FAA “ORAL” STUDY QUESTIONS – IMPORTANT:

Aircraft and Maintenance

- Maintenance inspection periods (100hr and Annual) – how long are each valid? When can you fly over these times?
- What happens if your aircraft annual inspection expires? Is the aircraft legally flyable?
- What is a Ferry permit and when can it be issued and by whom?
- What instruments would be affected by loss of an engine suction pump?
- What static instruments fail if the outside static port clogs. How does each fail? Describe. What can you do to continue to your destination?
- What does an ELT do? When must the battery be replaced/inspected? What frequency/s does it transmit on?
- How long of a takeoff roll do we need if the density altitude is 4000 feet in a C-172 aircraft at KPSK? (See aircraft performance charts)
- Describe adverse yaw and p-factor? How do you control them?
- What is maneuvering speed. Is it one fixed speed or does it vary? Why?
- What are the following values for your aircraft? Va, Vfe, Vne, Vso, Vs1?
- What is the maximum baggage weight for your airplane?
- How do you get into a spin and more importantly perhaps, how would you recover from a spin?
- Explain ADS-B. What is mode A, mode C, and mode S?
- How often must ADS-B out systems be inspected?

- What is ADS-B IN? What are its features?
- What does a p-lead refer to?
- What instruments does the pitot-static system drive?
- What color is hydraulic fluid in our aircraft?
- How does each primary aircraft control work? In flight, if you push the left rudder pedal where does the nose go? Which way does the rudder physically move? How does the trim control work? If you have an UP-trim position what is the physical position of the tab on the tail? (Up or down)? Is the trim tab on the right or left elevator? Why?
- If you go out to fly an airplane and a tire is flat. Can you legally change the tire assuming you have the new replacement tire, tools, and the knowledge of how to do it? What would be your airframe logbook entry?
- What items are you allowed to work on if you are the owner or chief operator of a FAA part 91 aircraft? (13)
- How many horsepower does the engine have in the C172 we fly? How many spark plugs? Does it have a carburetor or is it fuel injected? Why do we have carb heat control?
- What does the rubber belt power that you can see at the front of the engine cowling? What does it do? What happens if it breaks in flight?
- What happens if the alternator systems fails and you are drawing current from the battery without replenishing? What are system concerns?
- Is the engine/propellor direct drive or gear driven in this aircraft? How many cylinders? How many sparkplugs for each cylinder?
- What do aircraft FLAPS do? Are they necessary? Could you land without them?
- When you charge or start your aircraft from an outside power source what system should be turned off during the procedure? (Alternator-1/2 the red switch) Why?

- Why is the Red Master Switch split in two parts (two different switches). What does each switch do?

- When you charge or start your aircraft from an outside the aircraft power source what system should be turned off inside the aircraft during the procedure? (Alternator-1/2 the red switch) But why?

- Will the aircraft engine still run if you turn the master (red switches) OFF while flying?

- What do the magnetos do? How many are there? How do they work?

- If you encountered a bad mag check (more than 125 rpm drop and it runs rough), can you (the operator) fix it in preflight? Is the aircraft be safe to fly?

- What is the difference between UTILITY AND NORMAL weight and balance categories of aircraft operation?

- When is it required to carry an AFM (aircraft flight manual) in the aircraft during flight?

- What is an aircraft MEL? Does the C172 we fly have one? What is the meaning of "Kinds of Operation" and how does that relate to the MEL? What does TOMATOFLAMES mean…list them? (Please read FAA 91.205).

- How do you calculate the fuel required for a trip with an E6B circular slide rule? How much fuel must you land with for both day and night flights (minimum)?

- What does POWER control on your aircraft? What is manifold pressure and when is that used to measure power?

- Explain a "fixed pitch" propellor. Is it cut for maximum efficiency in both climb and cruise? How could it be made more efficient?

- Explain how a constant speed propellor works. Why is it called constant speed? Do you want to take big or small bites of air when you climb. Where is the propellor control sitting on take-off? What powers the propellor control and blade position?

- What is an aircraft airworthiness directive (AD)? Who is responsible for making sure they are accomplished in a timely manner?

- What is an aircraft Type Certificate? What is an aircraft supplement type certificate (STC)? LOOK UP “FAA TCDS” for the C172 aircraft we fly.

- What instruments would be affected by loss of an engine suction pump on most aircraft?

- What happens if the pitot static system port clogs or ices over outside the aircraft? Any way to fix that problem while in the air?

- What is the effect of an aft CG loading of the aircraft. Is the aircraft more or less stable?

- What is the effect of forward CG loading of the aircraft? Is the aircraft more or less stable?

- What logbooks are required for a small aircraft? Airframe, Engine, Propellor. The airframe logbook is typically the most used for recording airframe changes including “return-to-service” after maintenance and recording required inspections such as ELT, Transponder, Altimeter checks, etc.

- What are required documents to be in an aircraft at all times of operation?

- What is FAA 8130? (Best to know definitions and reporting requirements).

WEATHER

- Explain density altitude. Why is it important?

- What is a miroburst and why is it important? What is windshear?

- What are your concerns with following a large jet aircraft too closely? How about landing and takeoff considerations?

- What weather sources would you use to prepare for an upcoming VFR flight? Be detailed with this answer. The GO/NO GO decision is one of our hardest decisions.

- What is the significance of 29.92 barometric pressure and a temperature of 59 degrees F to aviators? What barometric pressure does the altitude encoder in your aircraft report to ATC?

- For an upcoming VFR cross country flight, where do you get your wind information at different altitudes? Can you trust one source for that information?

- Can you read both a METAR and a TAF? How do you use each?

- What does “AWOS” stand for? What does “ASOS” stand for? What does A02 mean in a Metar Report?

- How do you positon your aircraft to fly in a significant crosswind when landing and taking off? Can the maximum tested crosswind component listed for your aircraft be exceeded?

- Do you have any de-icing equipment on your aircraft? How about anti-icing equipment?

- What are your concerns when the temperature and dewpoints start coming close together?

MEDICAL

- How long are the third-class, second-class, and first-class medicals valid for?
- What is a “Basic Med” medical? What are restrictions on its use?
- Is it legal to fly with an expired medical?

PILOT OPERATIONS

- What would you do if you got lost? (4-Cs)
- How would you activate runway lighting at night?
- How would you find the frequency for Flight Service when departing KPSK?

- Would you fly as PIC with a passenger who was drunk or injured? Concerns?
- In order for you to fly with a passenger, what are your responsibilities as a pilot-in-command?
- How many pilot hours in the logbook are required for you to fly for a charity?
- **What does "common purpose" mean when deciding if you can legally split aircraft charges for a proposed flight with a friend or acquaintance?**
- **Is a pilot certificate good for life? Why is it properly called a "certificate" and not a "license"?**
- What is CTAF? When does a tower-controlled airport frequency revert to CTAF?
- **Is it legal for a student pilot fly into a class B airport?**
- What is the difference between "Currency" and "Proficiency"?
- What are Category and Class limitations when referencing your pilot certificate.
- You just received your ASEL Pilot's Certificate. What is required for you to fly a conventional gear airplane (tailwheel) if you have only trained in a nose wheel aircraft?
- What must you do and log after two years of having your pilot's certificate to retain your privilege to fly?

AIRSPACE

- **Do you understand the abc's for Airspace? Describe all in terms of visibility and cloud clearance.**
- What is a TRSA? Explain operations.
- What is a mode C ADB-B Veil? Where is it found?
- **Where is ADS-B (OUT) required? Is ADS-B (IN) currently required?**

- Remember class E airspace can begin (1) at the ground (2) 700 ft. or (3) 1200 ft. over most of the country. See sectional indications for specific airports. Any dashed lines blue or magenta indicates controlled airspace goes to the ground (no class G).

Navigation

- What is FAA AC90-66C? What does it detail?
- What is an isogonic line on a sectional map? How do we use it?
- What is the difference between TRUE NORTH AND MAGNETIC NORTH? Are VORs TRUE or MAGNETIC? Are runways aligned to TRUE OR MAGNETIC? What are the correction lines called on a map?
- What are the three "Pillars" of Aviation"? AVIGATE, NAVIGATE, and COMMUNICATE in that order. (We gave you an answer!)
- Are both the restrictions and controlling agencies for MOAs and Restricted Airspace shown on a sectional chart? If so where?
- What does the term "VOR" stand for? Do they have different power levels? How far away can you receive a typical VOR such as PSK?
- What does it mean when an instrument pilot reports that he is doing a "LOW APPROACH"? Do you need to be concerned when you are flying nearby or in the pattern?
- What is the minimum VFR altitude when flying inside of Class D airspace
- What is minimally required when you fly over a Class C airport above the "top" of the stated Class C control area?
- What is pilotage and dead reckoning? What are other types of of navigation?
- What is radio navigation? Talk about different types.

NTSB

- What is required reporting for aircraft accidents and incidents?
- What is NTSB 830? Know reporting requirements.

ACS Maneuvers

- What is the difference between S-Turns over a road (or other straight object on the ground) and Turns-Around a Point? Remember keep the same radius on turns-around-a point. Announce when you are steep and when you shallow in your turns around a point. S-turns require different excursion distances from the road depending on wind.
- Why are “Clearing Turns” required before each maneuver?
- Why do you need your right foot handy when doing a power on stall to a break?
- What is a constant rate climb? What is a constant rate turn-bank? How many degrees of turn is the aircraft in when performing a constant rate turn-bank?
- What is a stabilized descent? List several elements.
- Describe “UNUSUAL ATITUDES”. What can you as a pilot do to get out of one of those? Procedures.
- Describe how to do a “FORWARD SLIP”. Why would you ever want to do one of those?
- Why do we slow the aircraft to below 80 MPH prior to doing a “POWER-ON STALL?
- What is “TURNS AROUND A POINT” and how do you do them according to the ACS? What are safety concerns and plans to alleviate?
- What are “S-TURNS ACROSS A ROAD (or something straight)? How do you do them? What are safety concerns?

- According to the ACS… What is the minimum altitude you should keep when doing altitude changing maneuvers such as STALLS? What are safety concerns? Define a “clearing turn”.

- What is meant by “Controlled Descent”?

- What is meant by “A DIVERSION” as referenced by the ACS? What is expected of you?

SCENARIOS:

1. WE are flying along and the aircraft battery seems to be discharging (ammeter goes to the left). What do we do?
2. Both gas tanks show empty gauges. What do we do?
3. WE are deciding whether to make a trip or not. There are lots of thunderstorms in the area but it looks like our flight might work. What should you do? What would be the best weather charts to consult?
4. WE taxi out to take-off and find that one magnito is running rough. What now?
5. WE smell smoke in the cabin and suspect a fire could be imminent. What do we do?
6. WE have a passenger that is feeling very hot and reports not feeling so well. What do you do?
7. You have a parachutist friend who wants to jump out of your aircraft. Can you allow that?
8. You have another friend (strange friends..but I digress) that wants to drop human ashes out of your plane. Can you allow that? Considerations?
9. What do you do if you have not flown for over a year and you want to get your privileges back to carry passengers?
10. The FAA tower controller calls you up and asks you to call the tower when you land for a possible violation. He gives you the phone number. What do you do and what are your concerns?
11. A friend offers to pay you to take him or a parcel of some kind to a location several miles away. What are your considerations?
12. What is the "standard" to determine if you can "share" costs with your passenger?
13. You are starting your engine on a cold day and may have given the engine too many “prime” pumps. Fuel is dripping from the engine. When you crank

the engine is suddenly backfires and someone yells “your engine is on fire!!” What do you do?