

CPA FLIGHT LINES



Mark Moreno

Winter Just Won't Go Away!



Phil Heacock

Sean Ives, John Lory, Kevin Bogan & Scott Klaers pull the props on the B-25 in preparation for flight. What important event involving the Mitchell happened this month? Turn to page 9 to find out.



Unusual Attitudes

By Marty Brophy, CPA President

Squawking 7600...

After a year of living under-mask, sheltering in place, alone in our immediate family groups, we are approaching the point of release. Hard thought after all this time to walk into a place and be comfortable that no one has a mask on, no one is keeping "asocial" distancing! Or to get in a plane with your CFI or CFII without a mask fogging your glasses and making comms harder. We have almost been "NORDO" (no radio) or "lacking communications" for this last time without squawking 7600 to prove it.



How strange! Back from the abyss, as it were. For older vaccinated folks like me, we can visit friends and family, get on airlines, do things we didn't give a second thought to in years past now! And I hope that lasts going forward! So many messages, many mixed, about what you can or should or must do. Solo flying is the one thing unchanged, slipping the surly bonds of earth without any virus precautions or masking, on your own and alone with the sky, the plane, and the world at your feet. Let that continue as we move back towards pre-COVID normal!

Meanwhile, the weather screams for us to get out there and fly! Winter lurks out there and will undoubtedly worm its way back in once or twice but April looks great and we need to get out of the winter nest and spread our wings. I hope you all will take to the skies in 172's and Skylanes and Mooneys and RV's and Bonanzas and Piper Arrows and whatever your sled is to ski the clouds and get far above the maddening crowds! Why else do we fly, those of us who do it for fun?

Our Colorado Pilots Association is getting ready for something like a return to before! To lunch fly-ins with Walt Bell and the retired guys and those taking a long lunch, to weekend fly ins from Bob Kinney and his Fly-In Committee, to just hopping in a plane and reaching places we haven't landed (because who doesn't keep a tally of that?), and to Pancake Breakfasts (free for pilots at the KAPA Wings over the Rockies Museum branch the first Saturday of the month - a new concept, the \$100 pancake!), and enjoying our glorious CO mountains when the Wx is right! Check our aviation calendar on the home page and fly left or right or back seat to events set up for the pure, pure joy of flying allowed to us who work for it and then join in!

And spread the word! Take young folks up and let them "fly the plane" briefly. Show adults you don't have to start at 18 to do this most engaging and addictive but healthy activity. Those (like me) who started doing this after age 60 prove that young folks don't have to have all the fun. And get them to join us in the cabaret as the old song says! Life is short but the sky is infinite above us.

The CPA exists for its members and is run by volunteer members. We are always looking for members to help! If you would like to get involved in the organization, contact me at president@coloradopilots.org and tell me what you might like to do, and we can discuss.

Enjoy April on the start of our night flight out of the COVID-19 pandemic. And the white light in front of you is the tail light of someone who got started earlier, so push the throttle in and climb into the "foot-less halls of air" ahead!



It's Almost Time! Check out the 2021 FLY-In Events on the website. Then look for the book at your local airport. Let's get out there and fly!



2021 FLY-IN EVENTS



Seriously – you really can build one!

By Bill Marvel, the RV-14A guy

Author's note: Brian Garrett's January Flight Lines article on building his own airplane mentioned me, so I took that as an opportunity to support his dream. A longer version of the article below is on the CPA blog site but I wanted to submit this shorter one to Flight Lines as a follow-up to Brian's article. CPA is all about airplanes and airplane people, regardless of the source or type of flying machines involved. As you will read below, Marti and I have successfully made the transition that Brian and Laurie are now pursuing themselves.

There's no question flying is expensive. It always has been but people who love it somehow manage to fly. Splitting the cost with multiple owners, joining an aero club and renting airplanes are all time-tested methods of keeping costs in check, but not one of those is the same as having your own magic carpet. The cost of actually owning one is certainly more than the purchase price. After that comes insurance, fuel, hangar or tie down and, of course, maintenance. And that maintenance involves not only a costly FAA certificated mechanic and his shop overhead but also expensive, approved parts. And as some owners have sadly learned, those parts can sometimes be made of “unobtainium” because they simply no longer exist, either new or used. When that happens, you start selling off your airplane piece by piece because it will never fly again. Bummer.

Truth be told, I went through all those methods of ownership for years. I learned to fly in an aero club, once owned an airplane with a partner and also rented as I moved from one place in the country to another. Eventually, my wife Marti and I bought a used 1976 Grumman Tiger. Over the years I was able to acquire an A&P certificate and then added an Inspection Authorization to it so I could do my own maintenance and inspections. Life was good and then one day – literally one day – I looked at a never completed homebuilt aircraft sitting atop a pole as a wind vane at a small California airport. With no prior thought, I proclaimed to two startled friends with us at breakfast, “I'm going to build an airplane.” Why? I have no idea as it just hit me that day out of nowhere.



Marti and I riveting one of the RV-14A wings in our garage in Grand Junction. We built everything at home and did final assembly in our hangar.



With experimental aircraft, a full IFR panel requires only one certified box. The capability of modern avionics is awesome.

That was three homebuilt airplanes and 20 years ago and I will not go back to certified airplanes despite the A&P/IA in my wallet. Certainly, they have their place. If you need two or more engines, pressurization, weather radar, turbine power, known ice, many seats or other trappings of big airplanes, and have a thick enough bank account, they are unbeatable. But if your mission involves just two people, or maybe four at most, either building or buying an “amateur built” aircraft is a far more affordable option. While some are not much more than large flying toys, others are very capable. Our RV-14A, for instance, flies non-stop from Grand Junction to Los Angeles, San Diego or Kansas City and lands with an hour and a half fuel reserve. It can carry full fuel, my wife and me and 100 pounds of baggage and still be nearly 50 pounds below gross weight.

The airplane has been to 18,000 feet several times. The engine burns 8 gallons an hour at 160 knots true air-speed. My insurance is \$1300 a year and parts replacement costs, if ever needed, are downright cheap.





Engine arrival day is exciting. Most engines today use one or two electronic ignitions and skip magnetos.

Even today, most pilots are not aware that on such an airplane, anyone can legally do anything, with the exception of the annual condition inspection. If you buy an existing aircraft, that inspection has to be done by an A&P (no IA required), or the person who built the plane. If you built the airplane, you can do all of the inspections yourself. In either situation, you can freely modify, experiment with, or install new systems to your heart's content, all fully within the FARs. An annual condition inspection performed by an A&P is not costly because it is an inspection only. Any discrepancies can be cured by you or anyone else. But there will be few of them because you know the airplane well, have done compression and timing checks, replaced brakes, lubed bearings, changed oil and filter and have fixed any known problems before the formal inspection. If a

part is not available for some reason (rare), you just build and install your own with no approval needed from the FAA. And despite all this, if you want to pay the usual large landing fee, you're welcome to land at DIA, LAX, JFK or any other airport without restriction. Is this too good to be true? No, and that is why this sector of aviation is rapidly growing.

What's the catch? There are two – catch one is that if you build an airplane, it takes time and focus on the project and you must learn a great deal. But doing so is not difficult and massive amounts of help are available from the kit manufacturer and builder's groups on line. In the case of Van's aircraft, there are over 10,000 flying and their kits are exceptionally well designed and plans clearly written. They are a joy to build – and addictive. With our prior RV-8A in California, I sometimes woke up at 3 AM unable to sleep and went to the airport to build. It is an utterly fascinating undertaking that results in a brand-new airplane and a huge amount of acquired skill and knowledge.

Can't afford it? Well, maybe, but look again. You don't need to buy the entire kit at once. They come in different sections, so you buy what you can afford and while you're building that section, set money aside for the next one. This is not an overnight effort.

Catch two is if you buy an existing airplane, you should have someone familiar with that type look at it for you during the pre-purchase inspection so you're not acquiring a problem at the outset. And, of course, the learning part still pertains even if the airplane flies beautifully. You can never know too much because you're the one who will maintain it, modify it as new avionics come out, and fly it. Your knowledge of airplanes, how they are built, how they operate and how they are maintained will increase enormously.

Is this a route into future aircraft ownership that applies to you? That call is not mine to make, but for us, it was one of the most incredible experiences my wife and I have ever had. And after a long flight, when I look back over my shoulder at the airplane waiting there to take us on another long adventure, it just boggles my mind to think we actually built it.



The finished product two years and four months after start. This is in Pagosa Springs at a CPA fly-in. Time to build varies considerably but my recommendation is to make it Job One and work it everyday possible.



Ask the CFI

by Tammy Raines

Why is it important to “step on the ball” and do coordinated turns?

A coordinated turn means you are keeping the tail lined up with the nose in the airstream. If you are uncoordinated, you are flying sideways in the airstream to some degree or another; the side of the fuselage is being presented to the airflow.

What happens if you just turn with ailerons?

When you observe a plane making a turn, it appears to just roll like you would lean into a turn on a bike.

However if the pilot did just roll the plane it would indeed bank, but the nose of the plane would tend to point the opposite direction. This effect is called adverse yaw and is not intuitive so it is featured prominently in pilot training. You could make a turn like that but it would be very inefficient and the plane would “skid” around it. It is also uncomfortable inside the plane because the people inside feel a sideways force vector. The plane will also lose altitude.

To counteract the adverse yaw you need to apply force through the yaw control aka the rudder. It takes some practice to get it right and each plane is a little different but done correctly it becomes a “coordinated” turn.



[Check out the \\$100 Fly In Restaurants on the Colorado Pilots Association website under the Fly-In Events link](#)



Why do the 4 forces that lead to left turning tendencies on climb (p-factor, torque, spiraling slipstream, and gyroscopic precession) not do the same thing in level flight?

P-Factor- When the airplane is flying level, both blades of the propeller have the same angle of attack. But in a climb, the descending blade (right on American-made airplanes) has a higher angle of attack, which means it creates more lift. And that yaws the aircraft to the left.

Torque- torque is the force that causes an opposite rotation. As the propeller spins clockwise (as viewed from the pilot seat), the airplane experiences a rotating force in the opposite direction. In this case, that means the airplane wants to roll left, an effect that is damped by the wings. Torque increases with an increase in power i.e. climb.

Spiraling slipstream- The propeller creates a spiral of air that spins about the airplane, eventually contacting the left side of the rudder. As power is increased and the propeller spins faster, the force on the rudder is stronger, causing more of a yawing motion to the left.

Gyroscopic precession- Precession means that a force applied to a gyroscope is manifested 90 degrees ahead in the direction of rotation. As a rapidly rotating disc, the propeller acts like a gyroscope. When a tailwheel airplane is on the takeoff roll and the tail comes up, the propeller disc rotates forward. That's akin to someone pushing on the top of the disc. The force results 90 degrees ahead, or on the right side, pushing the nose left. Tricycle-gear aircraft don't experience this force nearly as much as conventional-gear aircraft do.



Got a question for our "Ask the CFI?" Send them to newsletter@coloradopilots.org

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Building Holding pattern

By Brian Garrett

Posted on 3/15/2021 4:07 PM



When I kicked off this blog series it was full steam ahead to get prepped with both knowledge and the building space with the anticipating of having a kit in-hand by January. I mean after all, how hard can it be to put together a series of aluminum parts to build an airplane? Especially considering the plant for fabrication is already in place. Oh. Let's not forget to factor in our once-in-a-lifetime pandemic to throw a monkey wrench into my otherwise streamlined plan of events.

This threw a bit more of a delay into the system than I expected, but in retrospect, it's probably expected. It's not so much the Sling airplane factories issue at this stage as much as it is shipping. Since the kit is fabricated in South Africa it has to get onto a boat. The shipping industry is experiencing a pretty significant bottle neck, mostly with shipping containers. For more information on this, see <https://tinyurl.com/yhxkecs4>.

In December I thought I caught a break as my order got bumped up due to another future builder having to back out due to unfortunate health issues. So, for now I have entered into what is likely to be one of many delays during the build process.

One of the things that has been noodling around in the back of my brain during this idle time has been some of the supporting organizational structures in aviation to help people build airplanes in addition to aviation in general. In my most video I talk about this as a bit odd or confusing for me that such organizations aren't discussed at the entry level to aviation.

When I started flying some dozen years ago, I never had any instructor explain in detail how these organizations help to benefit aviation in general. I suppose some of this may have to do with the fact that a good chunk of folks going through pilot training aren't into it for the recreational aspect, but more on the career track. Overall, organizations such as the AOPA and EAA have always seem to me to be something to be important to be part of their community. At a local level there is even more of a direct impact with groups such as the local EAA Chapters and in Colorado with the Colorado Pilot Association (CPA). Both of these local groups offer a variety of resources to help make general aviation that much more rich.

Almost as soon as I wrapped up my license I joined both the CPA and the local EAA chapter. I haven't been very active in the local EAA chapter simply because I wasn't a builder. But I can tell you that when I have reached out for questions, comments or even participating in a local event everyone has been very welcoming. Granted this is overall the nature of the pilot community, but it's helpful to have a group to return to with familiar faces. It even started out with their post-Oshkosh pizza party debriefings. This was the first event I ever really heard of Oshkosh.

Having shifted into the build mode for my next plane, I'm attending the local chapters events on a regular basis to get to know the community there better. They have been very open to helping and I am looking forward to getting to know others through this group as my build progress evolves.

The CPA is also one of the best groups I could recommend anyone locally to Colorado to be a part of for at least two reasons - but there are many more of course. The first of which is their very popular Mountain Flying program. This one day ground school event just makes one realize how dangerous flying in the Rocky Mountains it can be. I remember after taking it walking out of the program wondering why on earth anyone would FLY much less in the mountains. However, with knowledge comes power, so I left with more knowledge of what I would want to avoid for sure.



The second program for the CPA gives you a reason to fly; their annual Fly-in events. The point of getting a pilots license is to GO places, not just fly locally. At least that would be the only reason I would think someone to become a pilot (other than it's fun of course). This Fly-in program with the CPA puts together a series of places to visit through other CPA-member hosted events. My wife and I have traveled to places we would never imagine ever stopping with a group of very wonderful people.

The national level programs also have their benefits, but all of them (nationally and locally) have their places to help make aviation be a great activity to be involved with. Certainly they compete with other recreational clubs supporting different areas of interest, but these groups are one area which could help overall with the retention of folks within the aviation community. I wish this were more encouraged on the onset of flying. I think it's great for the pilots that maintain their connection to their local community through their membership. What do the folks reading this think? Should pilots be more involved with their local and or national organizations to help keep a healthy and vibrant community?

[Click me for: THE FIRST RIVET YOUTUBE](#)

The Doolittle Raid.

**On April 18th, 1942 sixteen B-25s launched from the USS Hornet lead by Lieutenant Colonel Jimmy Doolittle on the “Doolittle Raid.”
The last surviving member of the Raid, then Lieutenant Richard Cole, passed April 9th, 2019.**





Paul Gordon

A Fouga CM.170 preparing to depart Centennial Airport.

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