Commerical SEL Checkride 6/26/2019 (9am-1 pm)

DPE: John Ewing

Airplane: N1004E

Oral:

1. Started with paperwork and airplane log books. I needed to update my IACRA since I flew some hours after my initial application. It would have been a lot easier filling out the IACRA form if my log book had a solo PIC time column. I need to make a column or get a new log book. I have my medical taped to the inside of the logbook and he said it was ok to laminate. Some DPE’s say you can’t laminate but he said it was ok.
2. The one thing he really dug into was the night landings qualification. Make sure you have way more than 10 landings and have completed them 1 hr after sunset. He said he sees a lot of students start at 30 mins after sunset and some of the landings don’t count. It was clear in my logbook because I did each landing to a full stop 1 hr after sunset.
3. Everything looked good with the logs and he had no questions for me. He did point out that the one of the weight and balance sheets did not have a superseded on them. The paperwork took about an hour.
4. He started off by asking me why we have a certificate not a license. This caught me off guard and he gave me some clues. The main point was a driver’s license expires but a pilot certificate does not. We also talked about how a pilot license can get revoked without going to court like a driver’s license. He asked me to provide some examples of how a pilot certificate could be revoked. I talked about a pilot who had multiple DUI’s or repeated infractions or fines.
5. What does a commercial license allow you to do? I said fly passengers or property for hire or compensation for hire. Or work for a commercial operator.
6. Then he gave me scenarios dealing with private, common carriage, and holding out. His example was me flying him on a regular basis in his plane up to tahoe b/c his medical was not current. I said yes this is private carriage. Then he said what if I rented a plane from west valley and I said no this is common carriage and west valley would need an operator cert. I studied so much knowing what 135, 121, 125, 119 etc but he did not even ask about them or the exceptions (119e).
7. He asked about how I obtained my weather briefing and we talked about 91.103. I did foreflight and made sure to put the tail number in and brief so there is a record of it. I also called the briefer.
8. He asked me what if the full gauges were fluctuating during the flight. I said that the fuel gauges needed to be accurate to read zero. The one little detail I missed was in 91.205 day VFR it states not only do you need fuel gauges but “fuel gauge indicating the quantity of fuel in each tank”. He said a lot of people overlook this detail
9. He asked me if I knew what expectation bias was or confirmation bias. We went over examples like if the controller told me to take off on 28 R but I expected to take off on 28L b/c that is what I always take off on. This is expectation bias.
10. Ask me details about each maneuver we would fly for the checkride. For slow flight how would I control the airspeed and altitude, make sure to be 0/+5 knots. No stall horn. Asked for me to walk through the difference of chandelle and lazy 8. What could you use a chandelle? Asked me to draw eights on pylons and explain the maneuver. We talked about spin recovery procedure plus what he wanted for stalls. He said a commercial pilot should not be stalling the airplane and would like a recovery the first sign of stall (stall horn). We went into detail about what happens if the wings are not level in a stall recovery. I said it could accelerate the roll and stall.
11. We talked about accelerated stalls, steep spiral, emergency decents. Asked me what scenarios would result in emergency descent. Asked why steep spirals are a useful maneuver. I talked about that you can lose a lot of altitude quickly. He asked me to explain a soft field take off and what the pluses and minus of ground effect. He asked about how to do a go around and mentioned that he has seen a lot of students pull all the flaps up instead of following the POH. Flaps 20, climb then flaps 10, > 65 flaps zero.
12. We talked about short field take off and landings. He asked me what a stabilized approach was and if I was 500 ft above the runway and not stabilized what would I do. I said go around.
13. He asked me the significance of maneuver speed. How does Cessna come up with that speed? The equation we used was square root of max gross weight times stall speed.
14. He asked me what the aux fuel pump in used for. I said starting the airplane and vapor suppression as well as operating the plane if engine driven fuel pump fails
15. He asked me about what I would do if the low voltage light came on. I went through the procedure from start to finish (check ALT CB, reset ALT switch, if the light is still on shut off Avionics #1, reduce electrical load, etc...) He was fine with that discussion. He gave me some real life experiences he had with low voltage
16. We talked about CO and he asked how long it stays in the blood. I knew it was long and guessed greater than 24 hrs and he said 48 hrs. He asked what kind of hypoxia what CO poisoning. I said hypemic. He asked if CO binds to cells quicker than O2 and I said yes and he said about 100 times more. Asked me what some symptoms of CO poisoning are? I said similar to hypoxia, tired, headache, etc. He asked what kind of hypoxia CO2 was, I said hypemic.
17. Asked if I can take my friends up in the plane after scuba diving. I said did they do a dive with decompression, he said yes so I said 24 hrs. He said can they use their portable electronic devices on the plane I said no. He asked would I allow my friends to sit in the plane while it was being fueled, I said no. He said some airports like Oakland have rules about this.
18. He asked a lot of scenario questions. If I sprained my right ankle walking to the plane and it was painful would I fly? I said no. He asked if the fuel flow went off scale while flying what would I do. I said I would return to the airport and tell maintenance.
19. We talked about personal minimums and also the difference between legal to fly and proficient. I was the one that brought up being proficient before I would take passengers.
20. He asked me about constant speed propellers and how they worked. I told him and then asked besides oil pressure what else pushes against the props. I said fly weights but he wanted more. He said there is also nitrogen that is used in the system which I forgot to mention
21. He asked me about the G1000 and how the attitude and altimeter worked in this airplane. Not too much detail but how the systems work.
22. The DPE is able to look up which questions you got wrong on the written and can ask you about them. I got one of the RMI questions wrong so he asked me about radials on an HSI.

Cross Country Planning to KDWA then KLOL:

We did not discuss much on the cross country. I went over my checkpoints to KDWA which has a magnetic course of 355. We talked about the difference between magnetic north and true north. He asked how I decide on our VFR cruising altitude and I said magnetic course. We talked about total fuel burn and time of flight to KDWA. I had the whole thing written out on the old school navigation logs.

He asked me about the type of airspace at KHWD and KOL and I went through the visibility and cloud clearances for E, G, B, and C. He asked me about the MOA’s near KLOL and asked me what kind of operations could happen in the MOA. I said IFR and VRF speed > 250 knots and aerobatics.

He gave me a scenario where I was about to cross the mountains near tahoe and a CWA was issued that talked about pilots observed severe T-storms over the Sierra. He said that I was flying packages for a company and they need to get to Reno that day. What would I do? He asked me if I knew what a CWA was and I said Center Weather Advisory. I told him that I would turn around and Land at Auburn since the approach was easier than Grass Valley and lower altitude. I then said I would call dispatch and tell them I will rent a car to drive the packages to Reno b/c I am not flying through or near T-storms. He liked my answer.

He gave me a weight and balance problem where he wanted his 225 lb friend to fly with us to Tahoe. I did the calculation and said it was possible but we could only take 27 gals of fuel which would be cutting it close. I told him we could not take his friend this time.

He asked me to describe the pressurized system in airplanes and then asked me about all the oxygen requirements. The normal 12500 14000 and 15000 and then he waited for more. I said that you need mask not cannulas above 18K and 10 minutes extra for passengers if flying 25K. I also mentioned the pilot oxygen mask requirements > 35 K and 41K.

He asked me about what survival gear I would bring for this flight over the mtns. I said GPS sat device, water, sleeping bag etc, he laughed when I kept listing off all the gear.

Basically, he went through the ACS page by page and picked an example or question from each area.

Flight Portion:

Preflight:

Before we started he told me everything that was going to happen on the flight which was nice to know. He chose steep spiral instead of steep turns and lazy eights instead of chandelle. I asked him why not both and he said he has a choice between the two. I wish he had me do chandelle b/c my lazy 8’s were not crisp. He also said that we are not going for perfection so if you think you did not do well keep a positive attitude and keep going. He will tell me if I fail. Additionally he said that if I did deviate from altitude during the maneuver and noticed it followed by a correction he was fine with that. If I consistently deviated from altitude or heading with no correction he would have failed me. Very fair!

Preflight was no big deal. He did want to see a full cup of fuel for each drain which took a lot of time. I did not cheat since he was right there. He asked about the ailerons and why did the plane yaw in a turn. I said the down aileron causes more lift and drag than the up which creates yaw. We briefly discussed that differential ailerons could minimize the yaw.

He asked me what the shimmer damper was. I told him and said it was hydraulic. He asked me about the OAT on top of the wing. He asked me why there was 10 fuel drains combined in the wings.

During part of the preflight after I checked the lights I got distracted and left the master on. He said “is your master still on?” Doh! The start up and taxi was non-eventful. I did not respond one time with my tail number on runway assignment, my mistake.

Flight:

I was told to flightplan for KDWA and we took off from KHWD on 28L and performed a Left 270. I decided to do a left 270 instead of right cross wind departure since you have more options for landing areas on the left 270 if engine failure occurs. My proposed time was 9 minutes to the first checkpoint which was COLLI intersection. The previous two days I flew the leg and made sure I was within the 3 minutes cut-off time. I added a minute for the left 270. We got to the checkpoint right at 10 mins.

Prior to taxi I gave my passenger brief then prior to take off I gave my take off briefing talking about what would happen if we lost the engine on the runway, under 1000 ft and above 1000 ft.

On take off we performed a short field T/O. I stated that if this was a real world short field I would use every bit of runway and was fine with taking off at 28L at A instead of 28L at Z. He stated that we cleared the obstacle and I lowered the nose then raised the flaps > 65 knots and climbed up to 4500 at 75 knots. I leaned the mixture above 3000 and made sure to put my new altitudes in the G1000 altitude window. If I forgot he reminded me. He also had me put the altitude in the G1000 window for the starting point of each maneuver. That was probably so he did not forget where we started.

Once we leveled off at 4500 feet and hit the first checkpoint he dimmed the PFD and MFD and had to perform turns with just the compass. One to 090 and then one to 360 which I undershoot at 030. We then went into the maneuvers. I did most maneuvers above 4500 feet with mixture leaned which he pointed out in the POH in the normal procedures. I did full rich on emergency descent and steep spiral

1. Slow flight- Cleared the area and did slow flight full flaps. The day before while practicing I noticed that this plane’s stall horn came on around 48-50 so I did the slow flight around 52knots. ACS allows +5 knots but he did not want to hear the horn. Left turn, right turn making sure to stay < standard rate.
2. Power off stall- He said pitch for landing speed, I did 65 knots and then entered a 20 °C turn to the right and he had me do a power-off stall. He only wanted it to the stall horn then recover. I leveled the wings, full power and then flaps up to 20 °C.
3. Power-on stall- I got to 55 knots, 20 °C turn, then full power and stalled to stall horn. Lowered the nose below stall horn speed and kept climbing
4. Accelerated stalls-I told him I trained at 95 knots then entered a 45 °C turn to the right and pulled up until stall horn then recovered by lowering the nose. He also had me slow down and do one at 80 knots and then asked what was different. I said the one at higher speed resulted in a steep angle of attack.
5. Lazy eights-I cleared the area and did my lazy eights using Diablo as my 90 point. They were ok but I rolled away from the 30 °C point too fast and the last part of the turn took forever to hit my heading. My altitude and speed were fine though. He said I did ok and said this maneuver is the most difficult to master
6. Steep Spiral- Did my three turns and cleared the engine each turn (90 knots). Once I was done with the maneuver he said the engine was on fire.
7. Emergency Engine Fire- I went to my checklist and pitched the nose down to 100 knots and went through the checklist items. He said the fire was out and wanted a emergency descent to 1500 feet. He told me then to descend further to estimated pivotal altitude for 8’s on pylons
8. 8’s on Pylons- Once I got to pivotal altitude 700-800 feet I stated that this area over the delta had good landing options. Prior to the flight he asked me about where I would pick my pivotal altitude. I said I could go down to 500 feet if I was not over a congested area. I started picking my spots and he said what about those two trees. He obviously has done this before b/c they were the perfect distance apart. I entered on the downwind and performed the maneuver. Once the maneuver was over we climbed back to 2500 feet
9. Engine Roughness Diversion- I thought he was going to give me a normal diversion where I could give the runways, fuel, time, etc but instead he said you have engine roughness what are you going to do. He pulled the power back to 2000 rpm and I hit the NRST key and CCR was the closest. Direct to KCCR and turned to the heading. As we were approaching KCCR he kept pulling the power back so I pitched for max glide (68 knots). As we got the weather and go closer he said I want a short field landing on the numbers. He did not allow me to hit the throttle which by now was down to 1300 RPM. I did the landing and he said simulated breaking then he said on the roll perform a soft field take off which I also did. When we were flying back to KHWD I thought a messed up by not giving the fuel, time, etc but he did not say anything about it. If I had to do it again I would provide that information. But during the simulated engine roughness I forgot to provide that information.
10. Power off 180- The winds at KCCR were 250 12 Gusting 17-25 and we were landing 19R. It was bumpy and I knew the P-off 180 would be hard. First time around I was high from the gusts of wind and he said go around. Second time I waited longer to turn base and was on the mark until we came over the water where we caught a thermal and put me way high. We went around and departed. He said due to the conditions were would perform the 180 and a normal landing at HWD.
11. Normal Landing- He said normal landing and I asked where the runway would start and he said the 1000 foot marker which was the aiming point. Landing was good.
12. Power off 180- I practiced these on 28L at KHWD since the pattern is 650 ft and it was also windy at KHWD. I was a little high then dropped the flaps and the wind picked up and I almost did not make it. The only thing that saved me was dropping to ground effect and gliding then holding the airplane off the runway and I touched down in the 1st 50 feet. Not planned but he said done.

Conclusions:

John was very fair and if you knew the material on the oral he did not dig deeper. I was well prepared for the oral. I used about 200 flash cards to memorize the systems and regulations. You have to know some much material but they only ask you a few things. I studied too much granularity on the G1000 systems and it seems like these older DPE’s do not want to touch the system but I still needed to know it.

For the flight test I flew seven days in a row b/c I had a hard time nailing the power-off 180 and short field. I never felt like I would nail the test which was different from the IFR. Once the flight started I did not feel surprised by anything and all the practiced kicked in. One thing that really helped me was when I received the cross country plan from the examiner I practiced flying the first 3-4 checkpoints making sure I was on time to each check point. Practicing all the different types of landing at KHWD was also helpful since the pattern for 28L is 650 ft. The picture of the runway is different and takes some time to get used to. Overall the preparation for this rating felt harder than my IFR. Maybe because it was stressful to find the time to study and to fly while balancing work and life.