

IT'S TIME FOR THE CHECKRIDE – ARE YOU READY?

Your FAA Examiner, or Designated Pilot Examiner (DPE), will probably spend 2+ hours asking you to explain certain subjects applicable to the certification/rating that you seek. DON'T take this lightly. The following provides a list of subject material that you should be able to discuss in depth. Ensure you can at least discuss as thoroughly as below. Remember, it's ok to use acronyms and to write them out on a piece of paper and explain each in the oral portion of the check ride.

POSITIVE AIRCRAFT CONTROL: You have control of the aircraft at all times and if passing controls to another you verify who has control through the 3 step positive exchange of flight controls process. No matter what happens you fly the plane first! Aviation, Navigate, Communicate.

POSITIVE EXCHANGE OF FLIGHT CONTROLS: This is a 3 step procedure. The person initiating the change of controls states either "I HAVE THE AIRCRAFT" or "YOU HAVE THE AIRCRAFT", followed by the person either relinquishing control or receiving controls acknowledges such and then followed by the initiator of such once again.

PRIVILEGES AS A PRIVATE PILOT: Your examiner will undoubtedly ask you what you can fly and how you can fly with your new certification. So you should know the following:

1. You cannot fly for compensation.
2. You can share the expenses for a flight with others onboard as long as you pay at least your fair share.
3. You can fly a single engine, fixed gear airplane as long as the horse power is 200 or less.
4. You'll need endorsements for the following on top of your private pilot certification. If the examiner gives you an example of an aircraft to see if you can fly it and you don't know the aircraft, simply tell him you're not familiar with it.
 - a. High Performance (182's, Bonanza's, Cirrus). Anything over 200 hp.
 - b. Complex. Anything with retractable gear will usually fall into this but the exact definition of a complex aircraft is constant speed prop, retractable gear and flaps.
 - c. Tailwheel. Aircraft that don't have tricycle gear have a tail wheel.

STALL SPIN/AWARENESS: You should be able to identify what causes a stall. Specifically, the angle of attack is reached where air no longer flows over the wings properly to create lift. The spin is simply a stall where one wing stalls before the other. Recovery from a spin should be explained as the acronym PARE. These procedures should be performed procedurally and not simultaneously for best results.

Power idle
Ailerons neutral
Rudder opposite the spin
Elevator down

COLLISION AVOIDANCE: Explain that collision avoidance is every pilots responsibility regardless of whether they are on radar with ATC (tower or an airport or flight following or IFR flight plan). See and avoid. The only time a pilot is relieved of this is when he has zero visibility in IMC. Explain right of way rules.

WAKE TURBULENCE AVOIDANCE: Explain that the best way to alleviate this problem is by creating a time gap between aircraft thus allowing the vortexes to dissipate. Explain that a big, slow and clean configured aircraft creates the most dangerous wake turbulence. Explain that as the pilot you can tell the tower you are going to hold for more time if you believe it's needed before taking off behind a large aircraft. Three (3) minutes is preferable on large planes. Explain that if you're landing behind a big plane and time has not elapsed sufficiently for the wake turbulence to dissipate that you should stay above the aircraft's glide path and you should land beyond its touchdown point. If taking off behind a large aircraft rotate prior to their rotation point. Remember the soup bowl.

LAHSO: Land and Hold Short Operations (LAHSO) are often in effect where 2 runways intersect. LAHSO operations are only in effect at airports with an operating control tower. If in effect, you will be notified immediately upon contact for landing that such is in effect and the distance for landing. If you cannot land and stop in that distance you must refuse the clearance immediately with ATC. Student pilots can accept a LAHSO.

RUNWAY INCURSION AVOIDANCE: This is a hot topic with the FAA. Be able to recite all of the following to the examiner.

- 1) Always have a taxi diagram in front of you
- 2) Always read back all instructions
- 3) Never stop on a runway
- 4) Exercise sterile cockpit
- 5) Request progressive taxi at airports that you are unfamiliar
- 6) If instructed to Line Up and Wait on a runway turn all your lights on and line up off centerline so that you can be seen easier.

CFIT: Controlled Flight Into Terrain. This normally occurs by VFR pilots flying into IMC conditions. Don't do it. You can avoid it by setting minimums for yourself and sticking to them. As an example, I'm not going to fly unless the ceiling is at least 3000 AGL and it is not forecast to come down lower.

CHECKLIST USAGE: Explain that every pilot, no matter how good they are, are human and thus subject to mistakes. Checklists help us ensure we are not skipping an item that could result in an accident or dangerous situation.

CHARTS: If you have not already done so, download the Aeronautical Chart User's Guide. It's free in PDF format and can be found on Cherokee Flight's website under Resources. Read it all for your checkride, i.e. VFR or IFR. Know every single thing on the chart.

ADM and Risk Management.

Aeronautical Decision Making. It's the process of using every available asset available to make a decision. Know these and be able to explain it all. DECIDE – Explain it as defined below.

Detect change (i.e. engine RPM loss)

Estimate the need for action (I've got carb freezing and I need to clear it)

Choose the outcome (I want to restore power)

Identify the actions (turn on carb heat)

Do the actions (turn it on)

Evaluate the systems for change

Risk Management. Mitigating risk is a big deal. As a pilot you should do everything possible to assess and eliminate risk prior to ever moving the aircraft. We love acronyms in aviation. Why? Because it helps us remember things we may otherwise forget. Same here. So we use PAVE and acronyms within it.

Pilot- Use IMSAFE (see Note 1 below)

Aircraft – Use AVIATE (see note 2 below) and of course perform a thorough preflight

Environment – Obtain and evaluate weather (METARS, TAFS, Area Forecasts), Notams, A/FD, TFRs, SUA

External – pressures from family, work, etc

Note 1

Illness (the last thing we want to do is get behind the controls of an aircraft if you're sick)

Medications (many drugs are not allowed by the FAA and this includes over the counter)

Stress (our lives and busy and without even thinking we can become stressed out)

Alcohol (8hrs bottle to throttle, .04 is flying under the influence and highly punishable)

Fatigue (get enough sleep – if you're always tired see a doctor)

Eating and drinking (don't go hungry and don't allow yourself to get dehydrated)

Note 2 – AVIATE – required inspections

Annual – every 12 mths (IA must sign) *

VOR – every 30 days (5 ways to verify it – see Note 3 below)

I00 hr – every 100 hrs when used commercially, tach or hobbs time (A&P or IA)

Altimeter – Pitot-static check every 24 mths (required for IFR only) *

Transponder – every 24 months *

ELT – every 12 mths, normally done with annual *

*Extends until the end of the month in which due

DANGEROUS ATTITUDES: Be able to describe the different attitudes and the proper antidote for each.

Name	Description	Antidote
Antiauthority	"Don't tell me..."	Follow the rules; they're usually right.
Impulsivity	"Do something quickly!"	Not so fast-Think first!
Invulnerability	"It won't happen to me...."	It could happen to me!
Macho	"I can do it."	Taking chances is foolish.
Resignation	"What's the use?"	I'm not helpless.

WIRE STRIKE AVOIDANCE: Explain that towers have wires from the top that extend outward at a considerable distance at the ground so the tower is not the only thing to be voided. Additionally, when looking for an off airport emergency landing site look for poles as you may not be able to see the wires until very close to the ground after already having committed.

AIRSPACE: While knowing airspace is given if you know your charts it is worth reemphasizing. Some of the places where pilots get tripped up are overlying or underlying airspace. If the examiner points to a spot, such as the SW sector of LZU's class D or the eastern sector of Greenville Downtown GMU's class D, you should be able to address the airspace all the way up to class A. Normally, if it's not B, C or D and it's above 1200, or 700 in the cases of airports with approaches, it is class E. Also note that towered airports that do not have an operating control tower 24 hours a day normally revert to class G when the tower is closed. Always check the A/FD to be sure.

TEMPORARY FLIGHT RESTRICTIONS (TFR'S): Explain that these are implemented by the FAA when deemed necessary for safety. These are activated at a specific time and for a specific radius and up to a specific altitude. Examples of such are for VIP's and sports events. They are not identified on charts. The Flight Service Station can provide information on such and is also available on electronic systems such as Foreflight or Garmin Pilot.

SPECIAL USE AIRSPACE: Ensure you can identify on charts **MOA's, Restricted Airspace, Prohibited Airspace, Warning Areas, Alert Areas and National Security Areas.** Be able to discuss each and how they apply to you as a pilot, i.e. when you can or cannot enter such and how to determine such.

AVIATION SECURITY: Have 1-866-427-3287 General Aviation Security Hotline in your phone. Explain if you see somebody on the airport doing something that seems inappropriate, or suspect in nature, you would call the airport police, local police or the hotline.

SINGLE PILOT RESOURCE MANAGEMENT: Explain that this is simply ensuring you are using cockpit management to have things where you need them. It's also doing things as you have the time so that everything doesn't start happening at the same time. As an example, you'd want to get the AWOS or

ATIS at your destination airport as soon as you can so that you're not trying to decide what runway to use and how you're going to approach at the last moment.

CLOUD CLEARANCES/VISIBILITY: You should know the various cloud clearances/visibility. FAR §91.155. The old 3 152's applies to E below 10k, class D and class C. It's the one you absolutely need to know by heart. This of course is 3sm vis, 1000 ft above, 500 ft below and 2000 ft horizontally.

Airspace	Flight visibility	Distance from Clouds
Class A	N/A	Not Applicable.
Class B	3 sm	Clear of Clouds.
Class C	3 sm	500 feet below, 1,000 feet above, 2,000 feet horizontal.
Class D	3 sm	500 feet below, 1,000 feet above, 2,000 feet horizontal.
Class E		
< 10,000 MSL	3 sm	500 feet below, 1,000 feet above, 2,000 feet horizontal.
=>10,000 MSL	5 sm	1,000 feet below, 1,000 feet above, 1 sm horizontal.
Class G		
<1,200 AGL		
Day	1 sm	Clear of clouds.
Night	3 sm	500 feet below, 1,000 feet above, 2,000 feet horizontal.
> 1,200 AGL but <10,000 MSL		
Day	1 sm	500 feet below, 1,000 feet above, 2,000 feet horizontal.
Night	3 sm	500 feet below, 1,000 feet above, 2,000 feet horizontal.
> 1,200 AGL and =>10,000 MSL	5 sm	1,000 feet below, 1,000 feet above, 1 sm horizontal.

WEATHER: Download and read AC 00-45H. If you prefer to have a hard copy you can purchase one at the flight school. AC-0045H is a book on weather. There's tons to know about weather. However, you should ensure you can look up and decipher everything on the following:

a. METARS: Know everything at least through the RMKS section of a Metar.

b.TAF: Published 4 times a day, every 6 hours. Ensure when given a local time that you can convert it to military time (24 hr clock) and then convert it to UTC (zulu time) and thereafter identify the correct weather forecast for that period based on the TAF.

b. Winds Aloft. Ensure you know how to look up and decipher winds aloft from data reflected on winds at aviationweather.gov. Remember for your cross county you will most likely have to interpolate.

c. Thunderstorms.

1. 3 things are necessary to produce one: moisture, a lifting force and unstable air.
2. Stay at least 20 NM away from storm

d. Airmets

1. Airmet Sierra: Mountain obscuration and IFR conditions. Helps to remember it by thinking of the Sierra Mountains.

2. Airmet Tango: Turbulence and Low Level Wind Shear.

3. Airmet Zulu: Icing

e. Sigmet. A U.S. SIGMET advises of weather, other than convective activity, that is potentially hazardous to all aircraft. SIGMETs are issued (for the lower 48 states and adjacent coastal waters) for the following weather-impacted reasons:

1. Severe Icing
2. Severe or Extreme Turbulence
3. Dust storms and/or sand storms lowering visibilities to less than three (3) miles
4. Volcanic Ash

f. US Convective SIGMETs. Convective SIGMETs are issued in the conterminous U.S. if these conditions are occurring or expected to occur:

1. Line of thunderstorms at least 60 miles long with thunderstorms affecting 40% of its length.
2. Area of thunderstorms covering at least 40% of the area concerned and exhibiting a very strong radar reflectivity or a significant satellite or lightning signature.
3. Embedded or severe thunderstorms expected to occur for more than 30 minutes.

Any convective SIGMET implies severe or greater turbulence, severe icing, and low level wind shear. A convective SIGMET may be issued for any convective situation which the forecaster feels is hazardous to all categories of aircraft. Bulletins are issued hourly at Hour+55. The text of the bulletin consists of either an observation and a forecast or just a forecast. The forecast is valid for up to 2 hours.

d. Prog Charts. Make sure you can identify the various types of fronts (cold, warm, occluded) and the weather associated with each.

AIRCRAFT.

Fuel System: Gravity flow, 2 tanks. Make sure you know what the usable fuel is in the airplane you are taking the checkride in. It varies so double check before you go into your oral examination.

Electrical System: N6512H has a 60Amp 14 volt alternator for charging and a 12 volt battery. All other 172's have a 60 amp 28 volt alternator for charging and 24 volt battery.

Engine: Use the acronym LHAND below to describe it.

Lycoming O-320, 160 HP at 2700 RPM's
Horizontally Opposed
Air Cooled
Normally Aspirated
Direct Drive

VFR EQUIPMENT REQUIREMENTS: Use TomatoFlames for day VFR and FLAPS for additional equipment needed at night.

VFR DAY

T achometer
O il Pressure
M agnetic Compass
A ir Speed Indicator
T emperator (if water cooled)
O il Temperature
F uel Guage(s)
L anding Gear Indicator (if retractable gear)
A ltimeter
M anifold Pressure (if applicable)
E LT
S eat Belts

NIGHT FLIGHT (IN ADDTION TO VFR DAY)

F uses
L anding Lights
A nti Collision Lights
P osition Lights
S ource of Electricity

Minimum Equipment List (MEL). A MEL may or may not be part of an aircraft's operating manual. A MEL identifies what equipment can be inoperable, how long it can be inoperable and under what conditions. As an example, a MEL could site Comm2 can be inoperable for VFR but not IFR and it may give you a period of 48 hrs. This means that if identified it at 0900 on 5/21/2020 you could only use the aircraft for VFR and you would have to ground the plane at 5/23/2020 at 0859. Most light general aviation aircraft do not have a MEL. In those case you revert to 91.205 as identified with TOMATOFLAMES.

Oxygen Use:

> 12,500 and up to 14,000 for > 30 mins
Over 14,000 regardless of time
Over 15,000

Crew Required
Crew Required
Crew Required and must be avail to all

Scuba Diving

Scuba diving can be a problem in conjunction with flying. Air consists of oxygen and nitrogen. When a diver ascends to the surface, if they surface too quickly, the nitrogen in the blood separates from the blood and lodges in tissue causes what is known as the Bends. This can be deadly. Divers must give a specific amount of time at each depth on the way up to allow for nitrogen to not separate. Flying after diving can be deadly as the nitrogen may not have returned to normal. Therefore the following should be used as a guide for flying divers.

Depth of less 60 feet or less

12 hours must pass before flying and not higher than 8,000 MSL
24 hours must pass before flying above 8,000

Controlled Ascent to Surface (more than 60 feet deep)

24 hours must pass before flying

Wind Shear

Wind shear can occur at any time without warning. It is a phenomenon that results in a strong down draft in a limited area. Airmet Tango is issued for turbulence and low level wind shear. Pilots seeing sudden increase in airspeed on final without any changes to pitch or power should immediately go full power and start a climb for go around. Dangers are not simply loss altitude but if the pilot adjusts the power to reduce to previous speed and you pass the center of the wind shear you may lose that headwind and suddenly stall.



Alcohol Use

Flying and alcohol don't mix. A pilot must have a blood alcohol level of below .04 and have no residual effects.

Maneuvering Speed

While you should know all your V speeds you should know that only one varies and it is by weight. That V speed is V_A for Maneuvering Speed. The heavier the aircraft the higher the maneuvering speed. It is the speed that the aircraft will stall at with full deflection of the flight controls before doing damage to the aircraft. Maneuvering speed should be used whenever there is rough air or, of course, when maneuvering. The POH will specify certain speeds for some maneuvers.

