

Drones

For months the conversation was about 333 operations and the time delay getting them. Except in rare cases, that has gone by the wayside with Part 107 certificates. They are not terribly difficult to get; some study and testing is required. See <https://inlocc.webhost.iu.edu/policies/drones.cfm>? for details.

Hobbyists

By our definition (and, we believe, supported by FAA regulations) flying a drone for university operations *is not* hobbyist flying. There is a lack of hobbyist training requirements and we are unable to determine the skill level, maturity and responsibility of people who are hobbyists, therefore, because of safety and privacy concerns, the only area where drones can be flown over IU campus property is at IUB between Campus View and Tulip Tree.

No one is allowed to fly over any IU property without permission. Hobbyists can apply for permission at <https://inlocc.webhost.iu.edu/CAS/UAS/first/index.cfm> . Insurance coverage for the hobbyist is **required** for flying over IU property and we recommend you have coverage for flying anywhere. Don't assume you have coverage under your homeowners policy. You probably don't. Google "hobbyists drones insurance" and "hobbyists drones associations" for information. Insurance may be a benefit of membership in some associations.

Commercial Operators

In general, we don't allow any commercial drone operations over IU property unless they are contracted by IU.¹

1. The department requesting drone operations must request the wing number, a jpeg image of the drone to be used, a copy of the pilot's Part 107 certificate *or* the company's 333 approval, and a certificate of insurance showing the required coverage (see II.11. at https://inlocc.webhost.iu.edu/policies/Drones_NotIU.cfm)
2. The department requesting drone operations must go to <https://inlocc.webhost.iu.edu/CAS/UAS/first/index.cfm>, choose "University Users" and complete the application. Forward the information from the vendor (except the wing number; you enter that in the application) to stephenl@iu.edu
3. The drones approval committee will review the application. You may receive messages from committee members. You will be notified of the decision. We try for a quick turnaround but it's wise to give us a two-weeks window.
4. We are working on a list of approved vendors to simplify this. This document will be edited when that is available.

IU Operators

¹ Contact Eric Rudd ericrudd@indiana.edu about hiring University resources for your drone needs.

Anyone operating a drone as an IU employee is an IU operator.

1. The drone must be purchased through Procurement Services. We are working with some people who acquired their drone in other ways, but this makes the process much harder.
2. Procurement Services will obtain the FAA wing number. This can take a few weeks.
3. The pilot must have a Part 107 certificate² (<https://inlocc.webhost.iu.edu/policies/Drones.cfm>). Mail a copy of their temporary certificate or their permanent certificate to stephen@iu.edu. These certificate have expiration dates. They must have a valid (and not expired) certificate on file with INLOCC to fly.
4. Complete the application.
 - a. As you describe your operations, do so fairly but broadly. Your use will be constrained by what you describe. E.g., if you are using the drone to take pictures of building roofs (a Facilities Services operation) it would be wise to include all campuses in your request *unless* you are certain you will always be limited to one campus.
 - b. Answer the questions completely. Most applications to date have required more input in the images area.
5. When your request is approved and INLOCC has received pilot documentation, INLOCC (kudavis@iu.edu) will arrange your insurance coverage. We will need to know what account to charge for insurance.

Any approval for use may be revoked for cause. This includes expired licenses/certificates.

Pilot ID Cards

Pilots will be issued an ID card from INLOCC. You should carry it with you when flying. This is your proof of approval if questioned by a university official.

Daily Flight Log

Anytime an IU pilot flies the drone *or* a hobbyist or commercial operator flies over IU property, they must complete the daily flight log at <https://inlocc.webhost.iu.edu/CAS/UAS/DailyFlightLog.cfm>. There is a connection button are on the INLOCC home page (<https://inlocc.iu.edu/>) Applications tab to simplify reaching the page.

Classes of Airspace

Before you fly you **MUST** be cognizant of the airspace you will be flying in and the restrictions, if any, in that space.

² We are ignoring flight under a 333 exception and an FAA COA because we believe all flights will be by Part 107 pilots.

An unofficial review can be found at [https://en.wikipedia.org/wiki/Airspace_class_\(United_States\)](https://en.wikipedia.org/wiki/Airspace_class_(United_States)). This is a good page to read because the amount of information is extensive. You should also review https://www.faasafety.gov/gslac/ALC/course_content.aspx?clD=42&slD=505&preview=true. This is a training page but it's an FAA page.

It is incumbent upon the PIC (pilot in command) to know what kind of airspace he or she is about to fly in and whether they need a waiver. **IU does not provide indemnification or insurance if you are fined for violations of FAA regulations.**

See <https://skyvector.com/> or <http://vfrmap.com/> for online charts (see legend below).

Waivers can be requested at https://www.faa.gov/uas/request_waiver/.

A waiver will be required at:

IUB (Class E airspace)

IUPUI (no; Class G airspace)

IUSB (no; Class G airspace)

IUN (no; Class G airspace)

IUK (no; Class G airspace)

IUE (no; Class G airspace)

IUC (Class E airspace)

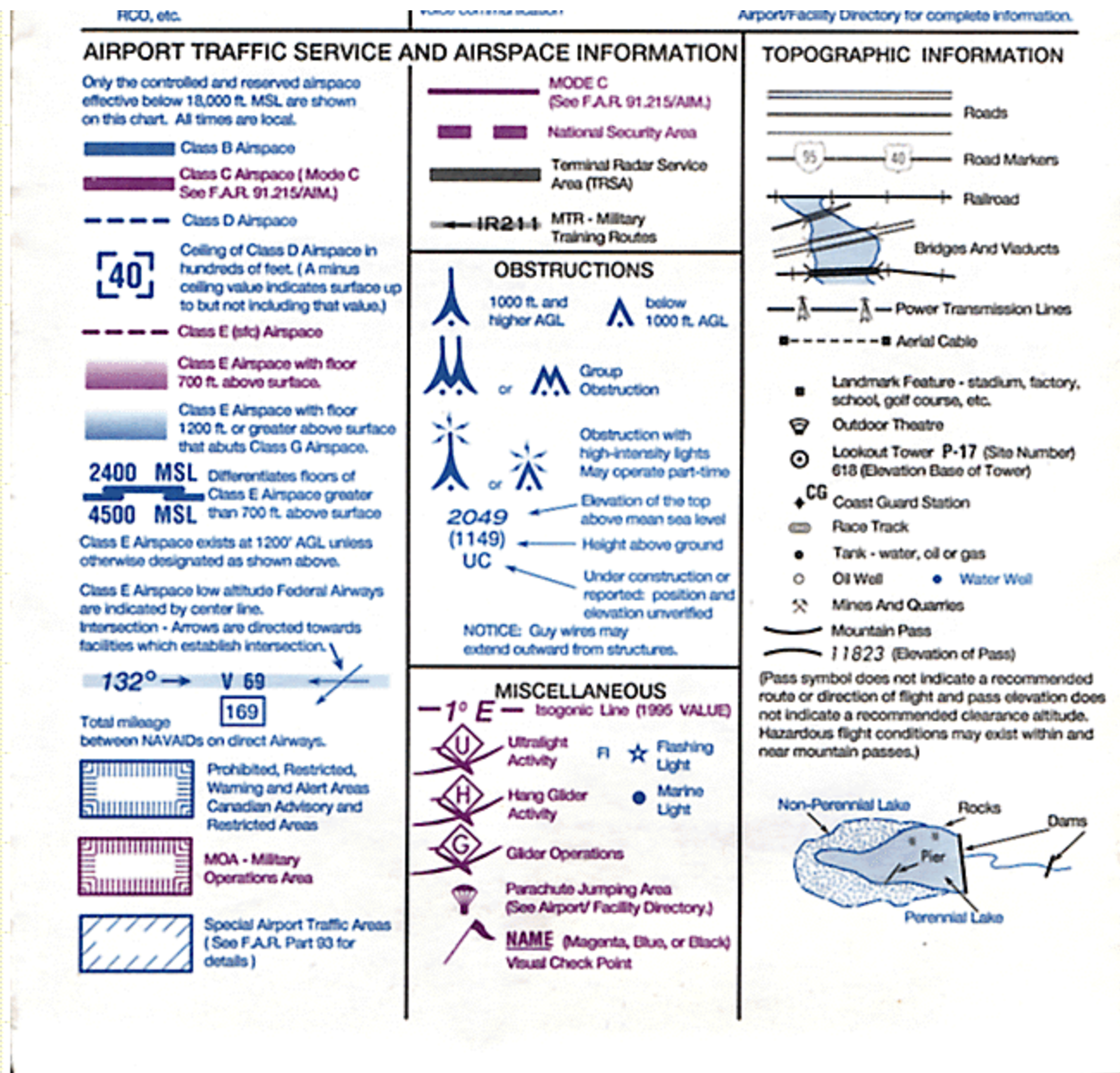
IUS (no; Class G airspace)

Bradford Woods (no; Class G airspace)

Camp Brosius (no; Class G airspace)

Judson Mead Geologic Station (no; Class G airspace)

We have been told by one office of the FAA that waivers are specific to the Part 107 pilot requesting them, i.e., "IU" can't request a waiver for all drone flights in Class E airspace over IUB.



This is the legend for the maps you see at the above URLs. Referring to the map for Bloomington IN, IU's first Part 107 approved pilot, Eric Rudd, says:

Here is a screen grab from a chart I found online (the chart above). If you look at the first column, you see a dashed blue line for Class D airspace. On your online chart (the BMG chart), you will see this circle around BMG at 5 miles. The airspace from the surface to 3300' is controlled in Class D at this airport (the top varies with the airport).

Also, you see a large magenta "haze" circle around BMG. This delineates Class E controlled airspace. If you look at the legend you see this airspace STARTS at 700 AGL (above ground

level) and goes up to 18,000'. However, air traffic control can morph the shape of controlled airspace to accommodate certain types of traffic. If you look at the magenta haze circle, you also see three magenta notches or "keyholes" that cut into the haze circle, delineated by magenta dashes. One of these notches goes off to the north east - directly over the IUB campus. This means, in those three areas, Class E goes to the surface, .not stopping at 700 AGL. It's logical. The airport has instrument approaches for these runways. In bad weather, when a pilot is navigating to take off and land with instruments only ATC needs more complete airspace control along the centerlines of the runways to provide separation from other aircraft, the ground and its obstacles, and the weather.

It's partly this 700' Class E base that allows drone pilots to fly no higher than 400' AGL. We typically would be 300 feet below the lowest point that controlled air traffic would be traveling, coupled with the fact that aircraft are typically required to stay a minimum of 500' above obstacles on the ground. (See where this all intersects??)

400 feet AGL for drones guarantees at least 100 feet of separation from any aircraft typically flying over the ground in almost all circumstances. (There are exceptions, such as military activity, etc.)

Eric tells me getting the waiver is a long process, so start early. You can see Eric's waiver at <https://inlocc.iu.edu/Docs/FAA Form 7711-1 2016-CSA-145-P-107 UI BMG.pdf> .

Other helpful sites are [Fact Sheet – Small Unmanned Aircraft Regulations \(Part 107\)](#) and [Unmanned Aircraft Systems \(UAS\) Frequently Asked Questions/Help](#).