

Sept 14, 2019

Things to know about ACS:

- Required to test one skill element and one risk element from each section
- Can ask you to repeat a task "if the outcome is unclear"

Questions during oral portion

- Cross country (from KHWD to O22 and on to KLOL):
  - How did you determine the route?
  - How far is it?
  - What are the fuel requirements?
  - How much fuel does the POH say to use for startup and taxi?
  - What true airspeed did you plan?
  - Show me how you calculated TAS and fuel burn. What do these temperature columns mean?
  - What's your fuel minimum? Legal? Personal mins?
- Weight and balance.
  - How did you compute the weight and balance for today's trip?
  - Are the max takeoff weight and max landing weight different?
  - Can you carry a 280 lb box of widgets to Columbia? Where in plane?
  - What's the max weight could carry to Columbia and still have fuel reserve?
  - What does that do to CG?
  - Advantages and disadvantages of aft CG?
  - Does this plane have zero fuel limitations? What are they? (check out FAA weight and balance handbook)
- How do you get a weather briefing?
  - Do you have to get an "official" briefing before a flight?
  - What sources of weather are acceptable? Which ones are "official"?
  - What constitutes information being "available" prior to flight? Is looking in foreflight OK? Gave scenario of departing below takeoff min and failing to check awos, foreflight out of date.
  - In-cockpit radar displays-benefit and limitations? On board radar?
  - Look at surface analysis and prog chart (obs or forecast?)
  - what's depicted? what is an occluded front? What is the pattern of occluded fronts that occurs in the US? What kind of weather do they have?
  - What kind of weather do you expect with a fast moving cold front?
  - Why is there a low ceiling today at ACV? (advection fog).
  - What's this green stuff on the chart? What does the color denote? (probability of precip)
- Regs and such:
  - What documents are you required to have in the airplane?
  - What's an airworthiness directive?
  - special airworthiness bulletin?

- What are the types of special use airspace?
- What is the difference between MOA and an alert area? (alert area - must comply with regs. participants exempt in MOA -- eg speed, aerobatics. See AIM 3-4-5 and 3-4-6)
- What's this area around DC? Need special training? (yes)
- Commercial privileges and limitations
  - What does your commercial certificate allow you to do?
  - What docs do I have to carry to exercise privileges
  - What is common carriage ?
  - Guy has a cirrus he wants you to fly him to Chicago. Is that ok?
  - How would you handle flying that unfamiliar airplane?
  - Guy wants me to rent a plane and fly him. OK? (Commercial operator = operational control of the airplane)
- Inoperative equipment
  - Get there and flaps don't work. What to do?
  - If placard autopilot inop, need a maint entry? He seems to think it's an alteration. At a minimum it must be addressed in future required inspections.
- Safety
  - How do you define stabilized approach?
  - What might be the risks of taxiing around Columbia at night?
  - Bird strike while flying. Wing dented a few inches. No noticeable difference in performance. Flaps work. Do you have to report it? What requires an NTSB report?
  - What does PAVE stand for
  - What are the oxygen requirements?
  - What is stress? How does it impact you?
  - What is fatigue? How does it impact you?
  - What to do if see someone trying to jump the fence at khwd?
- Systems:
  - What kind of engine is in the plane
  - Do you have GPS on board?
  - What is RAIM?
  - What is WAAS?
  - How do you control the speed of the prop? What happens when I pull prop lever?
  - what force works against the oil pressure? (springs, counterweight)?
  - What if the lever/cable breaks? what if speeder spring fails?
  - How does the oil get from the governor to the prop hub?
  - How check prior to flight?
  - pressurized airplane? where does pressure come from? how is it controlled?
  - Can you start engine with external power? OK? Is there a checklist? What if you go to the plane and the battery is low volts - like 21 volts? What do you do? Is it ok just to start with external power and go about your way? (no...is the alternator bad?)

- Is there an ELT on board? What kind?
- How many days should you be prepared to survive if you crash? (see ACS - 48 - 72 hours)
- Is there a fire extinguisher aboard? What kind?
- Aerodynamics and maneuvers
  - What is  $v_x$ ?  $V_y$ ?
  - What happens if 10 knot headwind shears to 5 knot tailwind in departure at  $V_y$ ? Risk? what kind of stall? how do you recover from that stall?
  - What happens " " on short field approach? what kind of stall? how do you recover from that stall?
  - How handle engine fire? Emergency descent? Is there a checklist in the POH? What airspeed?
  - What if you have a partial power loss? How would you respond? What speed would you fly?
  - Should you deploy flaps? What are the risks (load factor limit lower for flap deploys)
  - How do you forward slip?
  - How do chandelles?
  - How do you do lazy 8's?
  - Showed 2 diagrams showing pitch and bank over time and asked which was chandelle and which was lazy 8.
  - What's the purpose of steep spiral? how many turns?
  - How do 8s on pylons? is it a constant radius turn around a pylon?
  - Load factor in steep turn. Approximate load factor in a 45 deg bank?
  - How does bank and load factor impact stall speed? What's the stall speed in clean configuration, power off, in a 45 degree bank?

#### Preflight:

- Pointed to prop governor and ask what it is?
- Asked how the alternator is driven
- How do you use cowl flaps?
- What's that clicking when you turn the prop?
- What's the mag switch connected to?
- Do you check the ground when you shutdown the mags?
- What are the airspeed and altitude limitations of the autopilot
- What are the limitations of the parachute?

#### Flight (total flight was 1.8 hobbs):

- Depart short field takeoff
- flight following optional
- Tell me when you will arrive at 1st checkpoint
- Cover hsi and 2 turns using compass

- slow flight, turns to heading
- Steep turns
- Pwr off, pwr on stalls with wings level. Accelerated stall (all to first indication of a stall)
- Chandelles
- Simulated engine fire, emergency descent
- 8s on pylons
- Partial loss of power (simulated prop overspeed), divert to Stockton (using GPS ok)
- Landing from partial power emergency at SCK
- Soft field takeoff
- Soft field landing
- Normal landing
- Power off 180 (between numbers and 3rd stripe)
- Go around
- Navigate back to HWD using GPS and use VNAV profile of autopilot
- Short field landing (on numbers at HWD)

#### Questions asked in flight

- What is the wind doing to you right now?
- What is confirmation bias?
- Where do you find ground effect? How close to ground?
- What happens if trim runs away? Do you check how to interrupt trim in run up ?

#### Feedback:

- Accelerated stall - do it faster. Do it at high enough speed you can get to 45 deg bank.
- Chandelle - better control of constant pitch, little slower, maybe even hear stall horn
- In class D airspace, supposed to stay on PAPI or VASI until necessary for safe landing (see FAR 91.129(e)(3) )
- Approaches tend to be shallow, and aiming point moves down runway as you get low
- Really likes Jacobsen flare
- Don't do 30 degree turns in pattern