminar was an accomplishment in itself. It was the culmination of four straight months of airplane work, a new paint scheme that wasn't quite done yet, and the aforementioned tantrums the airplane threw in my presence. I figured there would be at least some easy steps along the way. There weren't. This was a real education for me, and my learning curve continued.

Setbacks or not, I had a flyable airplane and had made the three-hour flight from Chandler, Arizona,

to Stead airfield northwest of Reno. I had flown my own airplane to racing school. I was ready, finally, to open myself to new experiences, explore and further my abilities, and fulfill that dream of becoming a race pilot.

Along with a group of dedicated friends, I had overcome some tall obstacles just to be here. I was in heaven. The ego side of me enjoyed the thought of joining the ranks of Doolittle, Cleland, Johnston, Destefani, Holm, and Greenamyre. The pilot side of me looked forward to flying precisely, quickly, and solid. The human side of me wanted to bring my hindquarters safely back to Earth so I could see my girlfriend. It was a good mix of adrenaline, ability, and survival instinct.

## CLASS IS IN

Pylon Racing Seminar, or Rookie School as it's affectionately known, is four days of ground school, briefings, and training flights in the racing environment. As students, our instructors are some of the best racers and pilots in the business. I was lucky

to have Dave Morss assigned to my flight of four. Dave has previously raced in the Formula One, Biplane, Sport, Unlimited, and Jet classes. He has more races under his belt than any other pilot. I was all ears.

The first day at PRS centers on talks from the Reno Air Racing Association officers, the FAA, class presidents, operations folks, and the air boss. Pilots are briefed on how training flights will be run, safety factors, emergencies, and what was expected of us. The mass of rookie racers then split up for class-specific briefings and instruction. Within the sport class, we drew on the experience of Rick Vandam, Lou Meyer, Mike Jones, and Dave Morss. These gentlemen were more than happy to share their insight and experience with us greenhorns, and made us feel welcome and part of the group.

The students at PRS had a wide range of backgrounds and experience. From ex-military to purely civilian pilots, from 600 hours to tens of thousands, the one thing we all shared was a desire to race, to learn, and to do well through the training.

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It seemed that we all had arrived prepared and motivated to get through the course with flying colors. Right off the bat, I felt a high level of camaraderie and that we'd all watch out for each other.

## FAST CLASS

Chairs and desks are all fine and dandy, but the real classroom was the cockpit. Friday had dawned not much better than Thursday; it was quite cool and the wind was again blowing down off Peavine Mountain. It was typical Reno weather and something we'd have to come to terms with while operating there. Each class had two periods each day to train on the racecourse. There were a record 17 students in the sport class, so timing and a smooth operation would be paramount.

Dave gathered our flight after the mandatory morning briefing and went over our plan for the first training flight. We would launch in order, join up, fly a race formation, break off, rejoin, and then proceed down the start chute onto the course. Most formation flying centers on a 30- to 45-degree bearing off the lead. At Reno it's more like 20 to 30 degrees, and stacked level. While coming down the chute, we transition to line abreast for the race start.

On this first day of flying, the wind was causing us to bounce between -1g and 3g coming down the chute.

Once on the course, Dave called for us to fall into trail so he could show us where the pylons were. For some of us, finding the correct pylons took a little while. It was good to know that we were strung out; we could concentrate on finding the pylons and maintaining situational awareness without having another plane right next to us. As Sport class racers, we have the added bonus of flying our first lap around the Unlimited course because of the starting chute angle. After that lap, we transition to our sport course.

For the most part, I found that all of the low-level training I had done paid off in spades. I had become used to operating and maneuvering at 50

## CHAIRS AND DESKS ARE ALL FINE AND DANDY, BUT THE REAL CLASSROOM WAS THE COCKPIT.

feet, so I felt comfortable. It was a lot easier for me to pick out the pylons by using other landmarks such as dirt roads, mountains, and such. In September, it's even easier because of the cars parked at each pylon.

After only two laps, our allotted time was over and we pulled off the course at the home pylon and landed. We all gathered around Dave

for a debrief, and we were pleased to hear that we had done well with the join-up and rejoin. "This is one of the hardest things to do during the races. If you screw it up, the race planes behind you are going to pass you by and leave you behind," he said. Generally, our join-ups seemed to go quite well. Smiles were exchanged between us rookies, as we had done well on our first hop.

Our second flight was run more like a race; we spotted in flight/race order, radio checked in order, taxied, and took off in order. Our join-up again went well, with all members being on board after the second turn. Dave was now the tail aircraft in the flight so he could observe the join-up from that perspective. I was number two behind Will Mathews in his White Lightning. He was at PRS just to brush up and get some practice. The rest of our flight consisted of Jim Webber in his Rocket, Will Whiteside in a Lancair 360, and Dave in his Legacy.

As we got on the course, something happened that was a great learning experience for me. Mathews missed pylon four on the Unlimited course, while Dave was passing in front of me to stay on the right line. I pulled up and off the course because I would have lost sight of Mathews. I announced my actions and intentions to the world at large on race control frequency, got sight of all the other racers, put full power on my little Lancair, and re-entered

the course with fangs.

My mistake? I did the absolute safest thing possible by pulling up and reacquiring the other racers. If we had been in a real race, that move would have cost me my position. What I should have done was follow Dave into pylon four and left Mathews to fend for himself. I tucked that away for future use.

The rest of that training period allowed me to refine my line around the course and find where my airplane felt the best. I started out extremely tight and was aggressive in my pylon turns. I felt that this was forcing the airplane around the course, and began to fly a bit more fluid and smooth. It turns out my feeling was correct. Dave later critiqued my flying: I was too tight, rolling into turns too quickly and too late.

In later flights, I began to let the airplane float around the pylons just a bit more. I was simply suggesting, via the stick, that the airplane should make smoother entries into the turns.



*Unleashed just couldn't go any faster without a better prop and more horsepower.*

For those of you who think air racing is about bending the throttle and ripping around the course, it really isn't. It's more about a smooth line, anticipation, smooth control inputs, and flying a smart line in regard to the guys around you. I wanted to somehow magically channel Holm or Greenamyre and have those skills transplanted into me.

My learning curve was still steep. I could see it for myself, too. On the course, I could gain on a faster airplane ahead of me by staying out of his wake and not banking too hard into turns. In terms of control inputs, I ramped my gain down a fair amount. On a scale of one to 10, I was using a five to roll into a turn. I

backed off to a two and anticipated entering the turn earlier. The airplane floated out just a bit more but I didn't seem to lose any airspeed. By the time Sunday rolled around, I was able to keep a faster airplane behind me during a mock eight-lap race!

## DAY TWO, MAKE OR BREAK

Overall, it seemed Dave was happy with our performance. This gave us all confidence and allowed us to redirect our personal focus toward the things each of us needed to address. I wanted to refine my line around the

course, collect course and airplane data via our RCAT telemetry system, and have my crew communicate with me while I was flying the course.

There were a few other items to get through before we got the nod and passed PRS. We rookies still had to do the "flip-flop" and a simulated engine failure on the course. What Dave would be looking for on the flip-flop was a roll to inverted and enough forward stick pressure to maintain altitude while rolling back upright. This would simulate getting rolled inverted while on the course and getting back upright without

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hitting the ground. That sounded like a great idea to me.

We took off early and made a specific flight for this purpose. Once at altitude, Dave called for me to slide out to the left and perform rolls left and right. Those were no problem, but when I did my first flip-flop I lost some altitude. Not good. He had me rejoin the flight while the other two took their turns. As I moved up the flight and came in next to Dave again, he briefed me over the radio and with hand signals. I pushed much more aggressively while rolling inverted, rolled back over, and still maintained my altitude. "Nice job," Dave radioed. Another box checked and one step closer.

Our next test came during the afternoon flying session. Dave had quizzed us on what our actions would be if our engine failed at certain points on the course. The point of this drill was to have a pre-planned reaction for wherever you were on the course. As far as training flights go, the routine of tow-out, start, check-in, taxi, takeoff, and join-up was becoming routine. For this period, it was more like "free time" until Dave called for each of us to do our simulated engine failure.

Will Whiteside and I took off early as a flight of two and orbited the course as he fiddled with his Lancair's gear doors. It was a good opportunity for me to fly some formation while helping out a fellow racer. After 15 minutes, we started down and entered the course. Less than a full lap later, Dave radioed for my simulated engine failure. I had just passed pylon one, so I pulled up smoothly, kept my left turn going, and brought the throttle to idle. I also brought my prop control all the way back to improve my glide.

At the apex of my pull-up, I nailed my 120 mph glide speed and continued a left downwind for 14. With good altitude, I turned base about one-third of the way from the approach end of the runway. I lowered the landing gear, got some flaps in, and then brought the prop back to high rpm. My little Lancair touched down with plenty of runway to spare.

"Good job, Scotty," came over race control frequency. Dave apparently liked my simulated Mayday. I was all smiles until I tried to raise my flaps.

They wouldn't move, and several other electrical items were inoperable. My traitorous airplane was giving me trouble again. It knew it was still the boss.

My high mood easily overcame any disobedience the airplane was dishing out. It flew great and didn't break until it knew I had passed PRS. I was thankful for that, and my smile showed it. The only thing that stuck with me is that we had another 15 minutes of course time, and I couldn't take advantage of it.

Fortunately, the fix was easy. We replaced a fuse and changed a few wires. After a few hours of work by my wonderful crew, I was back in

*Unleashed*. I figured I would run the course at different power settings and on different lines for later study.

Our instructors had something different in mind: We'd run a race. We'd have enough airplanes for an eight-plane race. From a fast Super Legacy all the way down to the Rocket, we'd spot the aircraft, start up, taxi, take off, and come down the chute just like race day. Speeds would range from about 200 mph to well over 300. Being on the low end of that, I figured to get plenty of practice at being passed.

The flight really went well, and I think we all had a complete blast. For me, a simple test flight had turned

Pylon turns become just another part of low-level flying.



business. This subject is one that every race instructor has brought up. When at Reno, have somebody else take care of the odds and ends that come with racing. Pilots should concentrate on the flying, not fixing something, hotels, or what have you.

In the end, when a guy like Dave Morss asks you to sign the piece of paper that qualifies you to race at Reno—to go ahead and do the one thing in your life that you have always wanted—it's quite a moment. Hopefully, I signed my name right.

## GRADUATE SCHOOL

I'm not sure what the other guys—also successful—thought our single Sunday session was going to be like. I figured it would be a free session to motor around the course and practice. One of my sponsors is RCAT Systems, and we have the new experimental aircraft telemetry system installed in

into Game Day. In no way, shape, or form was I going to let anybody get by me that didn't have a faster airplane. This was business. This was racing.

Of course, the faster airplanes cruised away and had their own fistfight. I had a race with two other planes: Will Mathews' *White Lightning* and Jim Webber's *Rocket*. Technically, Mathew's airplane is faster than mine, but I had the advantage of starting ahead of him. For 10 laps—an eternity out there—I whipped, beat, and flogged *Unleashed* as hard as I could. I used smooth control inputs and found my line around the pylons. Each time we passed the home pylon, my crew radioed me, "Race 4, lap X, telemetry is good, you are plus two."

I was fixated on the "plus two" part of the transmission. I knew Mathews was right back there with a faster airplane, so I was paying attention. Lap after lap we went at it until two laps to go. He had gained about a

second on me. "Plus one!" came over the radio. I instinctively pushed more on the throttle and twisted the prop up. The knobs were already bent all the way forward. It was pilot against pilot.

"Final lap," came over the radio from the pace plane. I bore down even more; I was flying my line and felt like I was deeply aware of every little detail. I crossed the home pylon ahead of good ol' Will, pulled off into cool-down, and then landed. I could have provided a gallon of surplus adrenaline to the local hospital.

## THE REAL WORLD

We had done it. We had passed PRS, learned how to safely race at Reno, and made many new friends. For me, it was the first step in a dream coming true. The first part was over; I was a race-qualified pilot. The road to this point had been so fraught with setbacks and obstacles that the taste of success was super sweet. It motivated me to continue working hard at making my airplane pretty,

and faster.

Overall, I was pleased with how fast my little Lancair was. I still had several mods to do before Reno, and I was happy about where we were with the program. We also had a ton of telemetry data to study, and some team refinement to accomplish.

More importantly, I saw the value of the Pylon Racing Seminar. It used to be rookie race pilots simply showed up, took a checkride, and then raced. We now have the benefit of having learned how to race in a controlled environment under the tutelage of some great race pilots. This weekend had validated what I already knew about air racing, refined some other ideas that were yet to be proven to me, and introduced some strategy that would come in useful during race week.

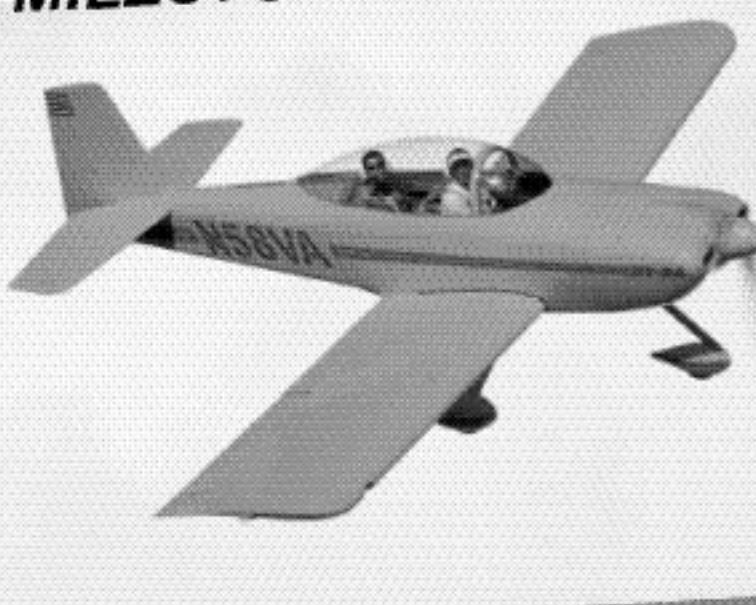
## EPILOGUE

All of the work I put into my airplane paid off at the end of qualifying at Reno. I was the 24th qualifier, and there were three other racers after

me who were slower. I was thrilled that I was actually going to race and not be an alternate. Many would be disappointed with this, but I was quite happy just to be in the show. Some people didn't really know about the speed potential of my airplane. I was flying it faster than I ever had before. It just can't go any faster without a better prop and more horsepower. I qualified at 233.401 on 155 hp at Reno's altitude. They were disappointed I didn't go 300 mph. I just shrugged it off and smiled. My best lap speed was just over 237 mph.

Racing was just about as I expected it to be, albeit less exciting. I was the slow guy out there, and the next faster racers were 250 mph airplanes. It was a bit lonely back there, but I was comforted by the fact that I was actually out there doing it when most people just talk about it. I really wished I could be up battling with the other racers, but this was my rookie year. I kept my line, full power, and 3000 rpm the entire time on the course. No way I was letting up,

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even though I had no real chance of catching the next airplane.

There is one highlight that should be shared. I've been a crew member working with Bill Kerchenfaut for several years now, and it's an honor to be associated with him as a friend and peer. He truly is one of the greats in air racing and hardly receives the credit he should. At any rate, he was on the radio with me during one of my races and gave me system and lap calls as I raced. Imagine having him on the radio with you!

To top that experience off, after I crossed the finish line on Sunday, "Kerch" came on the crew radio and offered me his congratulations. What a thrill! Then my dad came on the radio to do the same. My old man got to see me race. I could hear

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every emotion in his cracking voice over the radio.

What wasn't expected at Reno? Well, the flying is the easy part! I was really surprised at the wide range of flying skills and attitudes of other pilots. I also wasn't prepared to be the owner, crew chief, and manager, as well as the pilot. I'm not sure anybody can prepare you for your first Reno in terms of time and resource management. I did have a great crew to help me out, but they also had other responsibilities of their own.

We worked through it and ended up having a positive experience. With that in mind, we're looking forward to next year and taking the Lancair 360 as far as it will go. Can we run laps between 250 and 270 mph? We'll need some great sponsors to do that, and we've set that as a goal. Reno 2006 is just around the corner for us; time to get to work!