

An Introduction to Drone Photography

Presented by

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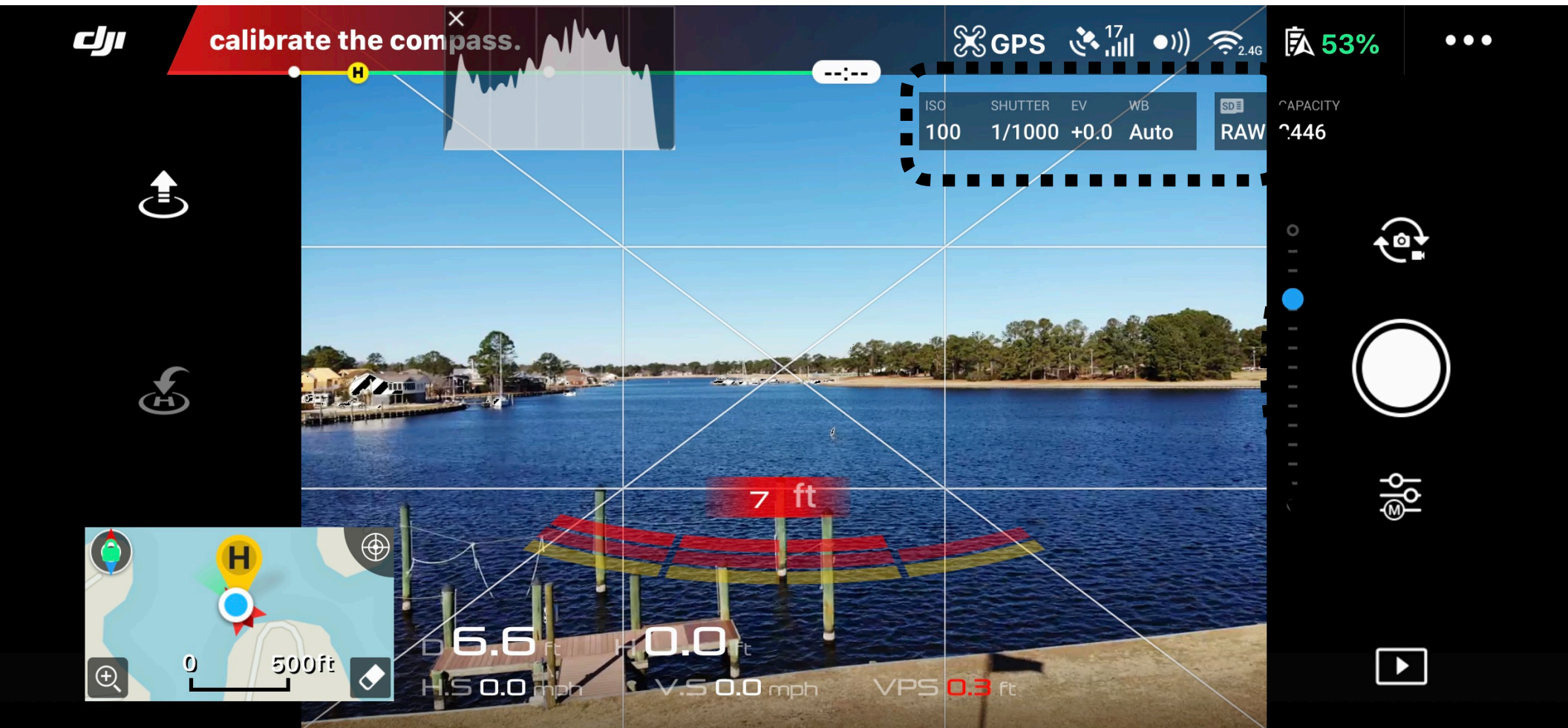
What is a Drone

- **Alternate names:**
 - Unmanned Aerial Vehicle (UAV)
 - Unmanned Aircraft Systems
- **So for a definition:**
 - It is NOT a stingless male bee and,
 - It is NOT a pipe on a bagpipe
 - In our case a drone is an unmanned aircraft that can fly autonomously—that is, without a human in control ~ except that is not true, because the drones that we are talking about are under human control

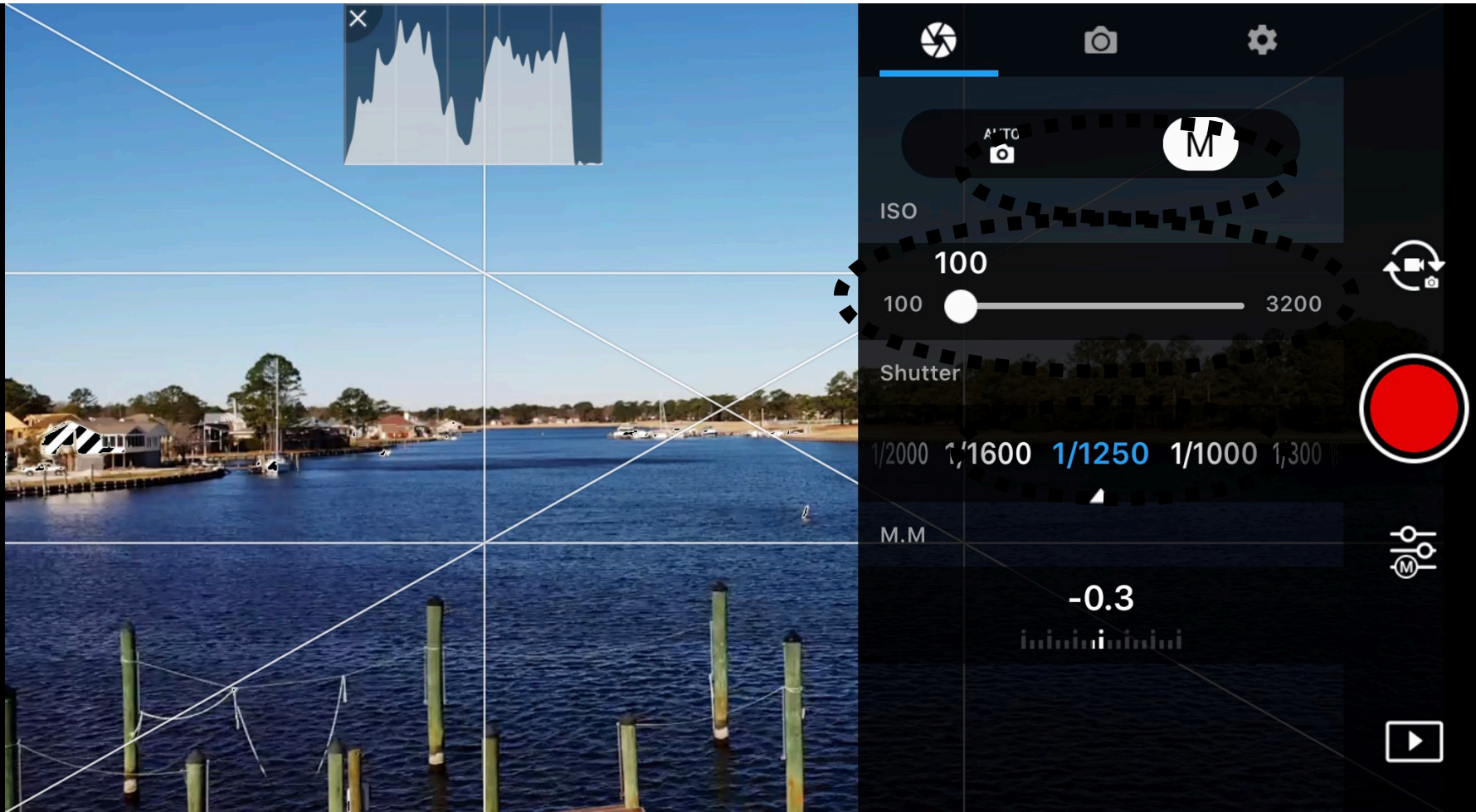
Let's Look at Some Drones

- Bob - Mavic Pro Platinum
- Paul - Mavic Pro
- Simon - Mavic Air
- Also introducing the Mavic Mini (courtesy of Howard Gutzeit)

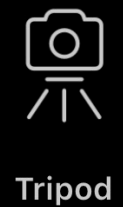
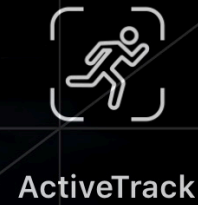
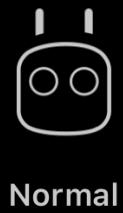
What You See on Screen



Camera Set-Up



Different Flying Modes



Now for Some Boring Stuff

“Regulations”

- Registration of your drone
- Rules of flight - where you can fly and where flights may be limited or completely illegal
- Recreational pilot
- Commercial Pilot
 - FAA Drone Pilot Licence
 - North Carolina Registration

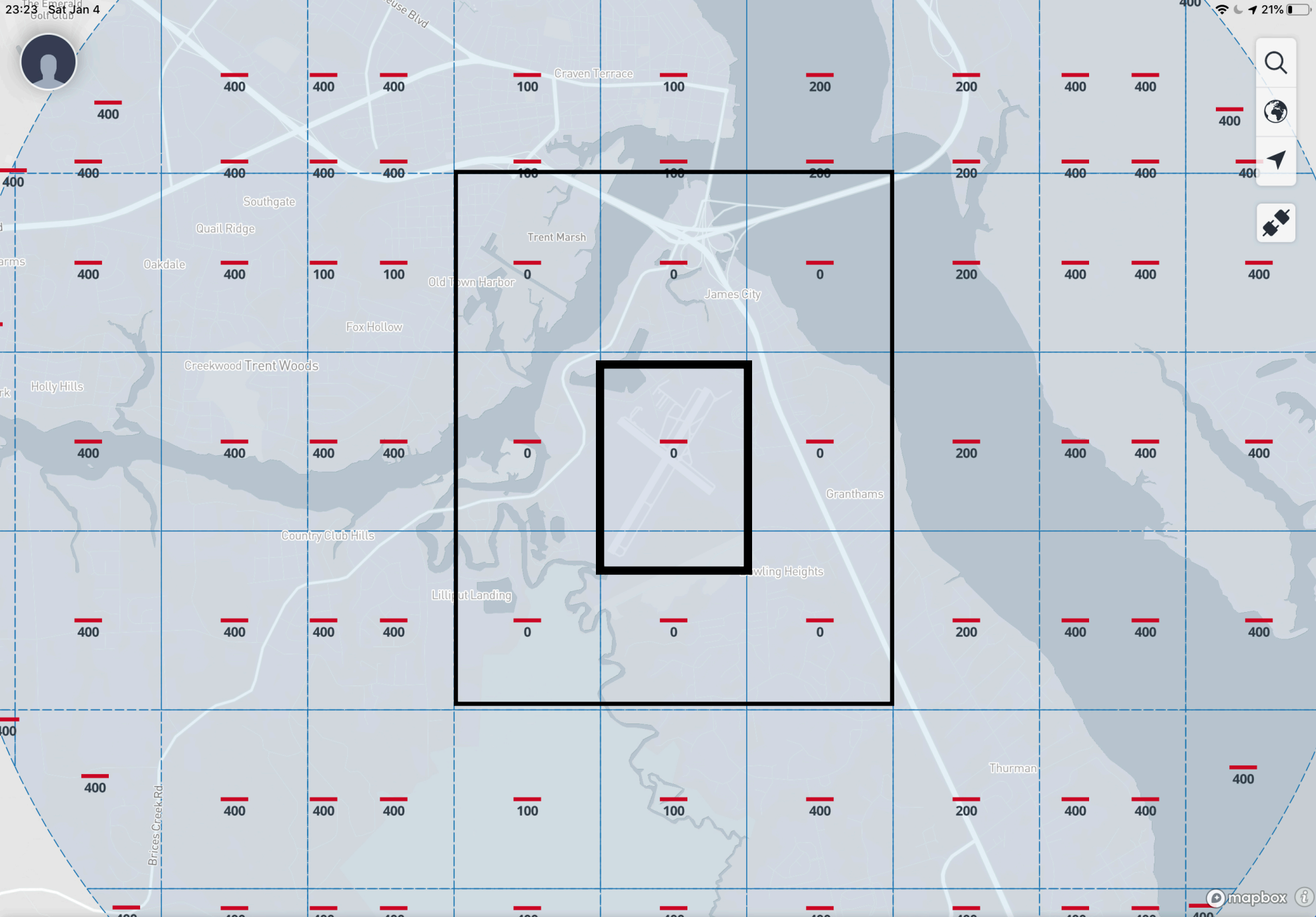
Registration, Licensing and Penalties

- Which unmanned aircraft do I have to register?
 - Owners must register their UAS online if it meets the following guidelines - weighs more than 0.55 lbs. (250 g) and less than 55 lbs. (25 kg).
- What is the penalty for failing to register?
 - The FAA states that failure to register an aircraft may result in regulatory and criminal sanctions. The FAA may assess civil penalties up to \$27,500. Criminal penalties include fines of up to \$250,000 and/or imprisonment for up to three years.
- Penalty for Commercial Drone Flying Without a Pilot's License
 - The civil penalties for flying a drone without first obtaining a remote pilot's certificate from the FAA are up to \$32,666 for each incidence.
 - This fine is charged per day for continual illegal use of a drone for commercial purposes, after receiving a warning letter from the FAA.
 - The FAA may also impose criminal sanctions, which include a fine of up to \$250,000 and/or a prison sentence of up to three years upon conviction.

Examples of the Places You Can NOT Fly

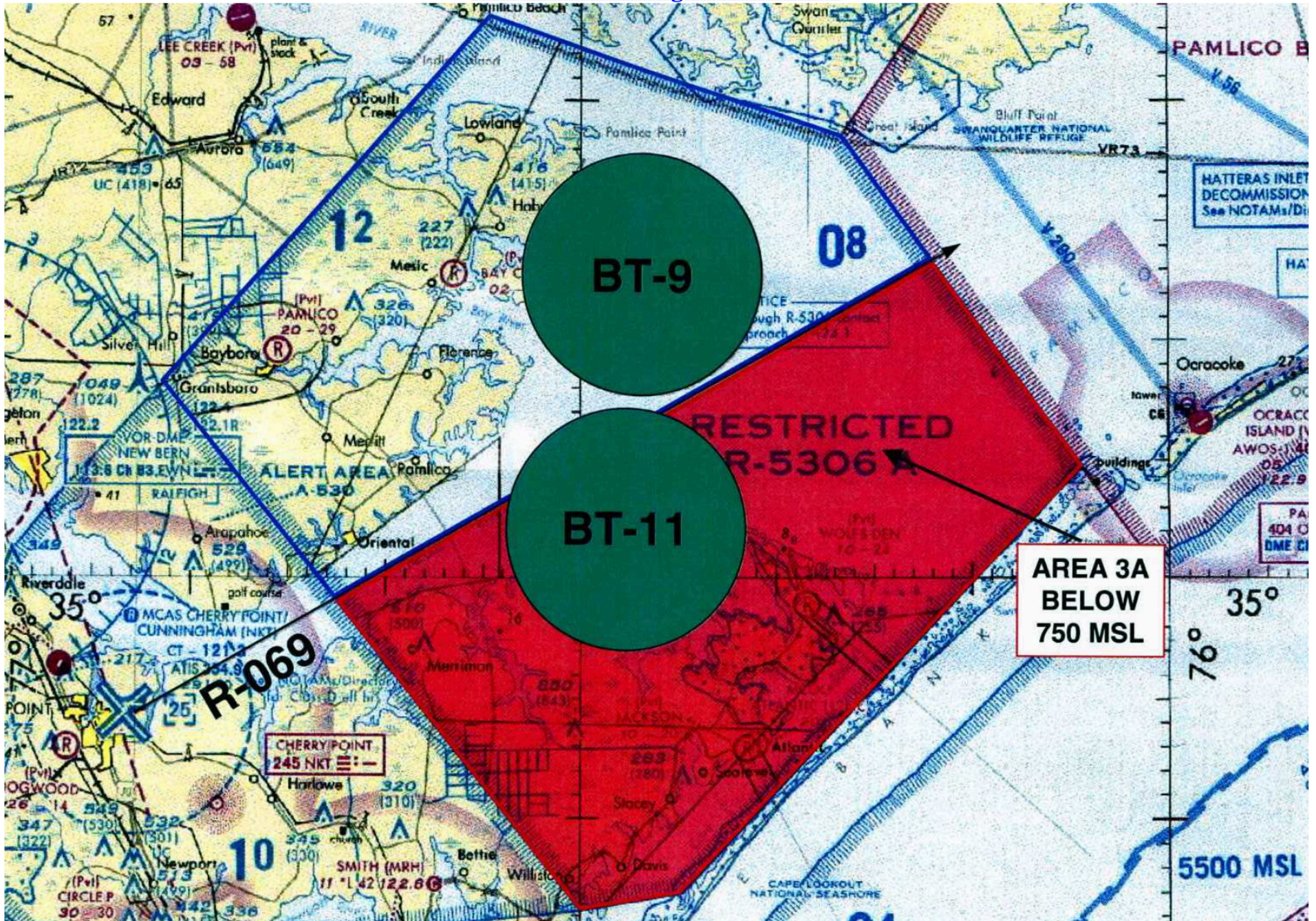
- Within 5 miles of an active airport (but there are exceptions)
- In proximity to a penitentiary or adjacent to military installations
- Close to crime scenes or where emergency services are actively involved in an incident
- All National Parks
- Wilderness Areas
- Close to stadiums when they are in use
- Over crowds
- NOTE:- Rules about flying a drone in state parks vary by location

Example of an FAA Restricted Flying Zone



Example of a Military Restricted Flying Zone

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Want to Make Money?

An FAA Commercial Drone Pilot License is REQUIRED

- **Pass the FAA Part 107 test with more than 70% correct from 64 questions.**
- **VERY hard “2 hour” test!!! Required several hours/days of my study time.**
- **\$150 fee to take the test each time you take the test (initial or recurrent test).**
- **Testing center at New Bern airport at the Tradewinds Flight School.**
- **License only good for two years.**
- **Recurrent test required after two years (another \$150).**
- **Recurrent test less comprehensive but still requires a 70% passing grade**

Cost of my personal test prep training (initial test plus recurrent test)

- I initially spent \$23 for the Amazon book and watched the Northrup video,
- Then spent \$75 for the Gleim materials which did help me past the initial test.
- For my recurrent test, I knew I wanted video training, so first went with the \$129 King School course, and
- Finally the \$249 for Drone Pilot Ground School course. (I wish I would have gone with Drone Pilot Ground School training from the very beginning, and HIGHLY recommend it
- **Total cost without the test itself - \$476**

Study Resources

- **Gleim.com** – Text only, no videos. Provides online practice tests. Used this for my initial test. \$75.
- **Dronepilotgroundschool.com** – EXCELLENT training video course. By far the best training I've had. \$249
- **Kingschools.com** – Online videos, less expensive than Drone Pilot Ground School, but also inferior training. \$129.
- https://www.youtube.com/watch?v=6_ucCKFJUCU – Free Tony Northrup Youtube.com video. Good overview and refresher video.
- https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/media/remote_pilot_study_guide.pdf - Free FAA training materials.
- <https://www.amazon.com/Remote-Pilot-Test-Prep-essential/dp/1619544687> - Good book. \$75.
- Other books, training videos available everywhere via Google and YouTube.com.

NC State Requirements

BEFORE YOU BEGIN

Requirements for Operator Permitting in North Carolina

Commercial	Government	Recreational
<ul style="list-style-type: none">✓ Operator must have a valid Airman Certificate.✓ Operator must be at least 16 years old.✓ Operator must pass the NCDOT UAS Knowledge Test.⚠ Commercial operators have to register their UAS through the FAA's UAS website.	<ul style="list-style-type: none">✓ Operator must have a valid Airman Certificate.✓ Operator must be at least 16 years old.✓ Operator must pass the NCDOT UAS Knowledge Test.⚠ Government operators have to register their UAS through the FAA's UAS website.	<ul style="list-style-type: none">✓ Recreational UAS/drone operators do not need an Operator Permit.⚠ Recreational operators have to register their UAS through the FAA's UAS website.
More Information	More Information	More Information

NC State Requirements (cont.)



Study Guide for North Carolina Unmanned Aircraft Systems (UAS) Operator's Knowledge Test

Published by the North Carolina Department of Transportation Division of Aviation in conjunction with the NC UAS Operators Knowledge Test and North Carolina UAS Operator Permitting System to ensure that UAS operators in North Carolina understand and comply with state laws related to UAS use.

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Resources

- FAA
- Remote Pilot App
- Other Study Resources
- AirMap, B4UFly, KittyHawk
- UAV ForeCast,
- DroneDeploy for mapping and 3D Modelling
- Gurus - eg FromWhereIDrone.com (Dirk Dallas)
- Insurance - Verifly, SkyWatch
- NC State resources:
 - https://www.ncdot.gov/divisions/aviation/Documents/UAS_Study_Guide.pdf
 - <https://www.ncdot.gov/divisions/aviation/uas/Pages/default.aspx>
 - <https://eaviation.ncdot.gov/UAS/Home/Login>