



Higher Living

Welcome back. Seems as I get older the years get shorter. Right now, it's hard for me to believe that 2020 is in its last quarter. Perhaps some of that is because it seems that most of 2020 has been taken by worries about the virus. All of us have had major plans changed and schedules uprooted. I'm wondering how Thanksgiving and Christmas will play out this year. For now, I'm going to hold to a belief that they can somehow be close to normal. I hope everything is well with each of you. We will endure and it will be better.

In our 3rd quarter newsletter, the arrival of an Archer and a Baron were announced. The Archer has been a great success and some of you have gotten a checkout for flying that airplane. I have especially enjoyed the cool air conditioning while on the ground and the autopilot and HSI while flying. Please consider requesting a checkout. We have put the training in the Baron on the shelf for a while. Interest was high at the beginning but waned

once the final offer was announced. I certainly hope we can revisit multi-engine training and rental in the future.

In the last quarter we have had several first solos and new Private, Instrument and Commercial pilots as well. There are good things yet to come.

Come fly with us.

- David Williams, President
EFTS

Contact Us

Schedule your next aviation adventure at www.ExecFT.com

Airplane & Instructor Rates

Arrow (N9386N)	\$195/hr
Archer (N299PA)	\$165/hr
172XP (N1467V)	\$165/hr
Warrior (N41669)	\$155/hr
Cherokee (N720FL)	\$150/hr
Cherokees (N515DH, N711FL, N98166)	\$140/hr
Instructor time	\$50/hr

ADS-b In and Out

ADS-b has two sides, In and Out. “In” benefits the pilot and “Out” benefits air traffic control. In this article we will review both.

ADS-b is an abbreviation for “automatic dependent surveillance – broadcast”. In most cases the airplane part of the signal is generated by the airplane transponder in conjunction with a GPS. At the other end of the system are ground based antennas which both send and receive ADS-b information. There is an ADS-b transceiver tower on the ground at KTTA.

ADS-B Out works by broadcasting information about an aircraft's GPS location, altitude, ground speed and other data to ground stations and other aircraft, once per second. Air traffic controllers and aircraft equipped with ADS-B In can immediately receive this information. This offers more precise tracking of aircraft compared to radar technology, which sweeps for position information every 5 to 12 seconds.

Radio waves are limited to line of site meaning radar signals cannot travel long distances or penetrate mountains and other solid objects. ADS-B ground stations are smaller and more adaptable than radar towers and can be placed in locations not possible with radar. With ground stations in place throughout the

country, even in hard to reach areas, ADS-B provides better visibility regardless of the terrain or other obstacles.

Aircraft operating in most controlled U.S. airspace must be equipped with ADS-B Out.

ADS-B In provides operators of properly equipped aircraft with weather and traffic position information delivered directly to the cockpit. ADS-B In-equipped aircraft have access to the graphical weather displays in the cockpit as well as text-based advisories, including Notices to Airmen and significant weather activity. TIS-b and FIS-b are the names of the data streams that come to the airplane via ADS-B In. TIS contains traffic location information which can be displayed on a GPS and FIS is text info such as METAR, TAF and PIREP information. Our aircraft with Garmin GTN 650 GPS can show the traffic and weather information from ADS-b In. Our aircraft without a GTN 650 make use of a Stratux device to receive ADS-b In and via Wi-Fi pass it on to users of a variety of aviation applications running on tablets.

Flying From a “Big” Airport...Part 2 of 2

In the 3rd quarter newsletter, we covered the procedure for flying from KTTA to KRDU. In this issue we will fly the return trip from KRDU to KTTA. There are similarities but it's not

quite just a matter of reversing the arrival procedure. This article will go through all the steps of flying from a controlled (meaning there is a tower) airport on your own.

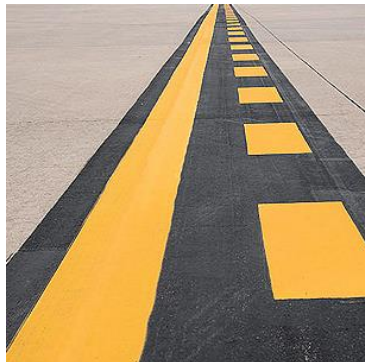
This paragraph is from the 3rd quarter article, but it bears repeating. Whenever I fly to (or from) a controlled airport, I always write down the frequencies I expect to be using before I ever take off. That way they are readily at hand when I need them. Also, I will make full use of all radios in the airplane. If you have 2 radios, then you can preset 4 frequencies. Uncontrolled airports, such as KTTA, generally only have 2 frequencies in use, AWOS and CTAF. KRDU will require you to make use of 4-5 different frequencies on the way in and 5 on the way out. Same applies to KFAY or KGSO. Finally, I will also print a copy of the airport taxi diagram and study it a bit based on the runway I think I will be landing on so the taxi directions will make more sense.

So, we are now sitting on the ramp at KRDU. Our engine is running, and we are ready to begin the process of leaving. Here are the steps to follow. For the sake of brevity, I am leaving out a few details so please make sure you carry along an experienced person on your first few trips that can get you out of any confusing situations.

1. First thing we need to do is to listen to the KRDU weather, known as ATIS. ATIS is AWOS with some extra information thrown in. The ATIS frequency is 123.80. You should listen carefully and jot down the items which could affect you and listen for an alphabetic identifier which is heard at the beginning and the end of the broadcast. You will use this identifier to tell air traffic control (ATC) which broadcast you have heard. You will also be told some frequencies to use later so write them down. If you need to perform a runup you should move to a safe spot and get that done now as well.
2. This next step, clearance delivery, is unique to a controlled airport. KRDU has a clearance delivery frequency of 120.10 and it is on that frequency that you tell what you plan to do as you leave. While sitting on the ramp before you move the airplane you will tell clearance your airplane N number, your airplane type, the alphabetic identifier of the last weather you listened to, your destination and the altitude you wish to fly. The clearance delivery person will then give you a code for your

transponder, some initial departure instructions, and the frequency to use to contact departure. You should repeat all that back. This information will be automatically passed on to the tower and the departure controller, so they know what you are planning to do after takeoff.

3. Once you have your clearance instructions you should then taxi to the line which separates the ramp area from the taxiways and stop there without crossing the line. That line looks like this.



You stop on the solid side until cleared to taxi. Look at which taxiway you will be entering and then call ground control on 121.90 to get your taxi instructions. Call ground control and say your N number, your location (on the ramp at taxiway A2, etc.) and the weather identifier you last heard. Be ready to write down everything the controller tells you. You will be

given a series of taxiways to follow to the runway that is being used. This can be simple, or it can consist of a long series of turns and holds along the way. In either case you must understand it and repeat it all back to the controller. After that you are free to begin taxiing as instructed. Stay on the ground control frequency until you reach the departure runway.

4. Once you reach the departure runway you must stop without touching the runway hold line (same as at any airport). That line looks like this.



Your next step is to contact the tower. That frequency is 127.45. The tower controls the runway and only a tower controller can issue a takeoff clearance. The tower controller will say something like "cleared to take off, runway 5 right". You repeat that back. Special tip here...once you hear you are cleared to takeoff you are also clear to cross the hold line from

- the taxiway and begin rolling down the runway.
5. Shortly after leaving the ground the tower controller may give you an initial turn to make and will ask you to switch to the departure frequency and contact them. You acknowledge the request and change frequencies (remember the clearance delivery person gave you the departure frequency to use...you did write it down?).
 6. The departure controller will give you a turn to move you away from the airport and begin to get you on course to your destination. There may be several turn instructions or altitude changes during this time. Just listen for them and verbally acknowledge the instruction. You may also hear "resume own navigation" which means you may make turns you need to point yourself to where you want to go.
 7. Once you are around 10 miles out you may hear "radar service terminated, frequency change approved". This means you are on your own. You should switch the transponder to 1200, you may change course or altitude and you should change the radio

frequency to those for KTTA and fly back as normal. You made it!

Contact one of the EFTS instructors if you would like to practice going into or out of KRDU.

Why Is This on the Checklist?

Sometimes pilots correctly follow a checklist but perhaps they don't recognize the deeper reason why a button is being pressed or a lever is being moved. Here are a few items that everyone does but perhaps don't really know the underlying reason for doing them.

- Checking carburetor heat. You are looking for an RPM reduction to indicate the system works and you are listening for roughness in the engine to see if you have carburetor ice right now (a long runup on a humid day can create ice).
- Turning fuel pump off and later back on. You should be watching the fuel pressure gauge to make sure the pressure stays up with the pump turned off. Remember that you are controlling what is really an emergency pump. There is an engine driven pump that we can't control. So if the pressure drops when we turn off the pump switch it is

telling you the engine driven pump is failing...don't fly.

- Moving flight controls. This is a test to determine 2 things. First that the controls can be moved fully in, out, right and left. There is no binding. Make sure to move through full range of motion, not just a little. Second we are making sure the ailerons and elevator really move as they should and in the proper direction so look out the window and verify it when you move the yoke.
- Idle test. After the 2000 RPM runup the checklist says set throttle to idle. You want to know now if the engine will run when the throttle is fully out. Otherwise you will not know until power is reduced for landing or a descent.
- Full throttle on takeoff. Two items here. Don't be hesitant to move the throttle fully open because doing so is required if you expect to meet the performance the POH says we should have. Second be sure to look at the RPM gauge also. Perhaps full power is only reaching a low RPM value and will not be adequate for takeoff. You should

expect the RPM to reach close to 2300 while sitting still.

- Magneto check. You remember the right-left-both routine but why do it. Three things to look for here. First, when switching from both to right or left there should be a small drop in RPM because you are turning off half of the spark plugs. Second there should be a small, or no, difference between right and left as that could indicate a timing issue or failing magneto. Third, the engine should run smoothly on right or left. If not running smooth it can indicate a problem with a spark plug. The actual amount of recommended maximum RPM drops are found in the POH for the airplane you are flying. Be sure to read them. Failing any of those 3 items warrants not flying.
- Turn off avionics first before shutting the engine off. That is to prevent any voltage spikes occurring as the engine spins down from damaging the radios and GPS. Also make sure avionics are off when starting an engine.
- Mixture to full cut off when shutting down. Wait until the engine has

fully stopped before next turning off the magneto switch. You are making sure that any fuel left in the carburetor is burned before the engine is stopped. It's a safety issue to lessen the chance of accidental start.

Passing Your Checkride

It isn't possible to guarantee that you will pass every checkride on the first go but here are some of my observations to help make your next one go smoothly. I go over all these items with my students.

- Read the POH for the airplane you are using. Understand the V speeds and procedures, especially emergency ones. Know fuel quantities, fuel burn rates and electrical voltages.
- Read and understand the ACS. The first section of that document, prior to the first flight maneuver, is where your oral exam will come from. If you haven't read the ACS then you may not know what to expect. The maneuver section describes what you are expected to know for each one. No excuse for not thoroughly reading this document. Your instructor should have already explained the

purpose and importance of this document.

- Fly with a different instructor than your usual one about 2 weeks before your checkride. Have them take you through a simulated checkride to get that 2nd opinion. It will make you feel better.
- Make sure you fly some alone in the days just prior to your checkride. At least in the week prior.
- Don't put off preparing for the oral exam. The oral exam isn't just a rehash of the written exam. You can do well on one and not the other. Remember the oral exam subjects are laid out in the first section of the ACS.
- On the day before your checkride try to just relax and sleep well the night before.
- If you do mess up a maneuver during your checkride your examiner will ask if you want to stop or continue. The correct answer is always to continue. That way you will get all the other requirements completed the first time. You will have to return for a retest but the only thing you will need to perform is the maneuver you failed...not the entire test.
- Remember that no instructor will send you off

on a checkride if they feel you may not be ready for it.

The NTSB and the Nall Report

The NTSB, or National Transportation Safety Board is responsible for investigating and reporting probable cause of accidents...not just aviation but also railroad and auto. We know it mostly from the interviews and reports we see in the news following an air disaster. The purpose of the NTSB investigations is to try to make sure the same accidents don't recur by publicly reporting and by recommending or requiring changes to safety programs or aircraft design. All of those reports are available on the NTSB website and they can be very educational to us.

There are about five general aviation aircraft crashes every day. Each of those gets entered in the NTSB database. We can learn from those.

There is a link to use to get to the NTSB database search page:
<https://ntsb.gov/layouts/ntsb.aviation/index.aspx>

From that link you can select type of accident, airport or N number and date. Suppose you fly a Cessna 172 the most and perhaps you are curious what most often causes people to crash them. You can search by aircraft

type to find out. Perhaps you are curious what accidents have happened at airports you may visit. You can search by location and read about that. By reading these reports we become better pilots by our enhanced awareness of potential dangers.

The AOPA annually summarizes all accident information in a particularly important document called the Nall Report. You can get it here:
<https://www.aopa.org/-/media/Files/AOPA/Home/Trainin-g-and-Safety/Nall-Report/27thNallReport2018.pdf>

Or just get it from the link in the ExecFT.com library. The 28th edition of the Nall Report was being released as this document was being written so it should be available in a week or so from now.

In that document you will find everything you might want to know about aviation safety and safety trends. Please have a look.

Every accident can become a learning experience for us if we take the time to understand the factors involved and avoid them ourselves.

Question of the Quarter

Where is ADS-b out required?

Answer:

After 1 January 2020, unless otherwise authorized by ATC, no person may operate an aircraft in

Class A, B, and C airspace unless the aircraft has equipment installed that meets ADS-B Out capability. This ADS-B Out airspace additionally includes:

Class A airspace above 18,000 feet MSL.

Class E airspace at or above 10,000 feet MSL.

Within 30 nautical miles of Class B primary airport (the Mode C veil), from the surface up to 10,000 feet MSL.

Class E airspace over the Gulf of Mexico from the coastline of the United States out to 12 nautical miles, at and over 3,000 feet MSL.

91.225 (f) Each person operating an aircraft equipped with ADS-B Out must operate this equipment in the transmit mode at all times.

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