

Balloon Mapping Regulations

United States

Currently, this page describes the regulatory situation in the United States. If you have information on other legal systems, please post them below!

Disclaimer

Read [Federal Aviation Regulation 101](#) and learn the parts about balloons. All summaries and guidelines provided are not a substitute for direct interpretation and legal advice. A lawyer has not reviewed these suggestions.

Unregulated Balloons

We try to design our equipment to be non-hazardous, but also small and light enough to be exempt from regulation. FAA guidelines provide exemptions for small balloons:

101.1a (1) Except as provided for in §101.7, any balloon that is moored to the surface of the earth or an object thereon and that has a diameter of more than 6 feet or a gas capacity of more than 115 cubic feet.

(2) Except as provided for in §101.7, any kite that weighs more than 5 pounds and is intended to be flown at the end of a rope or cable.”

Our size limit is therefore 6ft wide or 115 cubic feet of gas. At sea level, helium provides 7.5lbs of lift for 115cu ft (based on 65.5/1000 cu ft, from pg 68, “A History of Flying” C.H. Gibbs-Smith), 5 lbs is therefore a realistic payload limit for a moored balloon as well. Most of our camera rigs weigh less than 300 grams or 2/3 of a pound, but the string and the balloon itself add to that, though they are not counted as part of the payload.

Also see [Near Space by Paul Verhage](#), which gives good design guidelines for high altitude balloons (which could be any balloon that breaks its moorings) and a summary of FAA regulations as well.

Untethered/free balloons

According to the subsequent section of the regulation, **unmoored, or free balloons**, are regulated if they exceed the following measurements:

(i) Carries a payload package that weighs more than four pounds and has a weight/size ratio of more than three ounces per square inch on any surface of the package, determined by dividing the total weight in ounces of the payload package by the area in square inches of its smallest surface;

(ii) Carries a payload package that weighs more than six pounds;

(iii) Carries a payload, of two or more packages, that weighs more than 12 pounds; or

(iv) Uses a rope or other device for suspension of the payload that requires an impact force of more than 50 pounds to separate the suspended payload from the balloon.

Flying within 5 miles of an airport

When you are within 5 miles of an airport, you need to file a Notice to Airmen (NOTAM), for instance, fill out this [PDF request for FAA Form 7711-2 -- a waiver for moored balloons and kites](#). This requires attaching a marked-up 7.5 series USGS Topographic Quadrangle Map. Then call your [local Flight Standards District Office](#) to make contact with someone to email it to for approval.

Once you have this waiver, call the NOTAM hotline: 877-487-6867. Start by saying your state's name and a person will eventually come on the line. Ask them if you need to file a NOTAM, and they will ask you 1) the radial distance from the airport; 2) the height you will be flying (anything below 500 is legal, rather safer to top out at 300); 3) what times you will be flying.

For other information, follow this link to [find out how to contact your local Flight Standards District Office \(FSDO\)](#)

Adam Griffith, Liz Barry, and Gina Worth and the Dredge Research Collaborative [have successfully gone through this process.](#)

It is also useful to get a Sectional Chart of the local airspace. There is an online map of sectional charts at [Skyvector.com](#). Look out for the take off and landing corridors. [This how-to video is an excellent intro to the charts.](#)

Your right to take photographs in public spaces

Read the ACLU's page on [photographer's rights](#) for a comprehensive discussion of your right to take photos in public places.

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