1 (Refer to FAA-CT-8080-2G, Figure 21.) What airport is located approximately 47 (degrees) 40 (minutes) N latitude and 101 (degrees) 26 (minutes) W longitude?

A. Mercer County Regional Airport. [This is definitely not even close. This airport is in the low minutes of 47 degrees North.]

B. Semshenko Airport. [Ah yes, this is a close private airport. You can tell it is private because of the Pvt. Careful measurements will let you know that this is not the airport]

C. Garrison Airport. [Let's make this simple. Ladder sounds kind of like latitude. You climb the ladder going north. (Keep in mind it is north only if you are in the Northern Hemisphere) For minutes, just think of them as tick marks. There is a box with 30 tick marks in it, a line, and then another 30 tick marks. Total you get 60 minutes. For longitude, also called meridians, think of the Prime Meridians running through Greenwich, England. Why is this useful? To figure out if the coordinates of the potential job site are in airspace which requires a COA. I use coordinates all the time when I'm working with my clients to figure out if they need a COA or not. Can your attorney do that?]

UA.V.B.K6a Sources for airport data: Aeronautical charts.
2 (Refer to FAA-CT-8080-2G, Figure 26.) What does the line of latitude at area 4 measure?

A. The degrees of latitude east and west of the Prime Meridian. [This is partially true. It is correct to say degrees of latitude but incorrect to say west. Latitude goes north & south like you are climbing a latter.]

B. The degrees of latitude north and south from the equator. [Like you are climbing a ladder going up or down. Just remember which hemisphere you are in. 99% of you guys aren't going below the equator so it will be north most of the time.]

C. The degrees of latitude east and west of the line that passes through Greenwich, England. [Just answer A repackaged.]

UA.V.B.K6a Sources for airport data: Aeronautical charts.
3 (Refer to FAA-CT-8080-2G, Figure 23, area 3.) What is the floor of the Savannah Class C airspace at the shelf area (outer circle)?

A. 1,300 feet AGL. [It is NEVER AGL. There is a lot that can be said here, but if you want to know more, study out barometers and the different types of altitude.]

B. 1,300 feet MSL. [Remember the two zeros are chopped off. SFC means surface. Why is this important? Because you might need to do a job under the Class C shelf. If you don't know this right off the top of your head, you are leaving money on the table. Remember that Class C operations require a waiver (COA). You need to be able to say quickly, "Yes, we can do that job" or "No, we can't do that job and I'll have to file a COA to fly in Class C airspace." If you need help filing a COA in Class C, contact me.]

C. 1,700 feet MSL.

UA.II.A.K1b General airspace: Class C controlled airspace.
4 (Refer to FAA-CT-8080-2G, Figure 59, area 2.) The chart shows a gray line with "VR1667, VR1617, VR1638, and VR1668." Could this area present a hazard to the operations of a small UA?

A. No, all operations will be above 400 feet.

B. Yes, this is a Military Training Route from 1,500 feet AGL. It is extremely important to know this so you can expect low-flying military helicopters flying this route. Some of which may be at 400ft or below. Here is what the AIM says: "(a) MTRs with no segment above 1,500 feet AGL must be identified by four number characters; e.g., IR1206, VR1207. (b) MTRs that include one or more segments above 1,500 feet AGL must be identified by three number characters; e.g., IR206, VR207." What does this mean? They can ALWAYS be flying in your airspace.

C. Yes, the defined route provides traffic separation to manned aircraft.

UA.II.A.K2 Special use within airspace. (Prohibited, restricted, warning, military operations, alert, and controlled firing.)
5 According to 14 CFR part 107 the remote pilot in command (PIC) of a small unmanned aircraft planning to operate within Class C airspace

A. must use a visual observer. [Nope. Only Part 107 FPV racers or 333 operators need a VO.]
B. is required to file a flight plan. [You don't have to be on a flight plan to fly in Class C.]
C. is required to receive ATC authorization. [Bingo. Why? Because the FAA ATC wants to make sure you can fly in certain locations. Pro tip: Look at the runway of the Class C airport in Figure 23. The runways are North, South, East, and West. If you are flying in the "doughnut hole," then you better know where the landing and departing traffic will be flying. Keep in mind that for some airports, especially at coastal airports, almost rarely use their northerly or southerly runways because the wind is almost always blowing east or west. You might be able to get a COA for those north or south areas of the airport easier. As always, if you need help getting one, contact me.]

UA.II.A.K1b General airspace: Class C controlled airspace.
6 (Refer to FAA-CT-8080-2G, Figure 21.) You have been hired by a farmer to use your small UA to inspect his crops. The area that you are to survey is in the Devil’s Lake West MOA, east of area 2. How would you find out if the MOA is active?

A. Refer to the legend for special use airspace phone number. [Ok. This answer is wrong. You won't be getting any telephone numbers here. You'll get VHF frequencies on the side of the map where the MOAs are listed. How do you find the MOAs on the side? This is annoying because most of you guys are using some type of digital map. This is how you find it on Skyvector. You make sure the sectional chart at the top right is clicked and then you move over all the way to the left and you'll see a list of all the MOAs. This]
MOA is from 4000-17,999. For practice, let’s pretend that it goes all the way to the ground. We need to figure out if it is active. The 135.25 frequency won’t help because you’ll almost never get ahold of anyone with your handheld. This is how to figure out if it is active or not. You can either (1) Check to see if there is an active NOTAM on https://www.notams.faa.gov/dinsQueryWeb/ which has its own MOA tab, (2) check on https://pilotweb.nas.faa.gov/PilotWeb/ (3) check on DUATS, (4) call up 1-800-WX-BRIEF, or (5) call via phone the ARTCC over the area which would be Minneapolis Center. Here is the FAA web page to find the ARTCC phone numbers. I personally would use DUATS because it records that you requested the information which is handy if things go bad. You can’t prove if you read it, but you can prove you at least requested it. See my article on 5 ways to prove you did a pre-flight briefing. If you are interested in setting up flight programs and want a more comprehensive set of guidelines that includes this information and more, contact me. I work with other highly skilled commercial pilots to develop flight operations and procedures manuals that are integrated with the exemptions and waivers.

B. This information is available in the Small UAS database. [What? I don’t know what this means. There is no such thing.]

C. In the Military Operations Directory. [No such thing.]

UA.II.A.K2 Special use within airspace. (Prohibited, restricted, warning, military operations, alert, and controlled firing.)
7 (Refer to FAA-CT-8080-2G, Figure 20, area 3.) How would a remote PIC "CHECK NOTAMS" as noted in the CAUTION box regarding the unmarked balloon?

A. By utilizing the B4UFLY mobile application. [That would be a nice feature but I don't know how much money the FAA will put into this app. That app is more like an airspace for dummies app. Airmap also dumbs things down and says you can't fly in a lot of places you can. Learn how to read charts so you know where you can legally fly to make more money.]

B. By contacting the FAA district office. [Nope. However, you should reach out to meet with these guys sometime. Let them know you are trying to be compliant and professional. Better to "set the stage" with that than if they come after you and remember you as the guy who did _________.]

C. By obtaining a briefing via an online source such as: 1800WXBrief.com. [You could do this. I suggest reading my article on 5 Ways to Prove You Did a Pre-Flight Briefing.]

UA.II.B.K5 The NOTAM system including how to obtain an established NOTAM through Flight Service.
8 To ensure that the unmanned aircraft center of gravity (CG) limits are not exceeded, follow the aircraft loading instructions specified in the

A. Pilot's Operating Handbook or UAS Flight Manual. [I don’t know of any drone manufacturers who have created a manual which allows you to calculate the CG. Manned aviation manuals have ways you can calculate so you don’t exceed CG limits. I think some of the reasons why the drone manuals don’t have them are because (1) the manufacturers are "toy" manufacturers who know little about aerodynamics, (2) they don’t want to waste money on something that isn’t required, and (3) the drones they sell can’t carry any payload so the CG is static.]

B. Aeronautical Information Manual (AIM). [Great for general aviation info but bad for specific aircraft info.]

C. Aircraft Weight and Balance Handbook. [This looks like a great answer but it isn’t. This handbook is helpful for studying for the test but won’t tell you anything about your specific aircraft.]

UA.IV.A.K1b General loading and performance: Balance, stability, and center of gravity.

9 When operating an unmanned airplane, the remote pilot should consider that the load factor on the wings may be increased anytime

A. the CG is shifted rearward to the aft CG limit. [This wouldn’t increase load factor. If the airplane uses an elevator for pitch, this would actually DECREASE load factor.]

B. the airplane is subjected to maneuvers other than straight and level flight. [Here is a helpful video explaining this. Here is another helpful link. See next question for more discussion.]

C. the gross weight is reduced. [Gross weight reduction would DECREASE load factor.]

UA.IV.A.K2. The importance and use of performance data to predict the effect on the aircraft’s performance of an sUAS.
10 A stall occurs when the smooth airflow over the unmanned airplane’s wing is disrupted, and the lift degenerates rapidly. This is caused when the wing

A. exceeds the maximum speed. [You won't stall at this speed. Your wings will pop off because of drag.]

B. exceeds maximum allowable operating weight. [This isn’t true. You can fly somewhat overweight all day long (not legally), but it isn't going to cause your wings to stall or pop off. We care about flying overweight in turbulent air or when doing abrupt maneuvers that can over stress the aircraft and break it. This is why we have maneuvering speed in manned aircraft so we know what speed to keep our aircraft below so we don't break it in the event of a full control deflection because the aircraft will stall before it exceeds its category limits for what the aircraft was certificated for. There are no aircraft category G limits like manned aircraft. All Part 107 aircraft are not required to have an airworthiness certificate like manned aircraft. So flying a drone “overweight” isn’t the same as flying a certificated manned aircraft over the weight which might exceed category limits in a full control deflection.]

C. exceeds its critical angle of attack. [You aren’t going to be flying if you hit this angle no matter how fast you are going. Here is a great example of a Sukhoi Su-35 Russian jet doing the Cobra maneuver which exceeds its critical angle of attack.]
If an unmanned airplane weighs 33 pounds, what approximate weight would the airplane structure be required to support during a 30° banked turn while maintaining altitude?

\[
\text{Explanation: In a turn of 30 degrees of bank and while maintaining level flight (no altitude loss because you slightly pitched up), you will have a 1.154 load factor. This means that in this turn you will be feeling like you are pulling 1.154 G's. 33 pounds x 1.154 = 38.082 pounds.}
\]

A. 34 pounds.
B. 47 pounds.
C. 38 pounds.

UA.IV.A.K2. The importance and use of performance data to predict the effect on the aircraft’s performance of an sUAS.
12 Which is true regarding the presence of alcohol within the human body?

A. A small amount of alcohol increases vision acuity. [No, you may think that but it isn’t true.]
B. Consuming an equal amount of water will increase the destruction of alcohol and alleviate a hangover. [No, it just means you are going to be a drunk who has to go to the bathroom.]
C. Judgment and decision-making abilities can be adversely affected by even small amounts of alcohol. [Yes, being drunk can result in all sorts of poor life choices such as getting involved in Pokemon.]

UA.V.E.K2 Drugs and alcohol use.

13 When using a small UA in a commercial operation, who is responsible for briefing the participants about emergency procedures?

A. The FAA inspector-in-charge. [Um. No. The FAA inspector is the person who investigates your goof up.]
B. The lead visual observer. [Nope. But this person is great for doing the “coffee & doughnuts” briefing.]
C. The remote PIC. [Bingo! Being the pilot in command means you are responsible. Period. For everything. For example, if you don’t properly brief your VO and a FAA inspector ramp checks and the VO doesn’t know what is going on, you get in trouble. It’s like being at the bottom of a gutter, all the garbage will flow your way.]

UA.V.C.K1 Emergency planning and communication.
14 To avoid a possible collision with a manned airplane, you estimate that your small UA climbed to an altitude greater than 600 feet AGL. To whom must you report the deviation?

A. Air Traffic Control. [If you are flying without an airspace waiver, 600ft isn’t even in controlled airspace so you wouldn’t be contacting ATC. It might be wise to just quickly mention on the CTAF where you are if you were flying near a Class G airport and you had to do an emergency deviation up to 600ft.]

B. The National Transportation Safety Board. [See What Do I Do After a Drone Crash?]

C. Upon request of the Federal Aviation Administration. [See What Do I Do After a Drone Crash?]

UA.V.C.K1 Emergency planning and communication.
15 (Refer to FAA-CT-8080-2G, Figure 26, area 2.) While monitoring the Cooperstown CTAF you hear an aircraft announce that they are midfield left downwind to RWY 13. Where would the aircraft be relative to the runway?

A. The aircraft is East. (Runway 13 has a magnetic heading of 130. Keep in mind that our VFR sectionals are in true, not magnetic, but VORs and runway headings are magnetic. You know which way the airplane took off by looking at the runway orientation. The runways on the map tend to be pretty close to what they are in real life. The airport pattern in the U.S. goes to the left (because the captain or pilot tends to fly on that side and has a better view of the runway and it is the law). The exceptions to this are if ATC at a tower, visual markings or lights, AFD, or the sectional with an RP symbol next to the airport say otherwise. There is no RP on Cooperstown so it is left. So if airplanes are going left, you should fly on the right hand pattern side right? WRONG! Helicopters are required...
by law to avoid the flow of fixed-wing aircraft and tend to be lower.]

B. The aircraft is South.
C. The aircraft is West.

UA.V.A.K3 Recommended traffic advisory procedures. (such as: self-announcing of position and intentions by manned aviation operations and activities.)
16 Under what condition should the operator of a small UA establish scheduled maintenance protocol?

A. When the manufacturer does not provide a maintenance schedule. [Yes, because you should know what the mean time between failures is or have an idea on what are the typical problems certain drones encounter so you can PREVENT crashes. It is also good for your bottom line to have aircraft that work when you want to go fly them rather than having crews drive back and forth to the office to pick up more aircraft.]
B. UAS does not need a required maintenance schedule. [I can hear it now from some of the droners “Maintenance…..We don’t need no stinkin maintenance.”]
C. When the FAA requires you to, following an accident. [It is cheaper to do maintenance on the front end rather than on the pieces on the backend.]

UA.V.F.K1 Basic maintenance.

17 According to 14 CFR part 107, the responsibility to inspect the small UAS to ensure it is in a safe operating condition rests with the

A. remote pilot-in-command. [107.19 says, “(b) The remote pilot in command is directly responsible for and is the final authority as to the operation of the small unmanned aircraft system. (c) The remote pilot in command must ensure that the small unmanned aircraft will pose no undue hazard to other people, other aircraft, or other property in the event of a loss of control of the aircraft for any reason” How are you going to do that without doing an inspection on the aircraft and being familiar with it? § 107.49 says, “(c) Ensure that all control links between ground control station and the small unmanned aircraft are working properly; (d) If the small unmanned aircraft is powered, ensure that there is enough available power for the small unmanned aircraft system to operate for the intended operational time; and (e) Ensure that any object attached or carried by the small unmanned aircraft is secure and does not adversely affect the flight characteristics or controllability of the aircraft.”]
B. visual observer. [No responsibility here but it would be smart to have the VO checking things also.]
C. owner of the small UAS. [Smart but not required.]

UA.V.F.K2 Preflight inspection.
18 Identify the hazardous attitude or characteristic a remote pilot displays while taking risks in order to impress others?

A. Impulsivity.  [This is doing something quickly without thinking it out.]
B. Invulnerability.  [This is doing something dumb but you think an accident won’t happen to you. Please see the many dumb people on Youtube flying their aircraft over streets in urban areas.]
C. Macho.  [You act macho to impress others.]

UA.V.D.K4 Hazardous attitudes

19 You are a remote pilot for a co-op energy service provider. You are to use your UA to inspect power lines in a remote area 15 hours away from your home office. After the drive, fatigue impacts your abilities to complete your assignment on time. Fatigue can be recognized

A. easily by an experienced pilot.  [An experienced pilot should recognize that fatigue can creep up on them and they shouldn’t trust themselves.]
B. as being in an impaired state.  [You should give your body proper rest so as to function optimally. Commercial pilots have rest requirements for a reason. You should also.]
C. by an ability to overcome sleep deprivation.  [This isn’t fatigue. This is Redbull.]

UA.V.E.K5 Stress and fatigue.
20 Safety is an important element for a remote pilot to consider prior to operating an unmanned aircraft system. To prevent the final "link" in the accident chain, a remote pilot must consider which methodology?

A. Crew Resource Management. [“Crew resource management (CRM). The application of team management concepts in the flight deck environment. It was initially known as cockpit resource management, but as CRM programs evolved to include cabin crews, maintenance personnel, and others, the phrase “crew resource management” was adopted. This includes single pilots, as in most general aviation aircraft. Pilots of small aircraft, as well as crews of larger aircraft, must make effective use of all available resources; human resources, hardware, and information. A current definition includes all groups routinely working with the flight crew who are involved in decisions required to operate a flight safely. These groups include, but are not limited to pilots, dispatchers, cabin crewmembers, maintenance personnel, and air traffic controllers. CRM is one way of addressing the challenge of optimizing the human/machine interface and accompanying interpersonal activities.”]  

B. Safety Management System. [“SMS is the formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk.”]

C. Risk Management. [This is the part of the decision making process which relies on situational awareness, problem recognition, and good judgment to reduce risks associated with each flight.]

UA.V.D.K1 Aeronautical Decision Making (ADM).
21 When adapting crew resource management (CRM) concepts to the operation of a small UA, CRM must be integrated into

A. the flight portion only. [This is wrong because the pre-flight portion and post flight portion need attention also for safety. Who checked on TFRs, weather, etc? Who charged the batteries? Who is going to charge the batteries and log the before and after voltages?]

B. all phases of the operation. [“All groups routinely working with the flight crew who are involved in decisions required to operate a flight safely. These groups include, but are not limited to pilots, dispatchers, cabin crewmembers, maintenance personnel, and air traffic controllers.”]

C. the communications only. [Nope. Into everything when people are involved.]

UA.V.D.K2 Crew Resource Management (CRM).

22 You have been hired as a remote pilot by a local TV news station to film breaking news with a small UA. You expressed a safety concern and the station manager has instructed you to “fly first, ask questions later.” What type of hazardous attitude does this attitude represent?

A. Machismo. [It isn’t this one because you aren’t trying to prove yourself to be awesome.]

B. Invulnerability. [Close. But it isn’t right. Invulnerability recognizes that the accident CAN happen, “but not to me.” Here there is NO recognition of the possibility of an accident being possible.]

C. Impulsivity. [From PHAK, “This is the attitude of people who frequently feel the need to do something, anything, immediately. They do not stop to think about what they are about to do, they do not select the best alternative, and they do the first thing that comes to mind.”]

UA.V.D.K4 Hazardous attitudes.
23 A local TV station has hired a remote pilot to operate their small UA to cover breaking news stories. The remote pilot has had multiple near misses with obstacles on the ground and two small UAS accidents. What would be a solution for the news station to improve their operating safety culture?

A. The news station should implement a policy of no more than five crashes/incidents within 6 months. [But why 5? 5 crashes a year? A month? This is just a standard with no data behind it.]

B. The news station does not need to make any changes; there are times that an accident is unavoidable. [There is not enough information to know they do not need to make any changes. Maybe they have identified all the risks and attempted to mitigate them. Generally, you could and should be trying to do something to increase safety.]

C. The news station should recognize hazardous attitudes and situations and develop standard operating procedures that emphasize safety. [The hazardous attitudes would be an easy fix with the crew to help identify any hazards in the group. The SOP helps prevent pilots from forgetting things. SOPs are great at managing risk. What gets measured gets managed. There needs to be data gathered after the flights to find out how to best optimize the SOPs. Over time, the SOPs will be improved by identifying risks, implementing mitigations in the SOPs to counter those risks, and measuring the effectiveness of those mitigations. SOPs aren’t stagnant.]

UA.V.D.K1 Aeronautical Decision Making (ADM).
24 (Refer to FAA-CT-8080-2G, Figure 22, area 2.) At Coeur D'Alene which frequency should be used as a Common Traffic Advisory Frequency (CTAF) to monitor airport traffic?

A. 122.05 MHz. [This is the frequency to contact Boise Flight Service on.]
B. 135.075 MHz. [This is the AWOS, not the CTAF. You can check out the airport weather on this frequency. Would also be great to find out what the surface winds are blowing at that location.]
C. 122.8 MHz. [This is the CTAF.]

UA.V.B.K6a Sources for airport data: Aeronautical charts.
25 (Refer to FAA-CT-8080-2G, Figure 26, area 4.) You have been hired to inspect the tower under construction at 46.9N and 98.6W, near Jamestown Regional (JMS). What must you receive prior to flying your unmanned aircraft in this area?

A. Authorization from the military. [This isn’t military airspace.]

B. Authorization from ATC. [This is Class E airspace going to the surface. The magenta dashes indicate this. The magenta halo indicates Class E airspace starts at 700ft. To convert to decimal points, you divide 60 (The number of tick marks per degree. Remember there are 30 tic marks per quadrant but two quadrants make up a degree.) by 10 and you’ll get 6 tick marks per .1. According to Part 107, you’ll need authorization to operate within Class E at the surface airspace.]

C. Authorization from the National Park Service. [There is no national park here.]

UA.V.B.K6a Sources for airport data: Aeronautical charts.
26 (Refer to FAA-CT-8080-2G, Figure 20, area 3.) With ATC authorization, you are operating your small unmanned aircraft approximately 4 SM southeast of Elizabeth City Regional Airport (ECG). What hazard is indicated to be in that area?

A. High density military operations in the vicinity.
B. Unmarked balloon on a cable up to 3,008 feet AGL. [It says MSL right on the sectional. Even if it didn’t, it would have to be MSL because pilots flying don’t have an accurate way of determining AGL and are using their aneroid barometers which is trying to put out an indicated altitude ball parkish to MSL.]
C. Unmarked balloon on a cable up to 3,008 feet MSL. [Keep in mind that if you are flying 4SM from the airport, you are within 4 nautical miles from the airport. Class D airports generally have a radius of 4NM. You would need an airspace waiver to operate in this area. Contact me if you need one! 😊]

UA.V.B.K6a Sources for airport data: Aeronautical charts.
27 The most comprehensive information on a given airport is provided by

A. the Chart Supplements U.S. (formerly Airport Facility Directory). [This will tell you all sorts of things. Ever wonder how you get the phone number of the airport manager to make phone calls if you are flying recreationally within 5nm of an airport? This is how!]
B. Notices to Airmen (NOTAMS). [Um no. These will tell you SOME things about the airport.]
C. Terminal Area Chart (TAC). [This map is a 2x zoomed in version of the sectional.]

UA.V.B.K6b Sources for airport data: Chart Supplements U.S. (formerly Airport/facility directory)

28 According to 14 CFR part 107, who is responsible for determining the performance of a small unmanned aircraft?

A. Remote pilot-in-command. [See 107.19. Learn the short version of this regulation. “If anything goes wrong, it is most likely the PIC’s fault.” You shouldn’t let anyone force you into flying somewhere or doing something you feel is unsafe. You are getting the whacking if anything goes wrong, not them.].
B. Manufacturer.
C. Owner or operator.

UA.I.B.K20 Preflight familiarization, inspection, and actions for aircraft operations.

29 Which technique should a remote pilot use to scan for traffic? A remote pilot should

A. systematically focus on different segments of the sky for short intervals. [From the AIM 8−1−6. (c), “Because the eyes can focus only on this narrow viewing area, effective scanning is accomplished with a series of short, regularly spaced eye movements that bring successive areas of the sky into the central visual field. Each movement should not exceed 10 degrees, and each area should be observed for at least 1 second to enable detection. Although horizontal back-and-forth eye movements seem preferred by most pilots, each pilot should develop a scanning pattern that is most comfortable and then adhere to it to assure optimum scanning.”]
B. concentrate on relative movement detected in the peripheral vision area. [Bad idea. From AC 90-48D 4.2.5, “It is essential to remember, however, that if another aircraft appears to have no relative motion, it is likely to be on a collision course with you. If the other aircraft shows no lateral or vertical motion, but is increasing in size, take immediate evasive action.”]
C. continuously scan the sky from right to left. [What about up and down also!? Additionally, you need some time to focus on a particular segment of sky.]

I’m guessing the correct one should be UA.V.E.K6 Factors affecting vision.
30 Under what condition would a small UA not have to be registered before it is operated in the United States?

A. When the aircraft weighs less than .55 pounds on takeoff, including everything that is on-board or attached to the aircraft. [What can be helpful to determine .55 pounds is approximately two sticks of butter. No seriously. The FAA said two sticks of butter. I’m not making this up. I can see next time I am at Toys “R” Us. Me. “Excuse me, but do you have two sticks of butter?” Clerk: “Butter?” Me: “Yes, I need two of them because I need to see if the drone needs to be registered.” Also, keep in mind that the Part 48 registry is being challenged in the D.C. Circuit Court of Appeals by John Taylor. I’m helping him with that case. We believe the D.C. Circuit Court will find the registry to have been illegally created and unenforceable. This all could change by this winter, so keep an eye on this case.]
B. When the aircraft has a takeoff weight that is more than .55 pounds, but less than 55 pounds, not including fuel and necessary attachments. [This is weight range for Part 48. Remember that Part 47 is for the 55lbs and heavier drones!]
C. All small UAS need to be registered regardless of the weight of the aircraft before, during, or after the flight. [Nope.]

UA.I.B.K1 Registration requirements for small unmanned aircraft systems.

31 According to 14 CFR part 48, when must a person register a small UA with the Federal Aviation Administration?

A. All civilian small UAS weighing greater than .55 pounds must be registered regardless of its intended use. [See 48.1 and 48.15. This is the reason why the registry will be found illegal because it went after model aircraft ALSO which are protected because of Section 336. See my article on why the registry is illegal. Until it gets struck down, this is the law we have to know to pass the test! 😊]
B. When the small UA is used for any purpose other than as a model aircraft.
C. Only when the operator will be paid for commercial services.

UA.I.B.K1 Registration requirements for small unmanned aircraft systems.
32 According to 14 CFR part 48, when would a small UA owner not be permitted to register it?

A. The owner is less than 13 years of age. 14 CFR 48.25 says, “(b) A small unmanned aircraft must be registered by its owner using the legal name of its owner, unless the owner is less than 13 years of age. If the owner is less than 13 years of age, then the small unmanned aircraft must be registered by a person who is at least 13 years of age.” Keep in mind that they are trying to make you know Part 48. There are other answers as to why a person could not register via Part 47 such as being a foreign citizen.

B. All persons must register their small UA.

C. If the owner does not have a valid United States driver’s license. [Part 48 doesn’t require this and Part 47 doesn’t require it either.]

UA.I.B.K1 Registration requirements for small unmanned aircraft systems.

33 According to 14 CFR part 107, how may a remote pilot operate an unmanned aircraft in class C airspace?

A. The remote pilot must have prior authorization from the Air Traffic Control (ATC) facility having jurisdiction over that airspace. [You are going to have to have an airspace waiver. §107.41 says, “No person may operate a small unmanned aircraft in Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from Air Traffic Control (ATC).” The FAA is handling those authorizations via a waiver process currently. Let me know if you need one! 😊]

B. The remote pilot must monitor the Air Traffic Control (ATC) frequency from launch to recovery. [This is the smart thing to do and maybe also required via the waiver, but it isn’t required per the regulations.]

C. The remote pilot must contact the Air Traffic Control (ATC) facility after launching the unmanned aircraft. [Um. The idea would be to call before launching, not after.]

UA.I.B.K16 Prior authorization required for operation in certain airspace.
34 According to 14 CFR part 107, what is required to operate a small UA within 30 minutes after official sunset?

A. Use of anti-collision lights. [§107.29(b) says, (b) No person may operate a small unmanned aircraft system during periods of civil twilight unless the small unmanned aircraft has lighted anti-collision lighting visible for at least 3 statute miles. The remote pilot in command may reduce the intensity of the anti-collision lighting if he or she determines that, because of operating conditions, it would be in the interest of safety to do so. (c) For purposes of paragraph (b) of this section, civil twilight refers to the following: (1) Except for Alaska, a period of time that begins 30 minutes before official sunrise and ends at official sunrise; (2) Except for Alaska, a period of time that begins at official sunset and ends 30 minutes after official sunset]."

B. Must be operated in a rural area.

C. Use of a transponder.

UA.I.B.K9 Daylight operation.

35 You have received an outlook briefing from flight service through 1800wxbrief.com. The briefing indicates you can expect a low-level temperature inversion with high relative humidity. What weather conditions would you expect?

A. Smooth air, poor visibility, fog, haze, or low clouds. [A temperature inversion means some warm air on top of some cold air. The cold air underneath on the ground, along with a high relative humidity, means you are expecting fog in the cooler area. You should also check the METARS for the airports in the area as you will most likely have a temperature/dewpoint spread that is low. Example 12/10. The air will be smooth because there is little convection.]

B. Light wind shear, poor visibility, haze, and light rain. [The cold air underneath means you are not going to have much convection so light wind shear is a wrong answer.]

C. Turbulent air, poor visibility, fog, low stratus type clouds, and showery precipitation. [Once again, you are going to have very little convection because of the cold air.]

UA.III.B.K1i Weather theory: Fog.
36 What effect does high density altitude have on the efficiency of a UA propeller?

A. Propeller efficiency is increased.

B. Propeller efficiency is decreased. [A high density altitude decreases the power output of a normal aspirated engine because there are less air molecules in the combustion. Most drones are electric so I’m taking this out of the equation. There are fewer air molecules flying over the wing (the propeller) which results in a decrease in lift.]

C. Density altitude does not affect propeller efficiency.

UA.III.B.K1a Weather theory: Density altitude.

37 What are characteristics of a moist, unstable air mass?

A. Turbulence and showery precipitation. [Cumuliform clouds, turbulent air, good visibility, and showery precipitation are all characteristics of unstable air.]

B. Poor visibility and smooth air. [Poor visibility and smooth air are characteristics of stable air.]

C. Haze and smoke. [Haze and smoke the causes of the poor visibility in stable air!]

UA.III.B.K1d Weather theory: Air masses and fronts.

38 What are the characteristics of stable air?

A. Good visibility and steady precipitation. [It would be poor visibility].

B. Poor visibility and steady precipitation. [Yes! stratiform clouds, smooth air, poor visibility in haze and smoke, and continuous precipitation.]

C. Poor visibility and intermittent precipitation. [No intermittentent is more like unstable air that creates cumulonimbus clouds]

UA.III.B.K1c Weather theory: Atmospheric stability, pressure, and temperature.
39 (Refer to FAA-CT-8080-2G, Figure 12.) The wind direction and velocity at KJFK is from

[SPECI KJFK 121853Z 18004KT 1/2SM FG R04/2200 OVC005 20/18 A3006]

A. 180° true at 4 knots. [This is how you remember if something is true or magnetic. “If it is in print, it must be true.” The only exceptions are for runways, VOR compass rose, and AWOS/ASOS headings when you call from a phone.]
B. 180° magnetic at 4 knots.
C. 040° true at 18 knots.

UA.III.A.K2 Aviation routine weather reports (METAR).

40 (Refer to FAA-CT-8080-2G, Figure 12.) What are the current conditions for Chicago Midway Airport (KMDW)?

[METAR KLAX 121852Z 25004KT 6SM BR SCT007 SCT250 16/15 A2991

SPECI KMDW 121856Z 32005KT 11/2SM RA OVC007 17/16 A2980 RMK RAB35]

A. Sky 700 feet overcast, visibility 1-1/2SM, rain. [Time, wind direction and speed, visibility in SM, clouds, Temperature/ dew point, altimeter in inches of mercury. It is almost always the same format. Just go through and find the two wrong answers.]
B. Sky 7000 feet overcast, visibility 1-1/2SM, heavy rain. [This can quickly be eliminated because it is always two zeros after the end for the altitude of the base of the clouds. It would be 700, not three zeros to make 7000.]
C. Sky 700 feet overcast, visibility 11, occasionally 2SM, with rain. [Clever. Really clever. Looking at the other material, like LAX above which shows 6SM, that should have clued you in that the value for that place should be a number in statute miles.]

UA.III.A.K2 Aviation routine weather reports (METAR).
41. Refer to FAA-CT-8080-2G, Figure 20, area 2.) Why would the small flag at Lake Drummond of the sectional chart be important to a remote pilot?

A— This is a VFR check point for manned aircraft, and a higher volume of air traffic should be expected there.

B— This is a GPS check point that can be used by both manned and remote pilots for orientation.

C— This indicates that there will be a large obstruction depicted on the next printing of the chart.

Learning Statement: Interpret information on a Sectional Chart
Aviation Law Services:

- **Applying for a Certificate of Waiver / Authorization (COA).** Commercial drone operators operating outside of Part 107 as well as government agencies operating drones both need COAs according to the FAA. Also, sometimes operators need greater flexibility than what their current COAs provide. We can assist in the amendment of COAs.
- **Petitioning for a Section 333 Exemption for Commercial Drone Operations.** In July 2016, the FESSA changed what is allowed under the Section 333 exemptions. While Part 107 will replace the need for many of the 333 operations, there are very good reasons to have a Section 333 exemption going into the future.
- **Outside Counsel.** Are your attorneys wasting too much time on trying to figure out how to navigate the Federal Aviation Regulations? Rupprecht Law, P.A. can help assist your general counsel to get through difficult problems because the firm specifically focuses on aviation and drone law. Your legal counsel can get accurate answers to the many details and complexities of this area with Rupprecht Law, P.A.’s advice.
- **Federal Aviation Regulation and FAA Guidance Compliance.** Do you have general questions about whether you can do a certain type of operation?
- **Setting-up Drone Enterprise Operations inside a Company.** Developing the manuals to scale out a nationwide program is an important task. Rupprecht Law, P.A. is currently working with companies now on concepts of operations, putting those concepts in a manual, and then integrating those manuals into employee flight instruction operations.
- **Defense in FAA Enforcement Actions** – Sometimes the FAA chooses to start an investigation against unauthorized commercial drone operations or there is a violation of the regulations or exemption restrictions. If this is the case, please contact the firm for assistance.
- **Drone Operator Vetting.** Are you interested in hiring a drone operator or interested in developing a program on how to evaluate drone operators for your company?
- **Temporary Flight Restriction Waivers.** Are you needing to fly in a Temporary Flight Restriction? Rupprecht Law, P.A. can assist in obtaining waivers to operate within TFRs.
- **Helping Government Agencies Obtain a Public COA.** This can include drafting and seeking approval of a public aircraft operator declaration letter, filing the COA application through the portal, or providing guidance on whether proposed operations fall within public aircraft operations.
- **Assistance in Registering the Drones with the FAA via the Part 47 Paper-Based Method.** While many operations will continue to use the Part 48 electronic method of registration, not all aircraft operations can register via Part 48 and must register via Part 47. This process can be difficult for some individuals, but not if you use Rupprecht Law, P.A.
- **Other** – The firm gets all sorts of “odd-ball” types of questions relating to drones and law. If you have a legal question regarding drones, just call and ask.

Now that you know what we can do, ASK! Send an email to jon@rupprechtlaw.com or call (561)222-6979 so you can get helped today.

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