



Higher Living

Another quarter has passed, and we are now on the downhill run to Christmas. In this issue I have included my comments on several aviation related computer games and simulators just in time for the holidays.

It's raining as I write this which is perfect time to use the Redbird TD-2 flight simulator located in the FBO. You can fly there any time you want. Use it to keep your instrument skills current. You can make the weather as bad as you want and still stay safe.

This last quarter we have had several airplanes shut down for maintenance and upgrades. It has taken a long time to get the equipment that was ordered for them. We should see a change this quarter with both Cessnas returning better than ever. If you have been waiting for the C182 to get back to flying it

should be happening very soon. Also remember that we offer rental and flight lessons at the Harnett County airport. Is that airport closer to where you live? Would you like to fly from a location that isn't quite as busy as Sanford?

Would you like to contribute articles for *Higher Living*, are you a writer or do you have suggestions for topics you would like to see covered in this newsletter. If so, articles can be submitted to me as well as any topic suggestions you may have. They are always appreciated.

Will talk with you next in the new year. Stay safe!

Come fly with us.

- David Williams, Editor

Contact Us

Phone: 919-897-8882

Schedule your next aviation adventure at www.ExecFT.com

Located in the FBO at 700 Rod Sullivan Road, Sanford, NC.

Airplane & Instructor Rates

Wet rate for rentals. Tax is included.

Cessna 182 N1303S \$210/hr

Warrior N41669 \$185/hr

Warrior N9626C \$175/hr

Cherokee N720FL \$165/hr

Cherokees N515DH,
N711FL \$155/hr

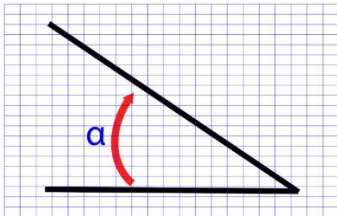
Cessna 172 N3816Q \$155/hr

Instructor time \$50/hr

Redbird TD2 \$40/hr

Angle of Attack Indicators

Everyone has heard of angle of attack. You know you stall when you exceed the critical angle of attack, and you may even know the mathematical number of degrees that angle represents in the airplane you fly.



The AOA indicator makes that angle visible to you, not just an abstract number anymore.

There are two types of AOA indicators. One is a normalized AOA which adjusts for changes in airplane configuration to be able to always show accurate data. These appear in large, more sophisticated systems. The other type, which is the type you will see in GA aircraft, is called a lift reserve indicator. It is set to show correct readings in a single configuration only. Normally a landing configuration is the one that is selected.

The airplane pitot tube is replaced with one with two openings. One straight ahead

like the original tube and a second hole facing 45 degrees downward. All the magic in the AOA indicator comes from the interpretation of the differing inputs from each opening. The job of interpretation of the data falls to a bit of computer electronics which, after calibration to the airplane in question, can properly show AOA on the visual indicator.



The fancy graphics have great meaning to your flying. If all lights are off, you are on the ground. If just the upper red triangle is lit, then you are about to stall. If the blue circle is lit, you are at the perfect speed and angle of attack for a landing approach. If just the

bottom green bar is lit you are at V_a or maneuvering speed.

Any of the red lights indicate flying too slowly or too great of an angle of attack. Yellow triangle with a green bar is a cruising attitude.

On descent to landing, AOA can help fly a precise glide path. Use AOA to help control the pitch angle and airspeed and use power to control descent rate.

If below the blue circle, then you need to do, one or more of, the following.

- Decrease bank or lower the nose
- Increase airspeed
- Increase power

In 2014, the FAA released major changes to expand the installation of AOA indicators in general aviation aircraft. Under these new policies, an appropriately rated mechanic can install an AOA indicator by a field approval or a minor alteration in the aircraft maintenance logs.

We don't have AOA indicators in our airplanes but perhaps a future upgrade will include one.

Escaping Accidental Flight into the Clouds

When flying during the day there are no good reasons for ending up in instrument meteorological conditions (IMC). You should have checked the weather before you took off and you should also be watching the weather ahead as you fly to make sure the predicated weather matches reality. At night there is the possibility that you could fly into a cloud if they are scattered, and you happen to enter it.

Whether day or night if you enter a cloud or conditions which reduce visibility it can be startling and can cause panic if you begin to feel disoriented. Your best option is a gentle U-turn to get yourself back to clear air. It was clear behind you so that is where you want to be. During your private pilot training you get 3 hours of time in simulated instrument conditions for just this moment.

- Stay calm. Panic is your enemy.
- Scan your instruments and believe what they are telling you. Don't believe what you may be feeling instead.

- Make a note of the heading that is directly behind you.
- Begin a gently banked turn either left or right, toward whichever side appears clearer, and continue all the way around completing a U-turn. Be mindful of changes in altitude as you do this.
- Stay on this heading until you break out of the clouds.
- Stay calm, continue to scan the instruments, and you will be fine.

According to AOPA's Nall Report, approximately 4% of general aviation accidents are weather related, yet these accidents account for more than 25% of all fatalities.

The lethality rate of weather accidents, in other words the chances a fatality will occur in such an event, is around 63%, one of the highest among all accident types.

Don't take chances that weather will be better than forecast in the TAF. Make sure that flying another day is always an option for you. Keep your and your passenger's safety first.

Aviation PC Games

When you can't come out to the airport maybe you would like to try one of these PC games with an aviation flair. Maybe one of these should be on your Christmas list. They are all good and worth your attention. All prices noted are as of 9/24/22. I buy from Steam (online game service) and the prices are from that provider.



Microsoft Flight Simulator 2020 Standard Edition, \$47.99
Deluxe Edition, \$71.99
Premium Deluxe Edition, \$95.99

In November Microsoft Flight Simulator will have been around for 40 years and I have been flying it since the beginning. Right now, it represents, in my opinion, the best there is in home flight

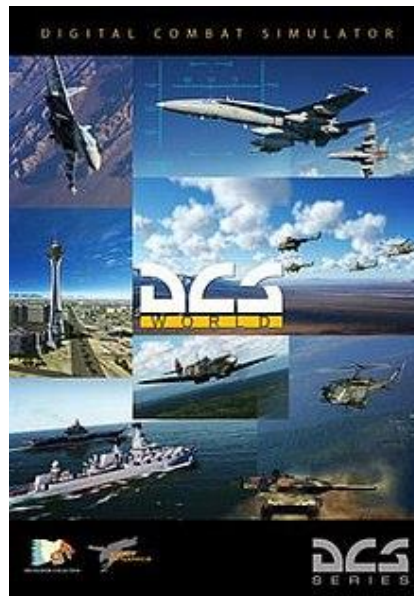
simulators. You will need a fast computer and the ability to display detailed graphics to fully appreciate it. The entire world is represented in beautiful detail. The different cost levels provide some extra airplanes and some additional super detailed airports. You will need something other than a mouse, keyboard, or gamepad to operate this realistically. If you don't like the selection of airplanes included in the base package there are many additional aircraft available priced from \$20 to \$50 each. You are free to change the weather as you want or let the sim create actual weather based on METAR data as you fly. You can fly anywhere in the world.

XPLANE12

X-Plane 12, \$59.99

The only real competitor to MSFS. *X-Plane* differentiates itself from other simulators by implementing an aerodynamic model called blade element theory. This means that all aspects of the behavior of an airplane are mathematically modeled to provide a detailed sensation of flight. The number of items which can be adjusted in the software settings are

staggering I have no idea what several of them even do. I feel that this sim will appeal most to the aeronautical tinkerer who wants total control over all the variables of modeling the airplane in flight. *X-Plane* will allow you to design airplanes and wings as you wish. The scenery is beautiful, and the airplane interiors are just as nice.



DCS: F/A-18C Hornet, \$79.99

This sim can easily become the most expensive because the price above is just for a super detailed F/A-18C Hornet. There are many more airplanes available for similar prices. Also, you must also own *DCS World* which is the base game to support the purchase of additional aircraft.

I am an Air Traffic Controller 4, \$59.99

Strange name for a computer game. This sim puts you in the job of being a tower controller. You handle aircraft on the taxiway as well as takeoffs and landings. Perhaps a bit expensive for what you get to do, only one airport included, but it is fun in a puzzle solving way.

Airport CEO, \$24.99

With this you take over the job of managing and designing an airport inside and out. No flying but you need to keep your customers happy.

Warplanes: WWI Fighters, \$19.99

There are about a dozen different airplanes from World War I for you to fly on missions, both dog fights and bombing. A lot of low and slow flying to be had here.

Endless ATC, \$5.99

In this sim you are looking at a green radar display and directing approaching and departing aircraft. As the traffic load increases it becomes a race to keep everyone safely in line and separated. You issue orders for headings, altitude, and speed to direct airplanes onto ILS approach courses.

Also don't forget the Redbird TD-2 flight simulator located in the FBO. Unlike the games described above you can use the Redbird to log time in your logbook making it especially useful for instrument currency.

There are many more. If you are really going all in, then you will need suitable controllers for flying. A mouse and keyboard just won't be enough. The following are not cheap, but they are my favorites. Very realistic and durable.

Honeycomb Aeronautical, <https://flyhoneycomb.com/collections/honeycomb-flight-sim-hardware>

VIRPIL Controls, <https://virpil-controls.us.com/>

Flight Velocity, <https://flightvelocity.com/>

Single Pilot Resource Management

Much of this article comes from "FAA Aviation Safety: March 2015"

When it is only you in the plane management of the flight is solely your job. But you shouldn't feel alone if you have made adequate plans beforehand.

Single-pilot resource management (SRM) is the art of managing all onboard and outside resources available to a pilot before and during a flight to help ensure a safe and successful outcome. Incorporating SRM into GA pilot training is an important step forward in aviation safety. A structured approach to SRM helps pilots learn to gather information, analyze it, and make sound decisions on the conduct of the flight.

You should analyze the situation considering your experience level, personal minimums, and your current physical and mental readiness level.

The FAA proposes use of the 5Ps as a practical framework to resource management.

PLAN:

The plan includes the basic elements of cross-country planning: weather, route, fuel, current publications, etc. The plan also includes all the events that surround the flight and allow the pilot to accomplish the mission. The pilot should review and update the plan at regular intervals in the flight, bearing in mind that any of the

factors in the original plan can change at any time.

PLANE:

The plane includes the airframe, systems, and equipment, including avionics. The pilot should be proficient in the use of all installed equipment as well as familiar with the aircraft/equipment's performance characteristics and limitations. As the flight proceeds, the pilot should monitor the aircraft's systems and instruments to detect any abnormal indications at the earliest opportunity.

PILOT:

The pilot needs to pass the traditional "IMSAFE" checklist (see Appendix 1). This part of the 5P process helps a pilot identify and mitigate physiological hazards at all stages of the flight.

PASSENGERS:

The passengers can be a great help to the pilot by performing tasks that the pilot delegates. However, passenger needs — e.g., physiological discomfort, anxiety about the flight, or desire to reach the destination — can create potentially dangerous distractions. If the passenger is a pilot, it is also important to establish who is doing what. The 5P approach

reminds the pilot-in-command to consider and account for these factors.

PROGRAMMING:

The programming can refer to both panel-mounted and hand-held equipment. Today's electronic instrument displays, moving map navigators, and autopilots can reduce pilot workload and increase pilot situational awareness. However, the task of programming or operating both installed and handheld equipment (e.g., tablets) can create a serious distraction from other flight duties. This part of the 5P approach reminds the pilot to mitigate this risk by having a thorough understanding of the equipment long before takeoff, and by planning in advance when and where the programming for approaches, route changes, and airport information gathering should be accomplished, as well as times it should not be attempted.

Whatever SRM approach you choose, use it consistently and remember that solid SRM skills can significantly enhance the safety of "crew of you" flights. By preparing in advance you will always feel better about the flight.

Resources

- **FAA Risk Management Handbook (Chapter 6)**
<http://1.usa.gov/1Lyumk4>
- **Advisory Circular 120-51E, Crew Resource Management Training** <http://go.usa.gov/ZECw>
- See the **I'm Safe** checklist in Appendix 1 of this issue.

Slipping Away

Have you practiced a slip since your checkride? It's a very good maneuver to have in case of an emergency. A well-timed slip can lower your altitude quickly without accelerating the airplane when you need to land, perhaps in a field.

The following procedure will outline how to perform a slip in a Cherokee or Warrior. For all other types of airplanes be sure to read the POH to determine the proper procedure.

1. Go to idle power.
2. Lower flaps fully (this may not be appropriate for other airplanes).
3. Press either the left or the right rudder, more on that later, fully to the floor and hold it there.

4. Use pitch to maintain airspeed. I recommend no slower than 80 since the indicated airspeed may not be totally correct in a slip. You do NOT want to cause a stall while slipping.
5. Use the ailerons to maintain your heading towards your intended landing spot.
6. Once you are low enough for a normal gliding approach you should remove the full rudder inputs and then land normally.

If done properly your descent rate may approach 1500 feet per minute but your airspeed will not be increasing out of control.

Now back to the question of using the left vs the right rudder, known as a left or a right slip. In a calm to gentle wind, I would use a right slip (right rudder to floor) because it simply provides the pilot a better view forward. The nose of the plane shifts right and gets out of the line of view.

Is there a crosswind? If there is, slip with the nose of the plane pointed into the wind. Then you're already slipping the right way to counter the crosswind.

The transition from forward slip to side slip will be simpler and less dramatic.

Slips might cause the indicated airspeed to be unreliable because the pitot tube will be at an angle to the motion of the air and airspeed control in a slip is very important. If you don't lower the nose, the airspeed will decrease. You should know how much to lower the nose and what sight picture is appropriate, even without reference to the airspeed indicator. Keep your speed indicating higher than normal for an extra buffer of safety.

To a passenger, a slip can be disorienting, increase anxiety, or even cause motion sickness. They just feel wrong. Rather than make your passengers uncomfortable, maybe go around if possible and try again. On the other hand, if you fly something like a Stearman or a Pitts, slipping might be required just to see the runway.

Know your Pilot's Operating Handbook and any limitations or recommendations regarding slips in your aircraft, and practice slips to perfect your technique.

Emergency Landings

Although it doesn't happen very often, we need to be ready for an emergency landing. Unlike during flight training where the instructor would usually give warning that such a maneuver would be practiced, the need for an emergency landing will be totally unexpected. You will not have much opportunity to decide where to go. Occasionally practicing a glide to a potential landing field is good to do.

Depending on your altitude at the time your engine stops you will have more or less time to decide where to go. If low down your view of potential landing sites will be more limited as well. Here are the steps I recommend should you ever be faced with the decisions.

1. Set the airspeed to best glide speed and don't let it drift as you descend. Make sure you memorize what best glide speed is for your airplane before you ever fly it.
2. Decide on where you are going quickly and don't forget to look below you. Unless the wind is strong you can probably reach any

point within about a 45-degree angle outward from your window. The closer the better.

3. Head directly towards the intended landing spot.
4. If there is time now is the chance to check the fuel level, switch tanks, adjust the mixture to full rich. Try to restart the airplane. If it starts, then great but if not you are at least on a good heading to a landing rather than a crash. If there is time use the radio to announce you are going down and say where.
5. On the way you might crack open the door to assist in your exit if you bend the airplane and turning off the fuel and electrical items could reduce the chance of fire.
6. As you get closer you will have to decide if you will be too high or if a direct glide will work.
7. If too high, then can you circle a time or two. In a relatively tight circle you will lose about 1000 feet on each circle at best glide speed. Do conditions allow that?

Should you use flaps now to aid in descent or would a slip work?

These are questions only you can answer which is why practicing this maneuver can tell you a lot about the performance of the airplane.

8. Once the landing is certain flaps should be fully down to allow slowest possible touchdown speed. Remember to keep flying the airplane and get as slow, without stalling, prior to touchdown as you can.
9. After touching down get out of the plane immediately and move away in case a fire would start.

In this article we did not discuss selection of landing surface. That will be left for a future article. Fortunately, in our area fields are generally abundant and usually provide the best choice.

Question of the Quarter

Question:

This public airport two miles southwest of Latrobe and about 33 miles southeast of Pittsburgh, in Westmoreland County, Pennsylvania is named after which professional golfer?

Answer:

Arnold Palmer Regional Airport (KLBE)

You just learned something new.

The "Higher Living" newsletter editor can be reached at david@execft.com Your feedback and article subject suggestions are welcome.

Appendix 1**I'M SAFE Checklist**

- Illness:** Do I have any symptom?
- Medication:** Have I been taking prescription or over-the-counter drugs?
- Stress:** Am I under psychological pressure from the job? Am I worried about financial matters, health problems, or family discord?
- Alcohol:** Have I been drinking within 8 hours?
- Fatigue:** Am I tired and not adequately rested?
- Emotion:** Am I emotionally upset?