Unmanned Aerial Vehicle

(Drones)

General Overview and Discussion

Eric Muncy

SEILER GEODRONES

SEILER GEOSPATIAL

SEILER GEODRONES

- Seiler Instrument -- 1945 / GeoDrone Division - 2015

- 8 certified UAV pilots with 1 pilot having 20 yrs experience flying time

- Over 200 years of combine GeoSpatial Knowledge

SEILER GEOSPATIAL

SEILER GEODRONES

Products that we carry

DJI Enterprise

Wingtra

Micasense

Quantum Systems

MicroDrone/GeoCUE

Pix4D Software

Underwater

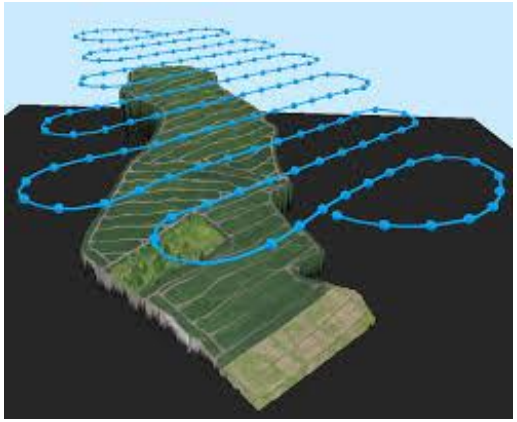
Water

Aerial

Why use an Unmanned Vehicle

- Remote Locations
- Safety
- Smaller Sensors
- Instant data

Surveys



Inspections

Search and Rescue

The Seiler Drone 101 Basics

1) Drone Registration

2) Drone Insurance

3) Pilot Licensing

4) Laws/Regulations

UAV Registration

all hobby and commercial drones weighing between 0.55 and 55 pounds must be registered with the FAA

UAV Insurance

Talk with your carrier about what you are wanting to do. Most carriers already have policies / add ons that you can obtain

www.skywatch.ai/us/home

www.global-aero.com/programs/thimble-verifly-app-drone-insurance/

Part 107 License

The FAA requires the UAV operator to be licensed when flying for “Gain”.

Gain is not just $$$. Anything that is not simply for recreation/hobby.

If you fly for your place of employment

Part 107 Test

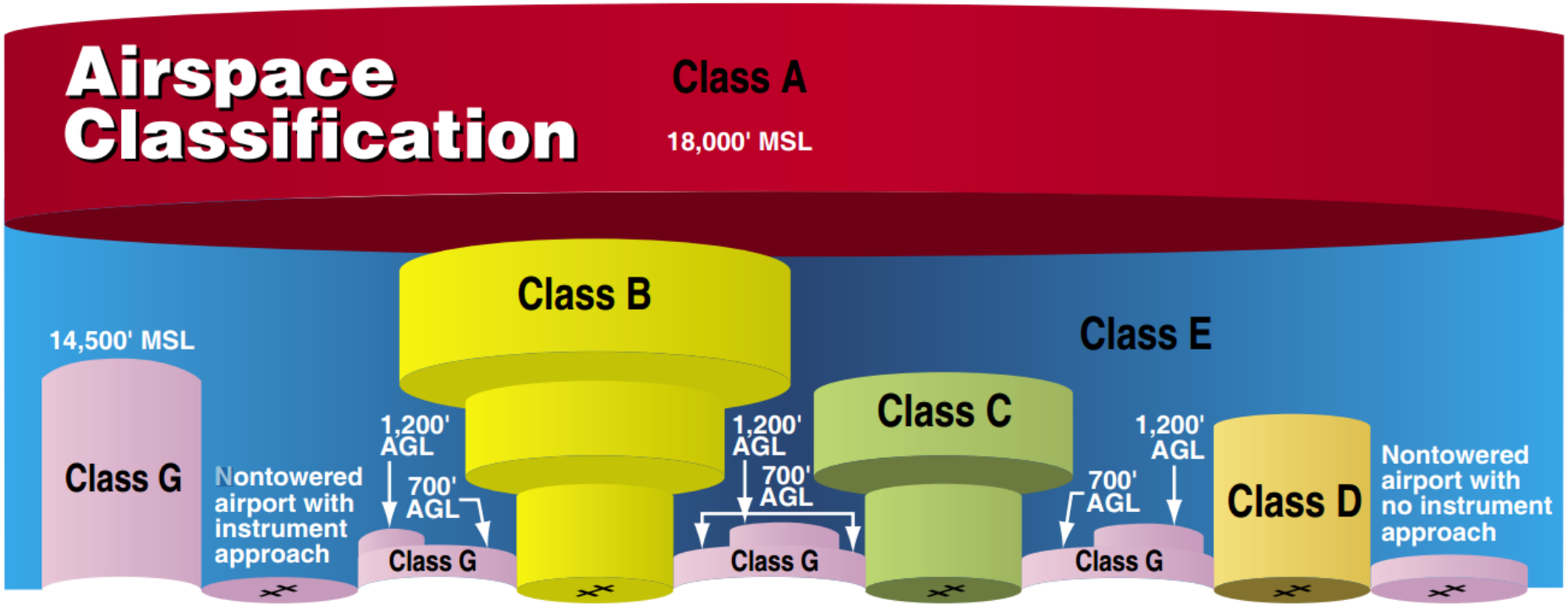
- Must 16 years old or older
- Must be able to read, write, and understand English
- 60 multiple choice questions
- 2 hours to complete
- $170 each time you take the test

UAV State and Local Laws

There may be local and state laws you must follow.

www.faa.gov/uas/

Airspace Classifications



Aerial Drones

Multi-Rotor

Fixed-Wing

Multi-Rotor

- Great for inspections because it will hover.
- Lower battery life.
- Can utilize many different sensors.
- Some can use 2 or more cameras/sensors at one time.

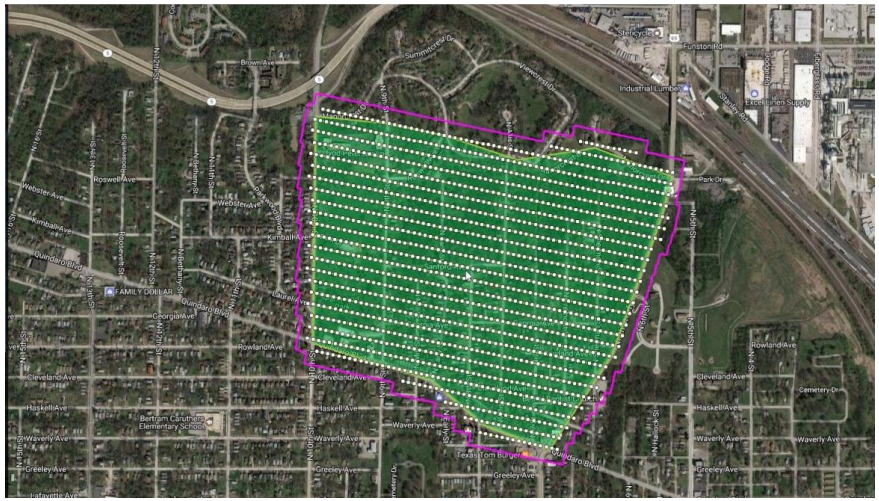
Fixed-Wing/VTOL

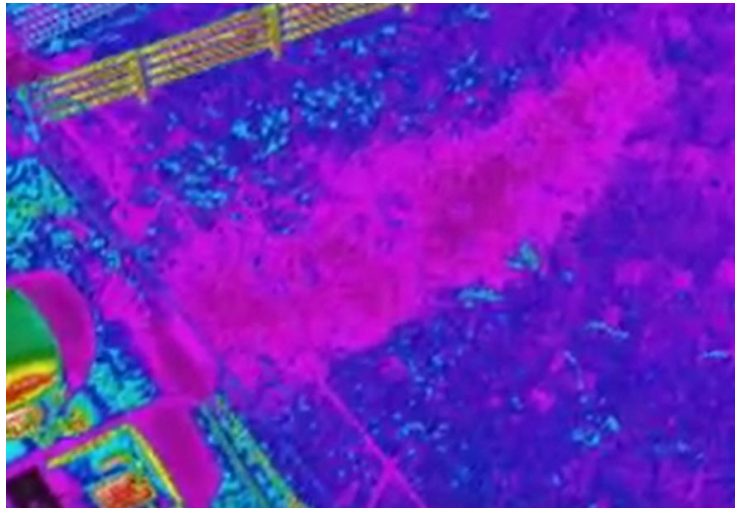
- Longer flight time.
- Cannot hover for inspections.
- Certain Fixed Wings need open areas for take-off and landing.
- Great for surveying large areas.

Flight Options

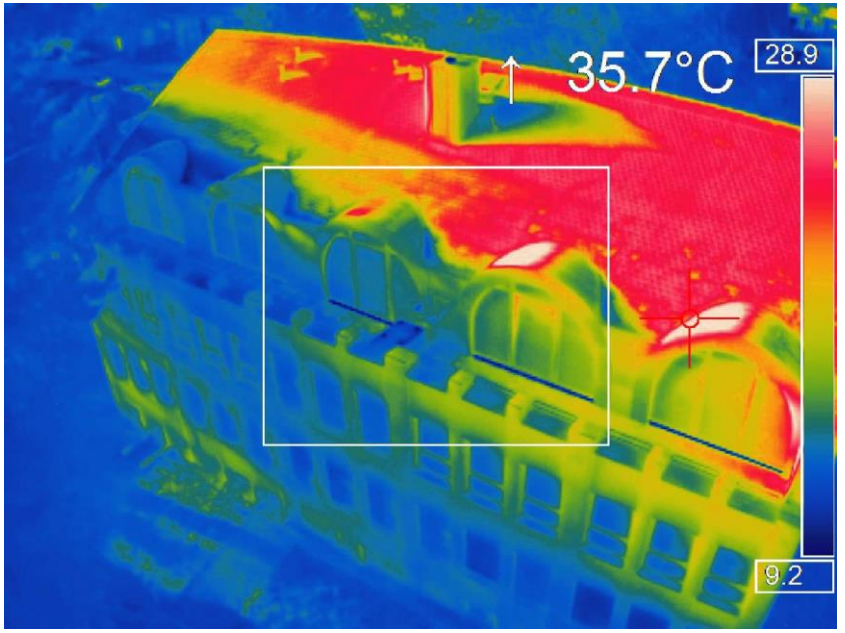
Manual:

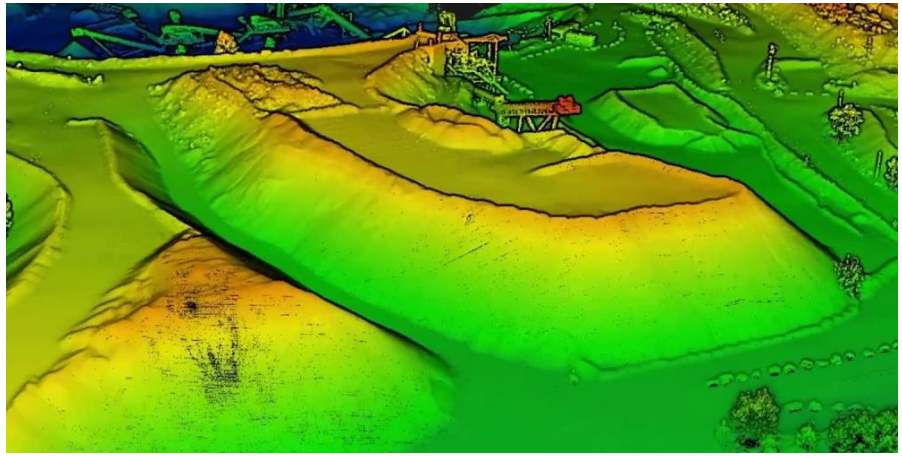
Autonomous:



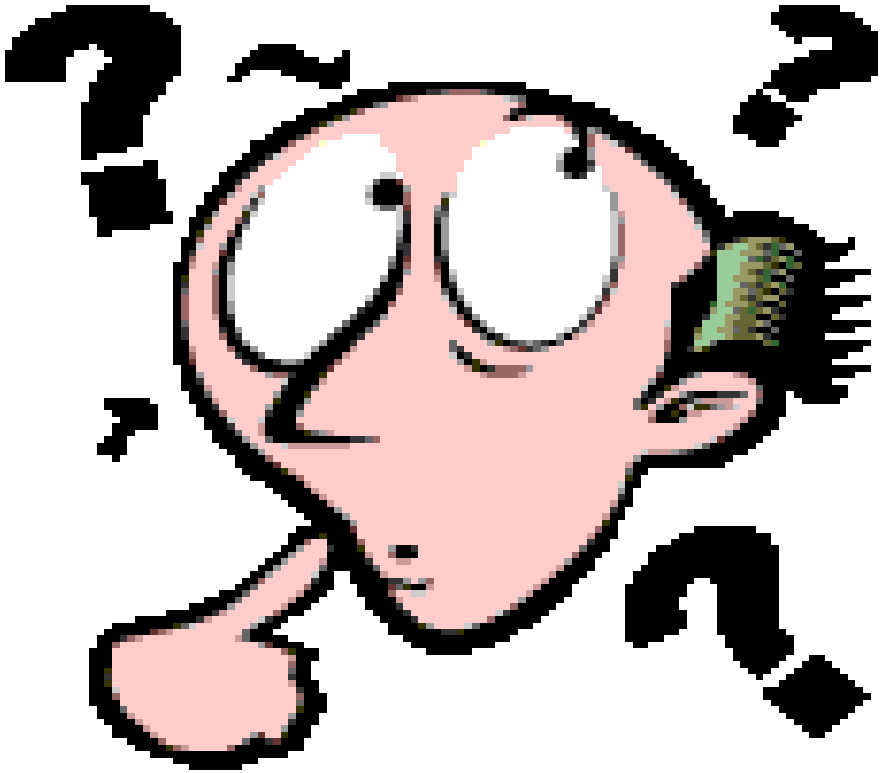



CHINCOTEAGUE
ISLAND


35.7°C
28.9
9.2



Which UAV would be best for you?



What system is right for us?

- Projects (short/long term)
- Weather conditions
- Sensors that you are interested in
- Areas that you will flying/taking off/landing

Wait…..

- Know your local, state, federal laws
- Know your liabilities
- Know your UAV
- Know your environment
- Be safe and keep others/property safe

Future of UAVs - Drones

Future – Systems

Hybrid Drone

Future – Systems

Dock Station

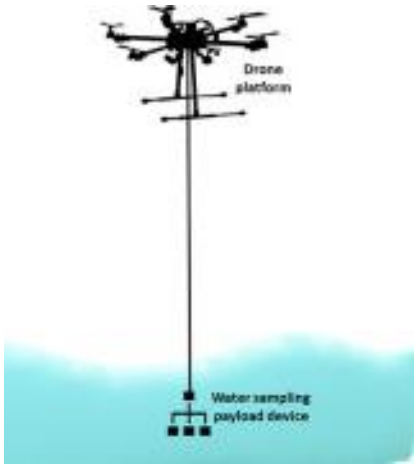
Future – Systems

Power

Future – Systems

Payloads

- Methane
- Water sampling
- Air Sampling
- GPR-Underground location
- Oblique Imagery (3D)

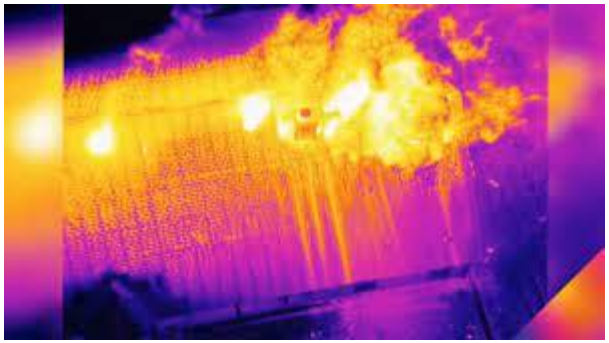


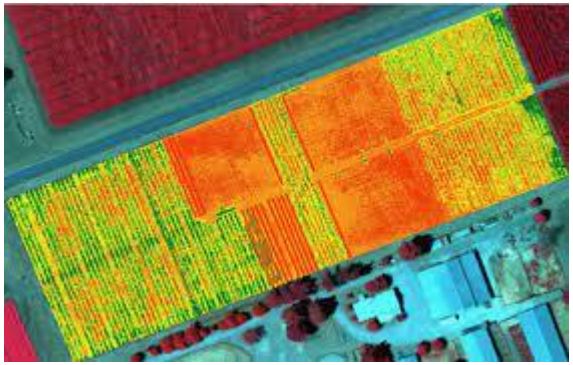
Future – Systems

Software --

Processing software

Artificial Intelligence (AI)





Resources

https://www.faa.gov/uas

B4UFLY Smartphone App (for iOS and Android)

http://knowbeforeyoufly.org/

http://www.regulations.gov

https://www.uavs.org

http://theuavdigest.com/

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Mavic 3 – https://www.youtube.com/watch?v=R1lT-NatLMA

Wingtra – https://www.youtube.com/watch?v=3HEx9Nbb8nc

Waterleak (Thermal) – https://www.dropbox.com/s/sp7vcy2tz3drvlx/Water%20Leak%20Demo%20-%20Small.mov?dl=0

Elevated Water Tank Inspection – https://www.youtube.com/watch?v=aL5RBbXSgUA