



# FAA Part 107 Study Guide



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The FAA's Part 107 test covers a variety of topics, including keywords, aviation terms, sectional charts, and METAR map reading. We at Propeller know that getting licensed to fly a drone on your site can seem overwhelming, but [it's really way easier than you think](#).

To help you prepare for test day, Propeller's drone operations experts put together this study guide to give you all the info you need to pass and get licensed.

Some of the things we'll be covering in this study guide are:

- Important numbers
- METAR reports and weather abbreviations
- Acronyms, terms, and keywords
- Controlled and special-use airspace

But before we jump into the facts and figures, let's cover the logistics of the test itself.

## Signing up to take the test

Before you can register to take the test, you need to [establish an FAA Tracking Number \(FTN\) with IACRA](#).

Use your new FTN to [create an account with the FAA testing site](#). Once you have an account, you can schedule the time and testing center location where you want to take the test. You can also schedule your test over the phone by calling (844) 704-1487.

During the registration process, you can note whether you'll need certain accommodations during the test, such as extra breaks, a left-hand mouse, or a time extension due to a learning or reading disability.

The registration costs \$160. Be sure to bring a government-issued photo ID to the testing center.

# The test itself

Typically, the test consists of about 60 questions, but some extra, ungraded ones may be added in individual instances.

The pass rate is 70%, which means you can get 18 questions wrong and still pass. All questions are multiple choice with three options (A, B, C). This all means that, statistically, you can likely pass even if you have to guess on 27 questions. Note that of the three, one option can almost always be eliminated because it's obviously ridiculous.

You can also check out a free practice test if you want an idea of what the questions look like:

- [Rupprecht Law's sample test](#) (includes detailed explanations)

## Tips for the testing and sign-in processes

It's a good idea to arrive early to review your notes and so you don't have to rush. This will also give you time to leave your phone in the car (you can't bring it into the test) and use the restroom beforehand.

You'll need a valid photo ID (like your driver's license) to get in. Simple calculators are advised, but you might be able to borrow one at the testing center or your test might not have any arithmetic in it. They also provide a pencil, scratch paper, and this booklet (but don't write in it).

Testing tips:

- The test is two hours long, which gives you roughly two minutes per question. Many people finish well before that time limit.
- For easier reading, you can increase the test's font size on the screen
- You can go back and change answers until you choose to complete your test.
- For questions you've guessed on, click Mark. Those show up in the index with a question mark, so you can return and review before officially submitting.
- You'll see your score immediately upon completion.

# After You've Passed

Your test proctor will print out a paper with an official stamp including your test score, a list of the questions you missed, and a test ID. (Once you get back to your smartphone, take a picture of this paper, because it has the exam ID you need and you don't want to lose it.)

## **You're not yet certified, you still have more paperwork to complete.**

After passing the test, you need to:

1. Create an FAA account.
2. Submit an application including your exam ID.
3. Wait seven days for an emailed temporary certificate from the FFA.  
You can then fly with that temporary certificate.
4. Wait for the TSA to finish your background check and mail your official certificate.  
(Note that the mail can take a long time.)

Wait 48 hours for the FAA to receive your test results, but not more than 10 days or your test results will expire.

- Between two and 10 days after you pass, visit <http://iacra.faa.gov>.
- Click the [Register](#) link and setup an account.
- Click the **Start New Application** button, and fill in all the info. (This form is confusing, but you must agree to terms and review a privacy agreement before reviewing your application.)
- After you've reviewed it, you need to officially submit. It's very easy to think you're done before this last submission step—don't forget, otherwise your application won't be processed.

**Even at this step, you're not certified. You can fly only after the FFA has emailed you a temporary certificate.**

# What if you fail?

In the unlikely event that you don't pass, that's okay. You can take the test again after 14 days (though you will need to pay the fee again).

If you find yourself in this situation, take a few minutes to review the questions you got wrong before you leave the testing center—so you know what to study up on. The testing center will also give you a paper listing every question you got wrong.

## Study Resources

Here you'll find all the keywords, acronyms, and terms you need to know, as well as explanations of various weather and aviation charts and examples.

### Numbers

- **One:** How many drones you can fly simultaneously.
- **400ft:** The highest you can fly above ground level.
- **500ft:** Minimum distance you can fly below clouds.
- **100mph (87 knots):** Your flight speed limit.
- **0.55lbs:** The lightest drone that needs registration (must be >0.55lbs).
- **55lbs:** Heaviest legal drone (must be <55lbs).
- **0.04:** The maximum allowable blood alcohol level during drone operation.
- **8hrs:** Time that must pass since you last drank alcohol before flight.
- **10 days:** Maximum time allowed to file an FAA accident report.
- **30 days:** Time frame to notify the FAA if you move residences.
- **90 days:** Required lead time when requesting an FAA waiver.
- **One year:** Time that must pass after a final narcotics conviction.
- **16 years old:** Lower age limit for licensed drone operation with Part 107.
- **24 months:** How long Part 107 certification lasts before you need to renew.
- **30 minutes:** Timespan before sunrise or after sunset when you can fly.
- **Three statute miles:** (a) The distance away your drone's anti-collision lights must be visible from when flying during twilight. (b) Minimum visibility you must have while flying.
- **2,000ft:** (a) Minimum distance horizontally you can fly from a cloud. (b) Distance away from a tower you should operate to avoid hitting guy wires.
- **\$500:** Repair cost of accident damage that requires an accident report to the FAA.
- **Level 3:** The "serious injury" AIS level that requires an accident report to be filed.
- **122.9:** The MULTICOM frequency for self-announcement procedures.

# Acronyms and Terms

You don't need to memorize these, but they might be a helpful study reference.

- **AC:** Advisory circulars
- **ADM:** Aeronautical decision making
- **AFM:** Aircraft flight manual
- **AGL:** Above ground level
- **AIM:** Aeronautical information manual
- **AIS:** Abbreviated injury scale
- **ASL:** Above sea level
- **ASOS:** Automated surface observing system (weather monitoring)
- **ATC:** Air Traffic Control
- **ATCT:** Air Traffic Control tower
- **ATIS:** Automatic terminal information system (an info loop radio broadcast near an airport)
- **AWC:** Aviation weather center
- **AWOS:** Automated weather observing system
- **CFR:** Code of Federal Regulations
- **CG:** Center of gravity
- **CoW:** Certificate of waiver
- **CRM:** Crew resource management
- **CS:** Control station (the drone's remote)
- **CTAF:** Common traffic advisory frequency
- **FAA:** Federal Aviation Administration
- **FDC:** Flight data center
- **FLIP:** Department of Defense Flight Information Publication

# Keywords

- **Angle of attack.**  
How the craft is angled towards the wind. Determines when the craft stalls. This doesn't change if the vehicle weight changes.
- **Center of Gravity (CG) Limits.**  
Typically, defined in the Pilot's Operating Handbook or UAS Flight Manual, but they don't typically exist for drones, though they may be established by the manufacturer
- **Crew resource management (CRM).**  
How you manage your "crew" (should integrate into all phases of operation).
- **Latitude**  
North/south locations. (Tip: it's like climbing a ladder, north-south/up-down.)

- **Left**

Pilots sit on the left side of a plane, so aircraft always turn left when circling a runway. This makes it easier to look out the left window and spot the tower.

- **Load Factor**

Any force applied to an aircraft to deflect its flight from a straight line produces a stress on its structure. The amount of this force is the load factor and it increases during any maneuver.

- **Longitude**

East/west location. (Tip: it's the long way around the planet because the earth is a little squashed due to rotation.)

- **Maintenance schedule**

You're supposed to have one, but most drones can't be repaired by a user and they don't provide a schedule. (Most drones have best practices published by their manufacturers.)

- **Remote PIC**

The answer to any question about who is responsible.

- **Stalls**

Happen when the wing exceeds its critical angle of attack and can no longer sustain lift.

- **Standard briefing**

Briefing that contains weather forecast.

- **Focus on different segments of the sky for short intervals, systematically**

How to scan the sky for traffic.

- **Temperature inversion**

When warm air is above cold air, like with fog, haze, low clouds, poor visibility. The air remains smooth.

- **Moist, unstable air**

Turbulence and showery precipitation.

- **Stable air**

Smooth air, poor visibility, and steady (not showery) precipitation (because stable air is usually humid).

- **Unstable air**

Air mass with intermittent precipitation, turbulence, clear visibility, and cumuliform clouds.

- **Cool and dry = Stable air**

- **Hot and humid = Unstable air**

- **High-density altitude**

This simply means "high altitude." Higher up the air is thinner, and lift decreases.

- **Nimbus**

A rain cloud.

# METAR Reports

**METAR for:** KDEN (Denver Intl, CO, US)

**Text:** KDEN 030353Z 18008KT 10SM CLR M06/M09 A3006 RMK A02 SLP237 T10561089

Example metar chart

- **18004KT**

Wind is 180 degrees at four knots. (The first three digits are the compass heading, the last two are the wind speed.)

- In print, compass headings are always relative to true north, not magnetic north.

- **OVC007**

Sky is overcast at 700 feet. (Numbers are always in hundreds.)

- **1 1/2SM**

Visibility is one and a half statute miles (SM).

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## METAR Weather Abbreviations

You won't need to memorize these, but be sure you can recognize and match them to an answer.

- |                              |                                 |                            |
|------------------------------|---------------------------------|----------------------------|
| ■ BLPY—Blowing spray         | ■ FU—Smoke                      | ■ SA—Sand                  |
| ■ BR—Mist                    | ■ GR—Hail                       | ■ SG—Snow grains           |
| ■ DS—Dust storm              | ■ GS—Small hail or snow pellets | ■ SN—Snow                  |
| ■ DU—Widespread dust         | ■ HZ—Haze                       | ■ SQ—Squall                |
| ■ DZ—Drizzle                 | ■ IC—Ice crystals               | ■ SS—Sandstorm             |
| ■ FC—Funnel cloud            | ■ PL—Ice pellets                | ■ UP—Unknown precipitation |
| ■ +FC—Tornado or water spout | ■ PO—Dust or sand whirls        | ■ VA—Volcanic ash          |
| ■ FG—Fog                     | ■ RA—Rain                       |                            |

## Charts

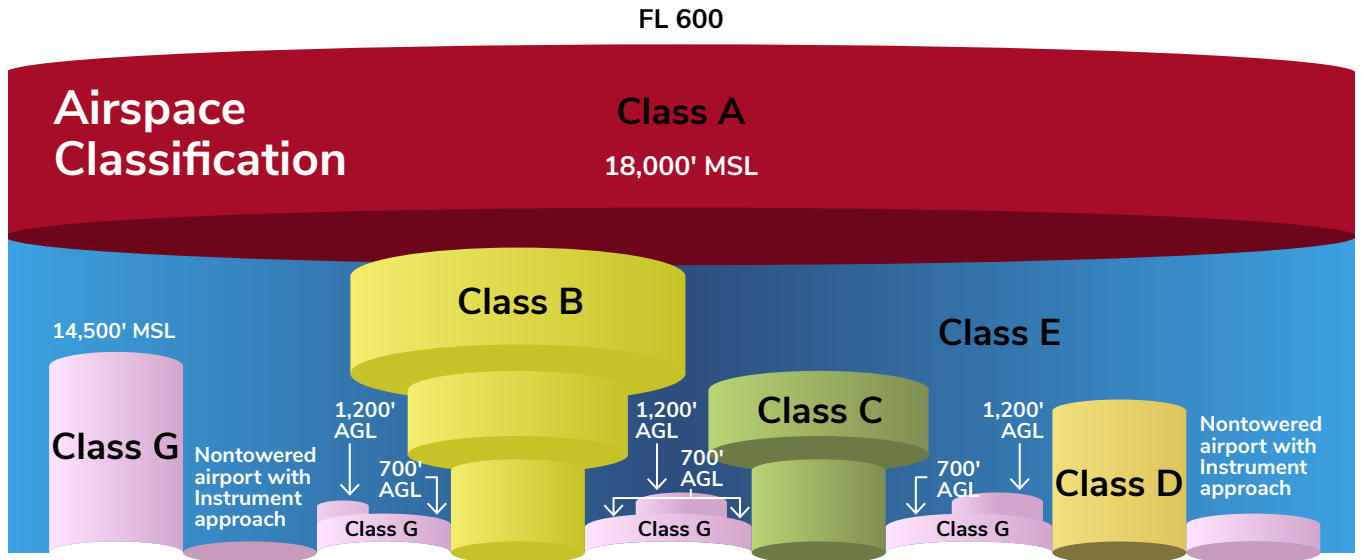
You get [this supplement](#) for test use. It has most of the test question answers, so don't worry, but you will need to know how to use them to find the answers for those questions.

- **AWOS** is for weather.
- Charts include measurements AGL, not MSL.
- **CTAF (Common Traffic Advisory Frequency)** is marked with a C.
- **Red flags** mark VFR checkpoints, indicating more planes might be there.
- **Tick marks** measure minutes between latitude and longitude degrees. Each tick is a minute, while bigger ones indicate five minutes.



# Controlled Airspace

Class B is the most restricted, Class E is the least restricted. Air traffic control (ATC) authorization is required for Classes B, C, and D.



- **Class A**  
18,00–60,000ft, all over the US.
- **Class B**  
0–10,000ft, surrounding major airports. It's multilayered, like an upside-down tiered cake.
- **Class C**  
Surrounds airports with a control tower, radar, and over a specific amount of traffic. Usually, a 5 NM (nautical mile) radius from 0–4,000ft, and a 10 NM radius from 1,200–4,000ft.
- **Class D**  
Surrounds airports with a control tower. 0–2,500 feet, no specific radius, just shaped around flight patterns. Outside control tower hours, Class D airspace reverts to Class G.
- **Class E**  
Usually, 1,200–18,000ft.
- **Class G**  
Uncontrolled airspace, i.e. below Class E.

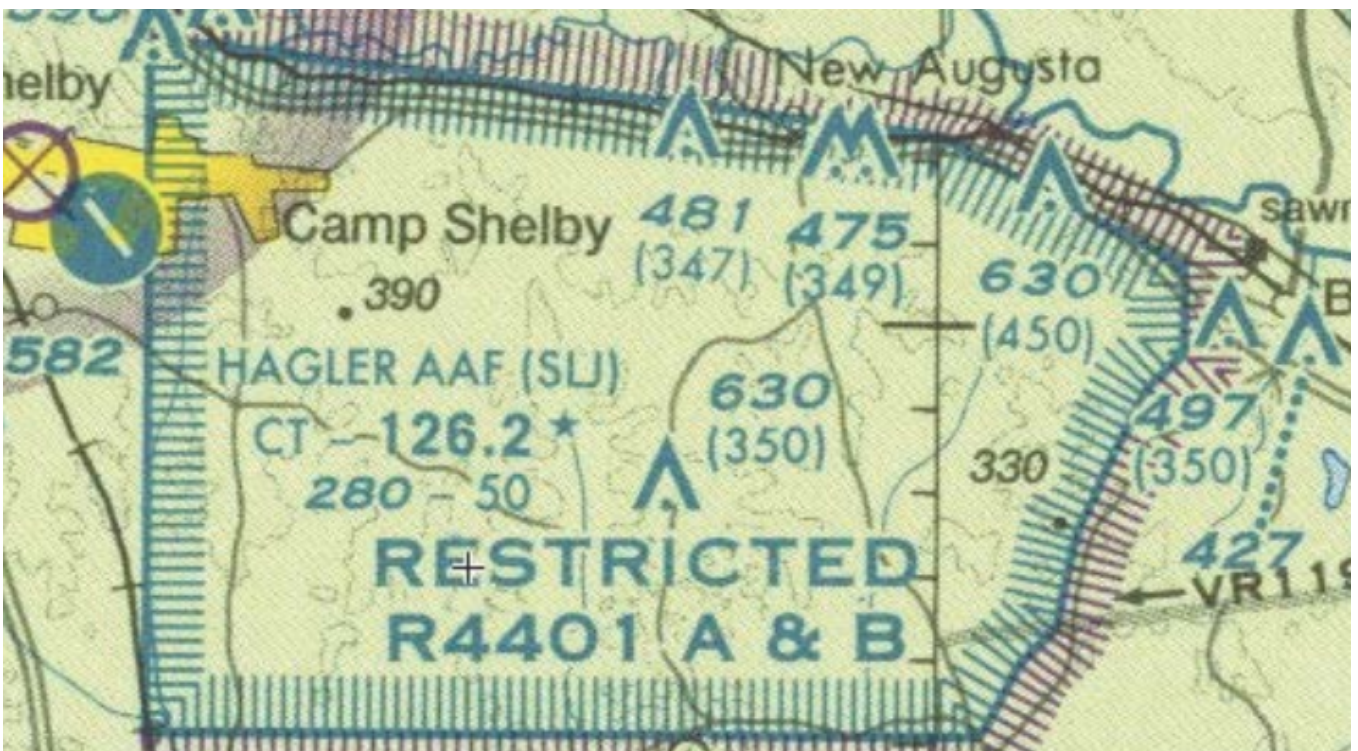
## Special-Use Airspace

This is airspace with various restrictions.

- **Prohibited Areas (P-###).** Locations like Camp David and the White House.



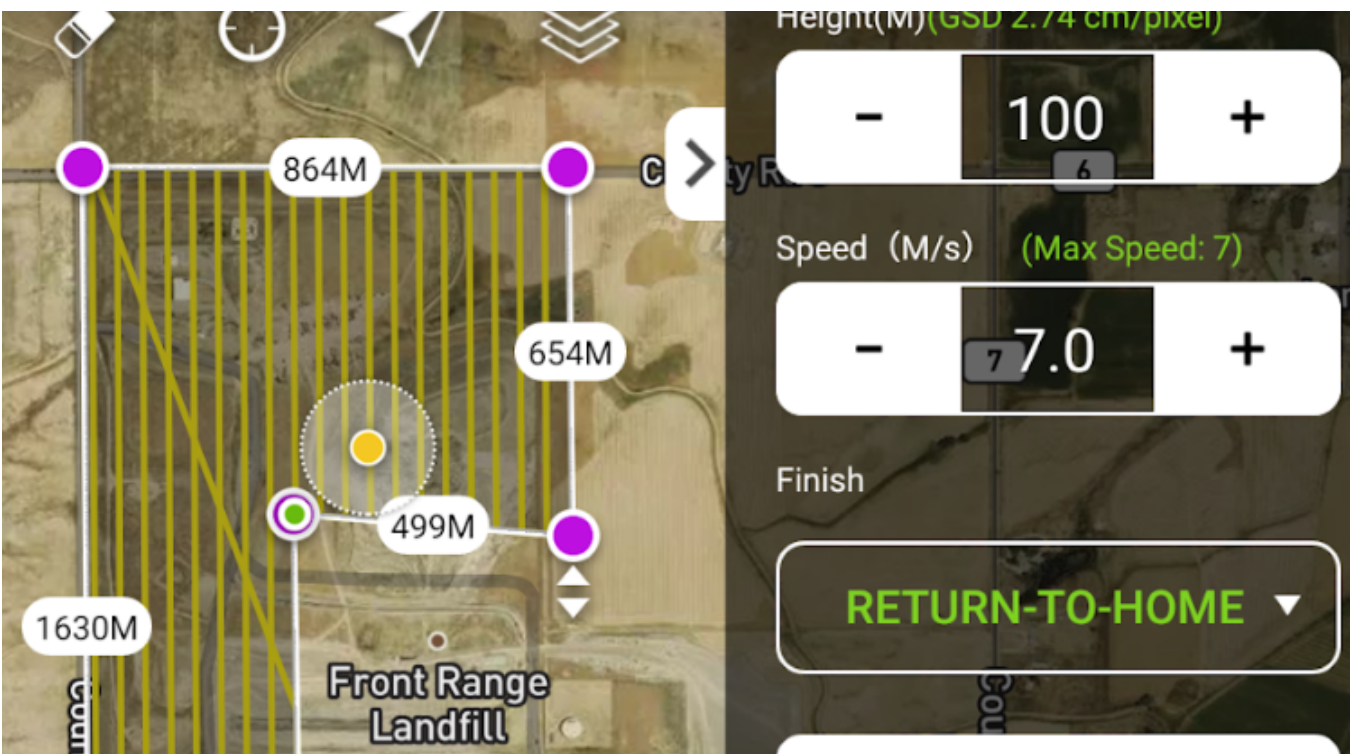
- **Restricted Areas (R-###).** Not entirely prohibited, but can be subject to restrictions. Flying here could be dangerous; the government might be testing artillery, missiles, etc.



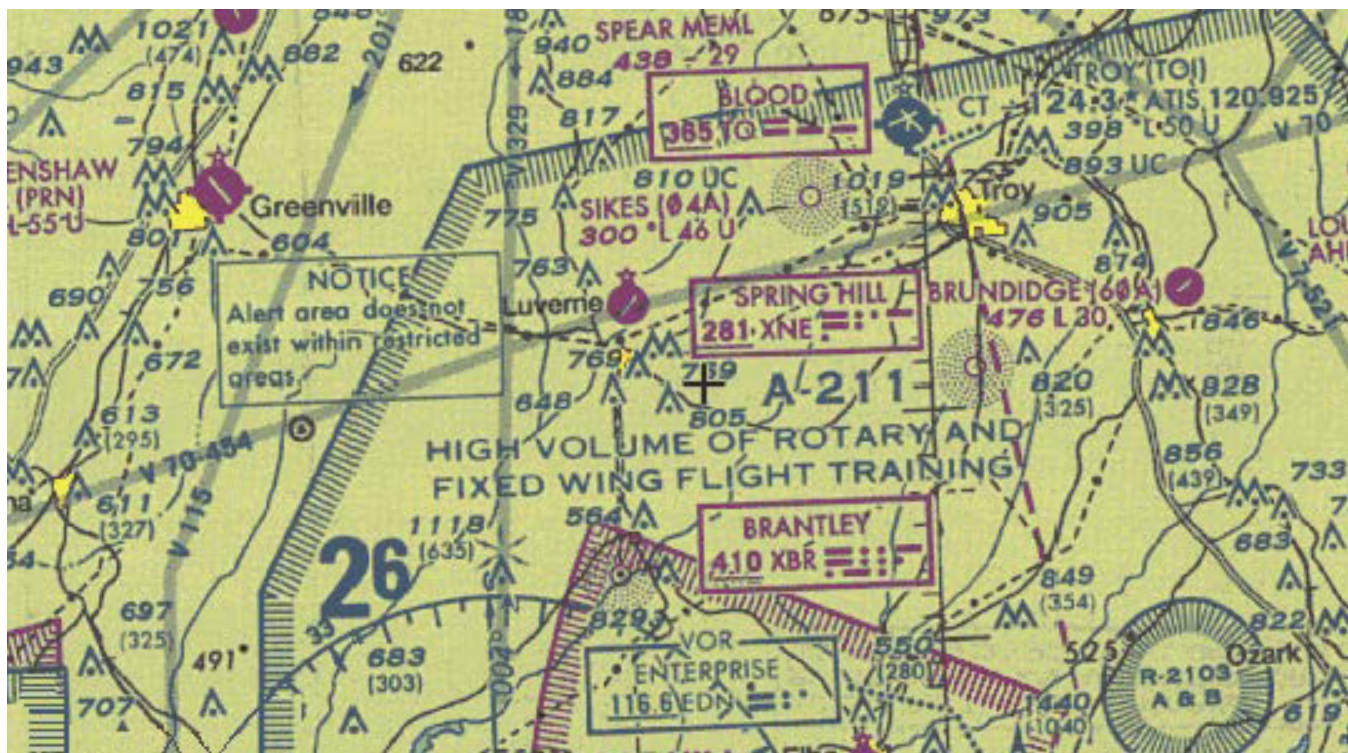
- **Warning Areas (W-###).** Domestic and international waters, from three nautical miles outward from the US coast. Okay to fly there, but not managed by US.



- **Military Operations Areas (MOAs).** This airspace has defined limits for the purpose of separating certain military training activities from IFR traffic. When a MOA is being used, nonparticipating IFR traffic may be cleared if IFR separation can be provided by ATC. If not, nonparticipating IFR traffic is rerouted or restricted. This airspace will often consist of multiple **Restricted Areas (R-###)**.



- Alert Areas (A-###). To inform of areas possibly containing a high volume of pilot training or unusual type of aerial activity (e.g., skydiving training facility).



## Chart Reading Tips

Remember that numbers (like 41/12) are written in hundreds of feet above sea level (MSL). So, 41/12 means 4,100ft, 1200ft SFC = Surface. Consider downloading your local charts to get familiarized with the style and visuals. If you're a more visual learner, check out videos on reading and the maps themselves online.