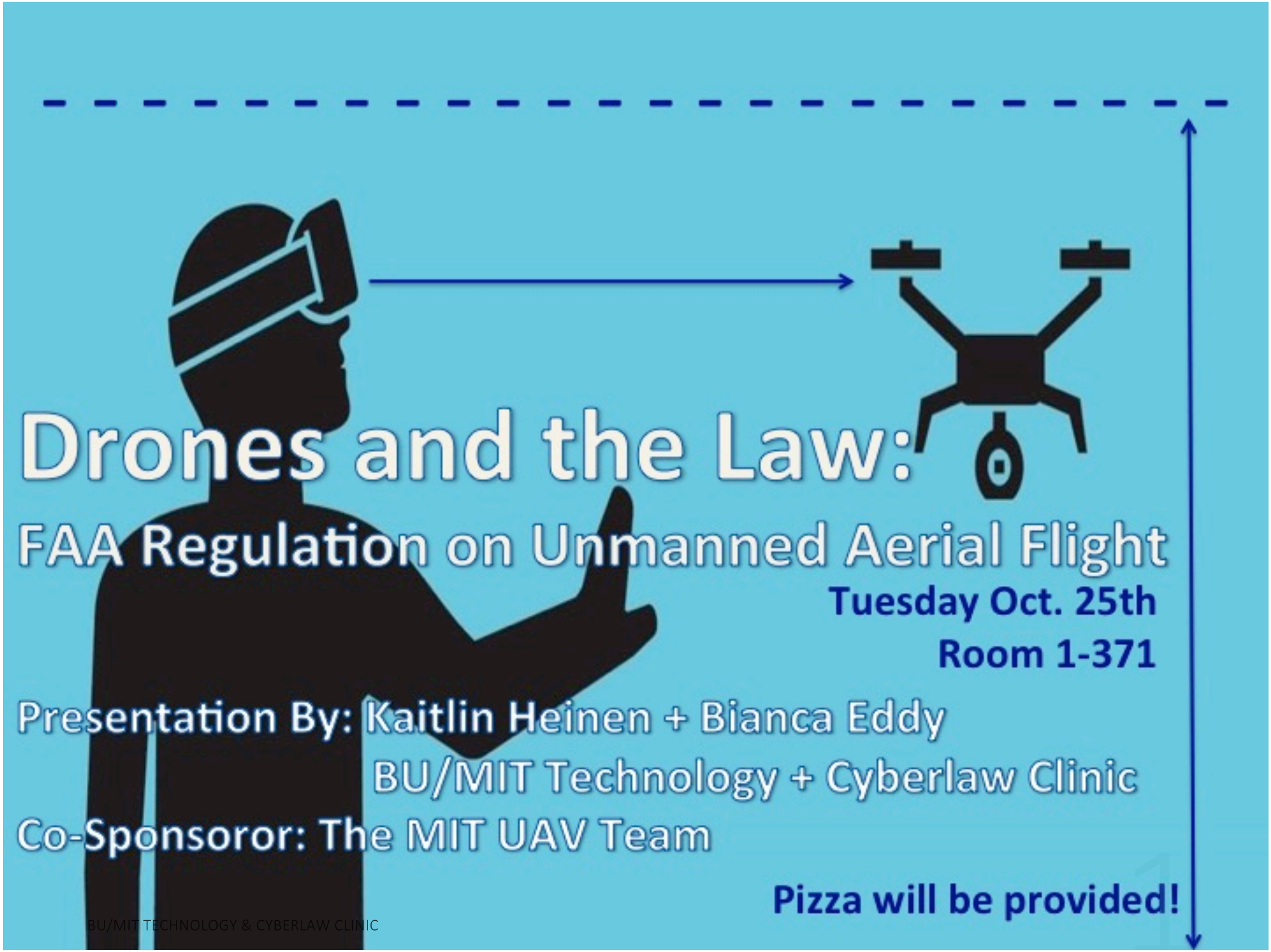

Drones and the Law:
FAA Regulation on Unmanned Aerial Flight
Tuesday Oct. 25th
Room 1-371
Presentation By: Kaitlin Heinen + Bianca Eddy
BU/MIT Technology + Cyberlaw Clinic
Co-Sponsoror: The MIT UAV Team
Pizza will be provided!

Drones and the Law

Introduction

FAA's Regulations vs. Congress' Legislation

Recreational Use vs. Academic Use

Private Property vs. Public Airspace

Flying in Class B Airspace

Working with MassPort

Helpful Resources

BU School of Law
Technology & Cyberlaw Clinic

Introduction

Who are we & what do we do

http://sites.bu.edu/tclc

Definitions

- UAS = unmanned aircraft system
  - Includes aircraft & equipment necessary for safe & efficient operation
  - Unmanned aircraft is defined as “an aircraft that is operated without the possibility of direct human intervention from within or on the aircraft”
- Model aircraft (Part 101)
- sUAS = small unmanned aircraft system (Part 107)

FAA's Regulations vs. Congress' Legislation

What are they & what happens when they are in conflict

FAA Authority for Rulemaking

- Historically:
  - *1926 – Air Commerce Act*
  - *1938 – Civil Aeronautics Act*
  - *1958 – Federal Aviation Act (new independent body)*
  - *1967 – FAA changed its name to Federal Aviation Administration*
  - *2012 – FAA Modernization and Reform Act*
- FAA is in charge of promulgating regulations:

  (1) To ensure the safety of aircraft and the efficient use of airspace; and

  (2) To govern the flight of aircraft for purposes of navigating, protecting and identifying aircraft, and protecting individuals and property on the ground.

Model Aircraft

FAA News

Federal Aviation Administration, Washington, DC 20591

June 21, 2016

SUMMARY OF SMALL UNMANNED AIRCRAFT RULE (PART 107)

Model Aircraft

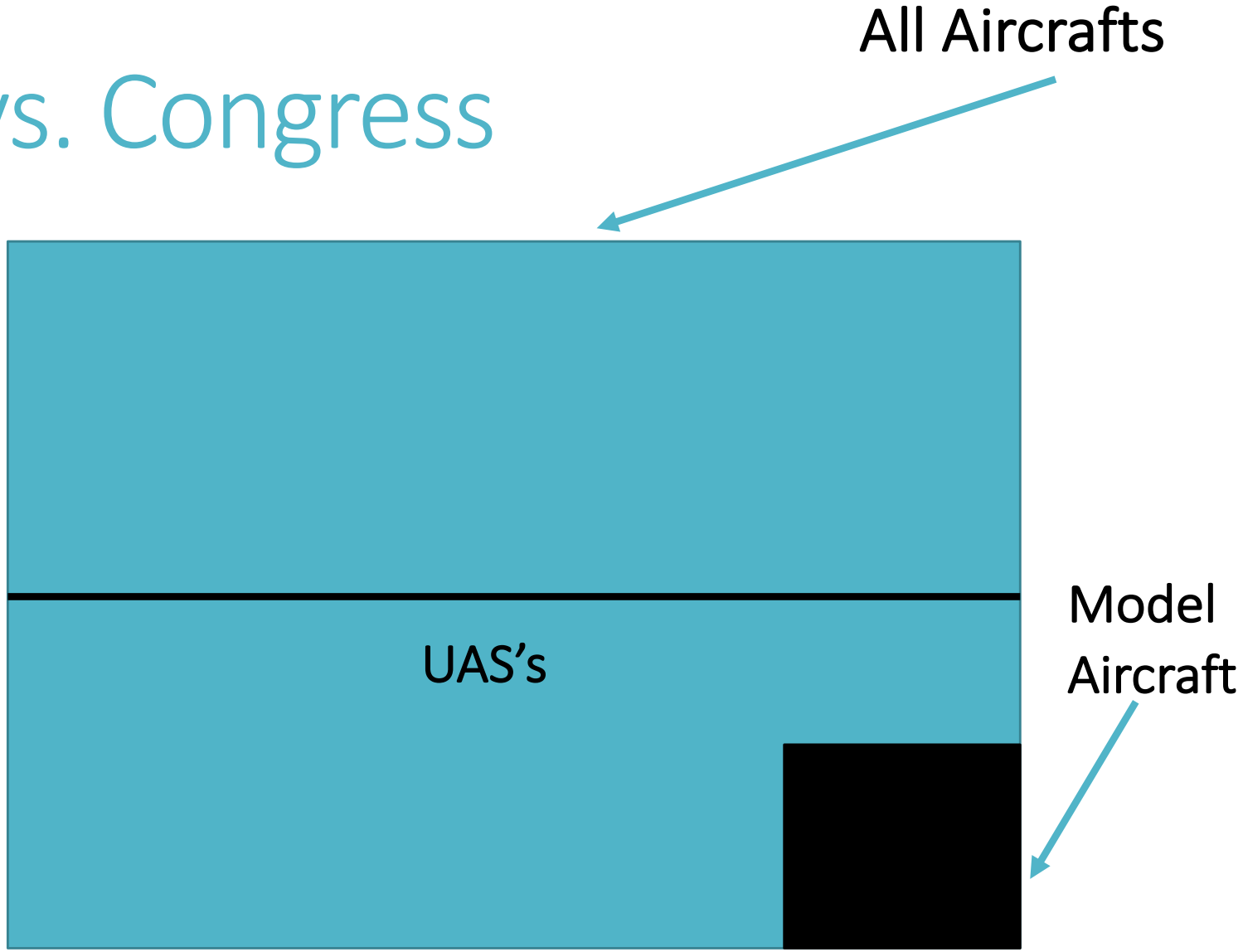
- Part 107 does not apply to model aircraft that satisfy all of the criteria specified in section 336 of Public Law 112-95.
- The rule codifies the FAA's enforcement authority in part 101 by prohibiting model aircraft operators from endangering the safety of the NAS.

Model Aircraft – Part 101(e)

- **Congress specifically prohibited FAA** from making new rules for "model aircrafts," or "aircrafts being developed as model aircrafts," that meet following criteria:
  - *Flown strictly for hobby and recreational use*
  - *Operated according to community-based safety guidelines**
  - *No more than 55 lbs (unless certified)*
  - *Does not interfere with manned aircraft*
  - *When flown within 5 mi. of airport, prior notice of operation given*

WHAT (physical) – **HOW** (protocol) – **WHY** (intent)

FAA vs. Congress

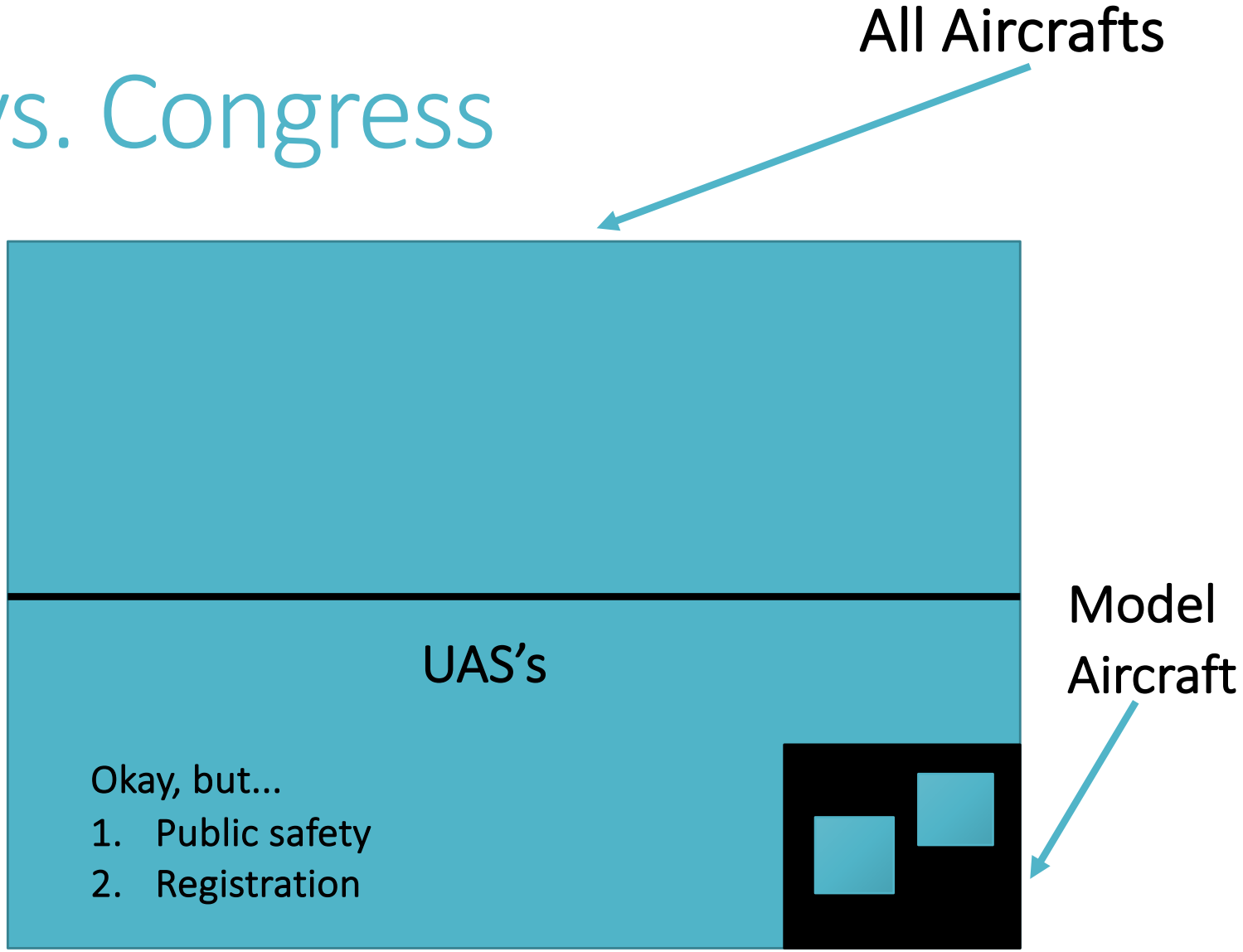


Model Aircraft

- Model aircrafts that **do not** meet part 101 (model aircraft) criteria are deemed "small unmanned aircrafts" under part 107 and are subject to the new FAA regulations, and potentially future rulemaking actions

- FAA's attempt to "take back" model aircrafts:
  - *Public safety concerns*
  - *Registration requirements*

FAA vs. Congress



FAA's Enforcement Authority: Public Safety

- Model aircraft exemption does not limit FAA's authority to pursue enforcement action against model aircrafts that **"endanger the safety of the national airspace system (NAS)"**
  - *Congress specifically recognized FAA's existing authority to take enforcement action to protect safety of NAS*
  - *Remember: FAA is charged with promulgating regulations for flight of aircraft to protect even people and property on the ground*

FAA's Enforcement Authority: Registration

- The FAA asks that you:
  - Mark all aircraft with your number before operation
  - Make the number visible without using tools (you may mark it inside battery compartment if accessible)
  - You may use any method to affix number that ensures it remains visible, including permanent marker, label, or engraving
  - You must have your FAA registration certificate in your possession when operating your unmanned aircraft

NOTE: the FAA does not require registration if you're solely flying indoors

Interpretation of Special Rule for Model Aircraft

The FAA states that the following rules still apply to model aircraft use:

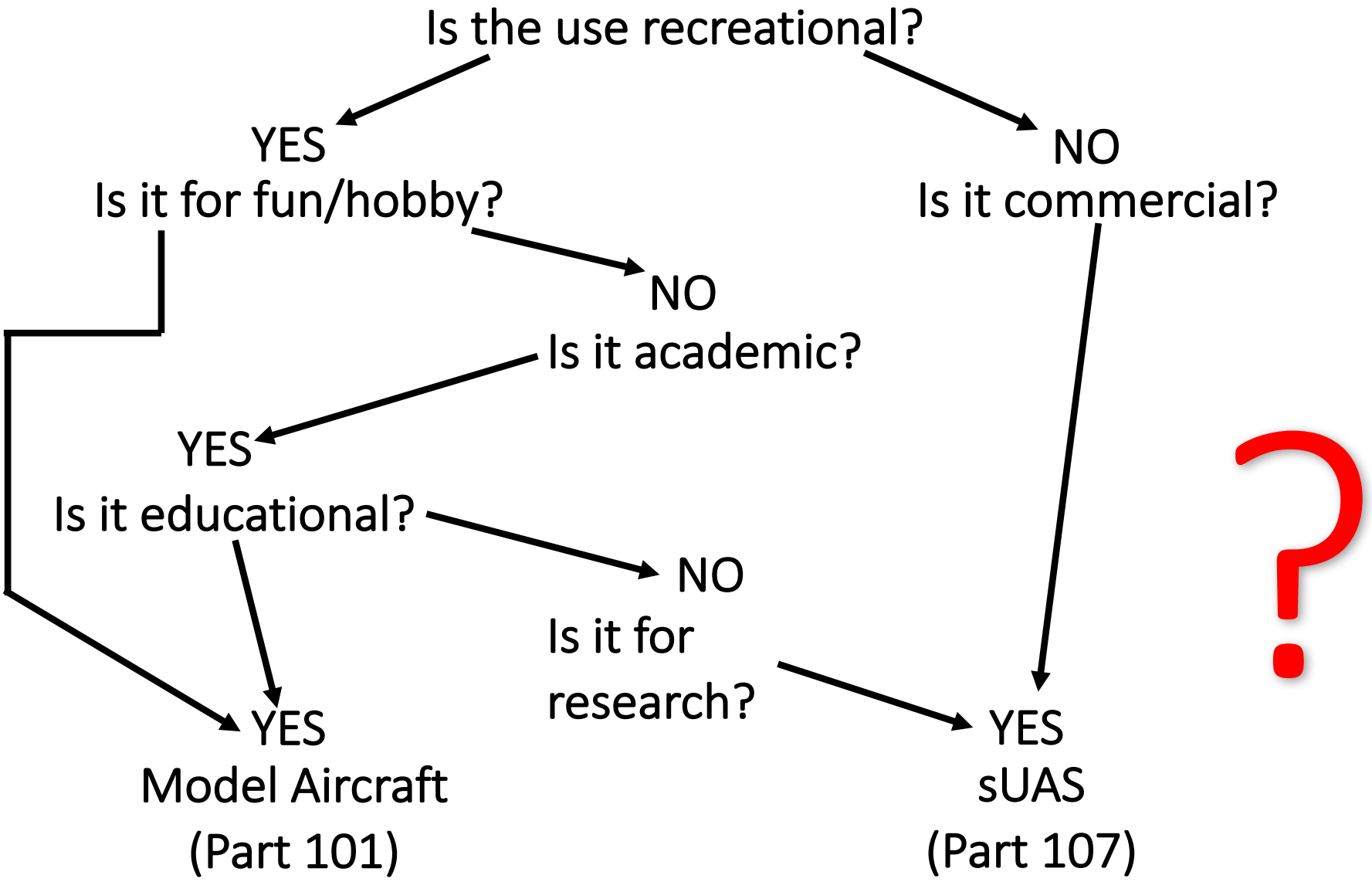
- *Prohibitions on careless or reckless operation and dropping objects so as to create hazard to persons or property*
- *Right-of-way rules for converging aircraft*
- *Operating in particular class of airspace*
- *Operations in areas covered by temporary flight restrictions* and notices to airmen*

Bottom Line

Since FAA is still considering specific meaning of “model aircraft” in separate regulatory action, it has limited its rulemaking simply to enforcement of operations that endanger NAS safety

Recreational Use vs. Academic Use

How are uses defined and what do they mean


Is the use recreational?
YES
Is it for fun/hobby?
NO
Is it commercial?
NO
Is it academic?
YES
Is it educational?
NO
Is it for research?
YES
Model Aircraft (Part 101)
YES
sUAS (Part 107)
?

Academic Use of Drones: Education or Research?

- Currently, unmanned aircrafts used for **research** purposes are NOT exempt from FAA regulations
  - *Under Part 107, sUAS operations for research do not qualify for Congress' model aircraft statutory exception*
- Commenter views from the academic community:
  - *UAS America Fund: Make special allowance for operations that do not meet all of the criteria for model aircraft but are conducted for research purposes*
  - *Princeton University: Universities should be able to obtain "Educational UAS License"*

Academic Use of Drones: Education or Research?

- However, FAA issued memorandum in May explaining that it would consider certain **educational** operations as "hobby or recreational" use which is exempt from FAA regulations
  - *Student use: students may operate UAS's to further their aviation-related education at educational institution, provided that student is*

    (1) not compensated, or

    (2) any compensation received is neither directly nor incidentally related to that person's operation of aircraft at such events

  - *Faculty use: allows for "de minimis" UAS use by faculty during student coursework, but only when faculty member's hands-on use of drone would be "secondary" to lessons taught*
    - This would not apply to course for UAS flight instruction

sUAS: Part 107 (NEW!)

Pilot requirements:

- Must be at least 16 years old
- Must pass initial aeronautical knowledge test at FAA-approved knowledge testing center
- Must be vetted by Transportation Safety Administration (TSA)

Aircraft requirements:

- Less than 55 lbs
- Must be registered

sUAS: Part 107 (NEW!)

Operating Rules:

- Class G airspace*
- Must keep the aircraft in sight (visual line-of-sight)*
- Must fly under 400 feet*
- Must fly during the day*
- Must fly at or below 100 mph*
- Must yield right of way to manned aircraft*
- Must NOT fly over people*
- Must NOT fly from a moving vehicle*

**subject to waiver*

sUAS: Remote Pilot Training

- Knowledge Testing Centers charge approximately $150 to people seeking to take aeronautical knowledge test
- Study materials include the Airman Certification Standards (ACS) for Unmanned Aircraft Systems, the Remote Pilot Study Guide, and online sample questions
- After passing test, you must complete FAA Airman Certificate and/or Rating Application to receive your certificate (validated w/in 10 days)
- Even if you already have pilot certificate issued under part 61, you still need to obtain remote pilot certificate to fly sUAS

MIT "House" Rules

The MIT Office of General Counsel (OGC) is willing to work with student UAV pilots interested in flying on MIT property. Talk to counsel Regina Dugan for more information.

MIT Environmental Health & Safety (EH&S) also has resources for on-campus drone flight, and alternatives for flight plans that may be limited by FAA rules.

Private Property vs. Public Airspace

Where does one end & the other begin

Private Property vs. Public Airspace

- Federal government claims exclusive sovereignty of U.S. airspace
- Congress delegated to FAA the ability to define "navigable airspace" and the authority to regulate "navigable airspace" of aircraft by regulation or order
  - *However, the boundaries of that airspace remain unclear*

Formative case: *Causby*

U.S. v. Causby, 328 U.S. 256 (1946)

- Provided guidance on where private property rights to airspace end and navigable airspace begins
- Determined that "navigable airspace" is airspace above minimum safe altitudes of flight prescribed by CAA
- "The airspace, apart from the immediate reaches above the land, is part of the public domain. **We need not determine at this time what those precise limits**
- **are."**
  - *a.k.a. still unresolved area of law*

Causby

- Did not clarify what happens between 83 feet (which was out of navigable airspace) and 500 feet (still presumably within navigable airspace)
- Post-*Causby*, Congress redefined "navigable airspace":

  > airspace at and above the minimum flight altitudes prescribed by or under this chapter, including airspace needed for safe takeoff and landing

FAA Perspective

- FAA argues that it "has authority to regulate aircraft in U.S. Airspace" at any altitude
- Because federal law states that FAA "shall develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace"

Future Case May Resolve Issue

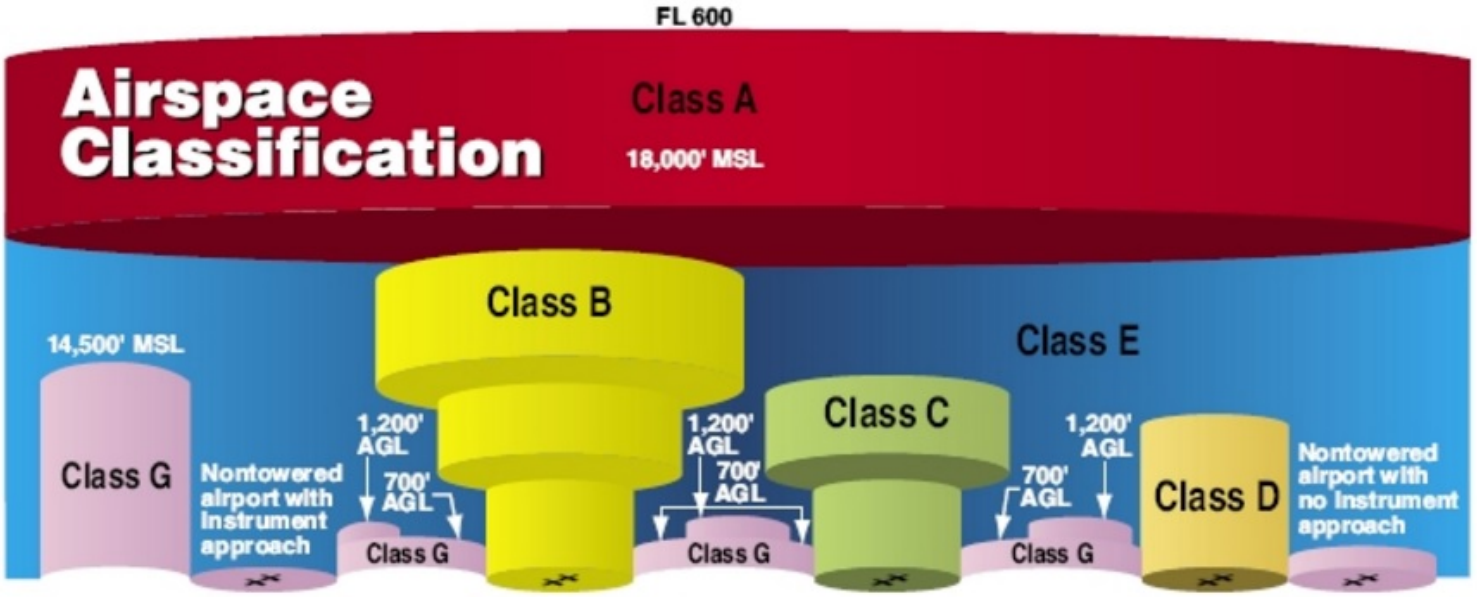
- ***Boggs v. Meredith*** - case in Western District Court of Kentucky where Boggs is seeking to have the district court declare what navigable airspace is
  - *First case dealing with how low a drone can fly legally over people's property*
  - *Last briefing of the case was in June and so this is one to look out for.*
  - *Note: The court did not actually get to the substantive question at hand because it got caught up on jurisdictional grounds (i.e. whether the case could come forward in the first place).*

Flying in Class B Airspace

What are Class B restrictions

Class B Airspace

- "[T]hat airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of IFR operations or passenger enplanements"



Class B Airspace

Bravo Airspace

sUAS: 14 CFR § 107.41 Operation in certain airspace.

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).

Model aircraft: 14 CFR § 101. 43 Endangering the Safety of the National Airspace System

No person may operate model aircraft so as to endanger the safety of the national airspace system.

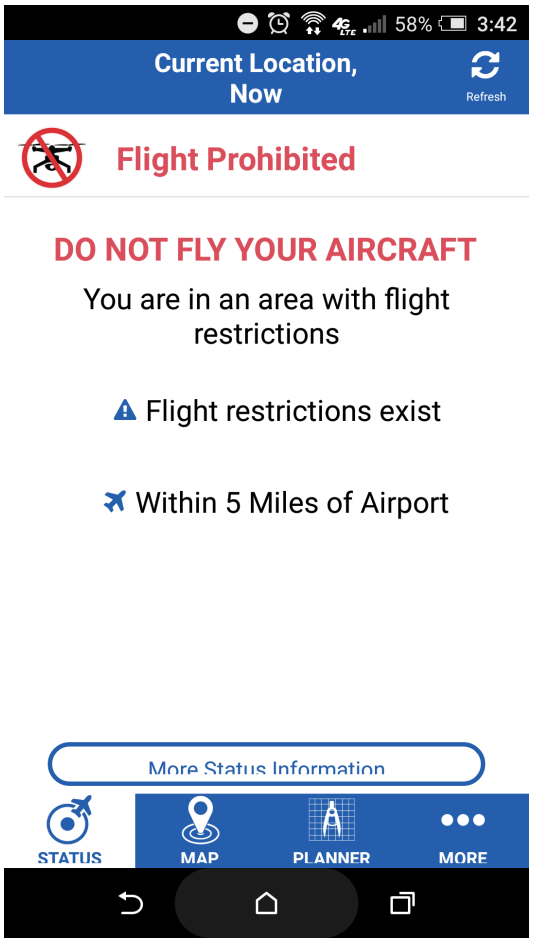
Working with MassPort

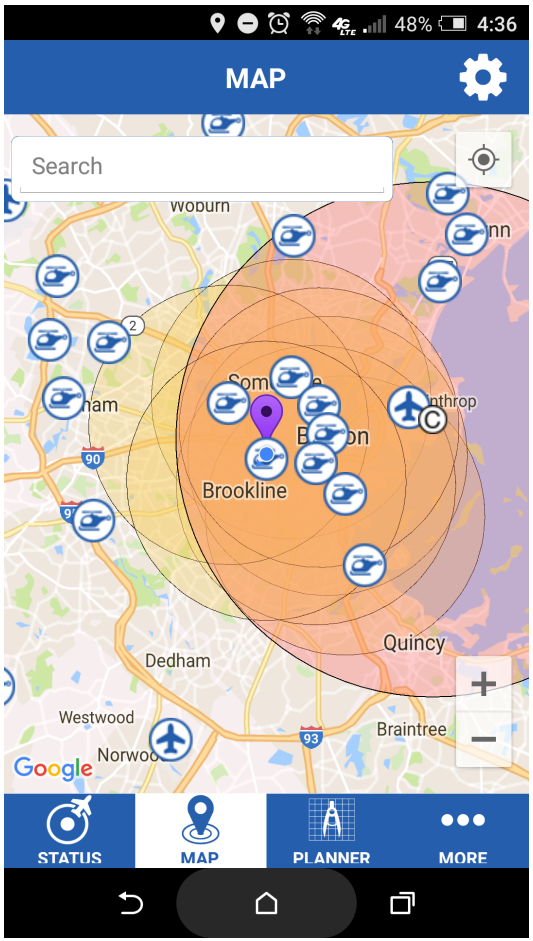
How & where can I fly in Massachusetts

Where to Fly

- FAA has mobile app called B4UFLY to help recreational UAS operators know whether there are any restrictions or requirements where they want to fly
    - *Important note: this app uses statute miles, not nautical miles!*
- For more information, see also https://www.faa.gov/uas/where_to_fly/

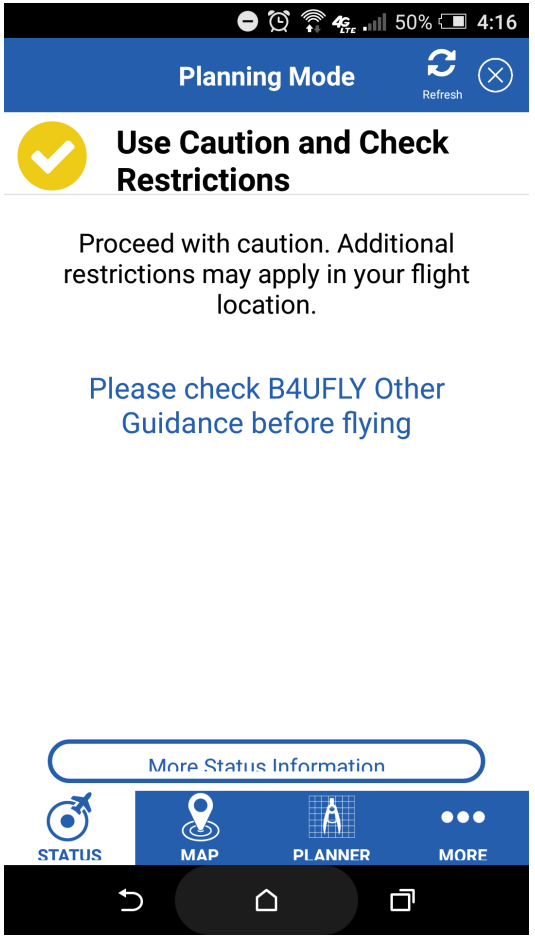
Where to Fly: B4UFly





Where to Fly: B4UFly

- If app's status indicator is red, user is in controlled (Classes B, C, D, or E) airspaces - for example, BU School of Law
- If app's status indicator is yellow, user is in uncontrolled (Class G) airspace - for example, The MIT Dome



How to Notify Airports

- According to FAA, you must contact any airports—including heliports and sea-based airports—**and** air traffic control towers within 5 statute miles of your proposed area of operations
- Also according to FAA, Request a Waiver/Airspace Authorization may only be done so online

How to Notify Airports

- Applicants should submit their waiver requests to FAA as early as possible; processing time depends on complexity of request; however agency strives to respond within **90 days**
- "[A]n airport operator can object to the proposed use of a model aircraft within five miles of an airport if the proposed activity would endanger the safety of the airspace."

How to Notify Airports

- "However, the airport operator cannot prohibit or prevent the model aircraft operator from operating within five miles of the airport."
- Unsafe flying in spite of the objection of an airport operator may be evidence that the operator was endangering the safety of the National Airspace System
  - *And the fines are substantial!*
  - *Considering flight close to Logan?* ***Come to talk to us first!***

Helpful Resources

I have more questions and/or I am curious to learn more

Helpful Resources

- http://www.faa.gov/
- https://www.massport.com/logan-airport/drone-information/
- http://knowbeforeyoufly.org/
- Contact OGC & EHS about MIT's rules
- Come visit us during our MIT office hours!

Thank you!

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