

Common areas trouble areas for check rides

Commercial Pilots: The check ride emphasizes several areas on the oral. 1) Commercial pilot privileges and regs. 2) Aircraft performance, performance charts 3) weight and balance with weight shift problems 4) High altitude operations including aircraft performance on take off and landing, pressurization systems, oxygen delivery devices etc. 5) Aircraft systems. Your private pilot knowledge won't be sufficient. You have to know the aircraft systems well. **Highly recommend to read the entire ACS on the commercial certificate to become familiar with the ground and flight MINIMUM requirements.**

Weather: Review requirements in ACS. In short, the applicant has to be able to retrieve sufficient weather products and interpret them to put together a picture of the current and forecast weather to make a go/no-go decision. If you are using a briefing from an aviation APP, make sure you know where the legends are for interpreting the charting symbols.

- 1) basic concepts of how weather is created and how various air masses/ fronts produce weather what type of weather to expect. Again, a list of weather-related items you may be tested on is in the ACS.
- 2) become familiar with on board weather products: ADS-B IN (TIS-B, FIS-B) and XM weather and their limitations.
- 3) Radar- can you tell where thunderstorms are by radar? What does the radar tell you? What do the colors mean?
- 4) Low Level Wind shear- what is it, what produces it and what are the risks?
- 5) Any chart you pull up in the weather brief, be sure you know what all the symbols mean or where to look them up.

Cross country planning: The most common error is the applicant taking a "course" from garmin pilot or other app for their cross country and have no idea if it is a **True Course, Magnetic Course, Magnetic Heading, Compass Heading**. Then apply wind correction and magnetic deviation to the number not realizing the program has already done it. This can induce significant navigation errors that are hard to explain by the applicant. Know what your app is telling you and what the number means. Have some idea how to determine a True course from a VFR sectional and how to convert it to a magnetic heading and then a compass heading.

Aircraft performance: The Cross-country planning usually leads to discussion on aircraft performance.

- 1) Know how to use the performance charts. That means knowing how to calculate a pressure altitude any place the aircraft may be, including cruise.
- 2) Converting TAS into ground speed.
- 3) Applicants frequently struggle with the practical application of IAS vs TAS. What happens to IAS compared to TAS as you gain altitude?
- 4) What speeds do you use for take off and landing at high altitude density airports? How does high altitude density affect aircraft performance on take off and landing and why? What risk mitigation strategies do you have for these operations?
- 5) Relative effect of weight, barometric pressure, temperature, altitude on aircraft performance.
- 6) How to lean engine for maximum performance at high altitude take off and cruise.

- 7) How does surface type affect performance for take off and landing? GRASS, WET, DRY, Slope?
- 8) How does bank angle and aircraft load affect stall speed? Can your aircraft stall at 100 kts?
- 9) How does CG location affect aircraft performance?

Night operations: since applicants do not have much experience here, it becomes a grueling memorization effort. Consider every step you would make from preflight planning, preflight of aircraft, taxi, take off, enroute, finding airport and making safe landing. Consider the risks associated with each phase and how you would prepare and mitigate those risks. Consider pilot and aircraft specific factors. Consider how you would handle and control the airplane giving poor visual references and obstacle clearance especially with featureless terrain. What visual aids might you use both in the cockpit and in the airport environment?

Emergency descent- make sure you know the reasons to do an emergency descent.

- 1) Make sure to clear the area first,
- 2) perform memory items
- 3) execute as detailed in the Airplane flying handbook/ACS
- 4) aircraft configuration as recommended in the aircraft specific POH.
- 5) **Please read the ACS on emergency descent!** (hint: use 30-45 degrees of bank, power off!)

Engine Failure-

- 1) **Approach to landing** – this is not the same as an emergency descent. “ABCD”
Airspeed- best glide, Best place to land, Checklist- if time permits, Door- crack it open. Do not spend time and altitude choosing between corn and soybeans please. Land into wind and with flaps.
- 2) **Engine failure at high pitch/power (take off config)** – put nose down!
- 3) **Turn back to airport-** only if you have practiced it and you know your aircraft can do it. Fatality is 2X higher turning back to airport, especially if aircraft is not capable and pilot is not trained or proficient. It is called the “impossible turn” for a reason

On take off and landings:

- 1) Applicants get nervous and forget to apply x-wind correction for all take off and landings.
- 2) **Common mistake is coming in too fast.** Make sure you are on speed on final approach. (Every 5 kts makes you float 100-150 ft too far)
- 3) **Diving for the runway when high. This never works.**
- 4) **Go arounds are always a good idea if you don't like the approach or it becomes destabilized.**
- 5) Don't ad lib or do something new on a check ride.
- 6) Especially don't force the aircraft onto the runway with forward yoke/stick to make the short field landing. Go around.
- 7) All landings are graded on touch down attitude, which should be nose high on the mains.
- 8) Soft field landings with minimum sink/descent. **Soft field landings are much easier if you have a small amount of power in before the touch down.** It slows the rate of descent.

- 9) The most common error is coming in too fast which makes accuracy landing quite challenging and gives more opportunity for ballooning, floating, skipping, porpoising, going past your touch down point etc.
- 10) **Unless instructed otherwise, All landings are to a full stop and taxi back. If you are used to doing touch and goes, be wary.**
- 11) Overall, be sure you are on target approach speed no later than final approach. IF you are fast and high or really low and slow, it might be better to go around than wrestle the aircraft to the ground and leave the outcome to chance.

On Commercial 180 power off, work in flaps and drag devices ahead of time. Adding flaps at the last second destabilizes your approach and makes it a gamble. **If you are not doing a slip on final approach, you were too low and leaving your landing to chance.** Come in on target airspeed, *do not dive for runway and hope for the best*. Practice this maneuver 2 or 3 times right before on day of check ride. There are no go arounds (except for unexpected hazards) and only one chance allowed on this maneuver.

All ground reference maneuvers: I recommend flying UPWIND to fly past and scout your reference points, then do a 180 degree turn (counts as clearing turn) to enter on the downwind.

Steep turns: I recommend reading the ACS and the Airplane flying handbook. This should be an OUTSIDE reference maneuver. **Try practicing these with the instruments covered up to polish up your skills.** Also, make sure you are looking for traffic. Failure to scan for traffic during maneuvers is not within ACS standards. If you have synthetic vision, turn it off and look outside.

Rudder use: There have been many pilots that struggle with coordination, having to stare at the ball. Consequently, when pilots become task saturated, coordination evaporates. See the training syllabus I sent (page 48) on how to maintain coordination without staring at the ball or having to feel your bottom slide around in the seat. Coordinated use of rudders is required for all maneuvers in the ACS. A free training document with pictures is available upon request at fredspine@gmail.com