

## UAS in the USA: An Overview of the FAA's New Drone Rules

By UAS and Regulatory Attorney Stephen Hartzell

On June 21, 2016, the FAA announced its new rules to govern non-hobbyist small UAS (“sUAS” or “drones”) operations. Gluttons for punishment can read the entire [624-page FAA document here](#); others can read a summary of the highlights in this memorandum. The regulatory regime has been described by the FAA as a “very flexible framework” that will “accommodate future innovation in the industry.” While only time will tell how flexible the rules prove to be, stakeholders generally agree that the new rules are an important—albeit intermediary—step forward.

The FAA’s announcement is welcome news for all types of businesses who have been eager to incorporate drones into their business operations for data collection, photography, videography, inspections, monitoring, or any other viable purpose. Until the new rules become effective in late August, the FAA’s current prohibition on commercial sUAS operations remains in effect, except for operators that have obtained a Section 333 Exemption from the FAA.

The material below is intended to summarize the principal highlights of the new rules and identify a number of requirements and restrictions that businesses must be aware of when operating drones. This memorandum is not legal advice and cannot be relied upon as legal advice. The information in this memorandum is no substitute for reviewing and understanding the Part 107 rules nor for consulting with legal counsel. If you have questions about this memorandum or about UAS issues in general, please feel free to contact attorney Stephen Hartzell at Brooks Pierce at [shartzell@brookspierce.com](mailto:shartzell@brookspierce.com) or 919.839.0300.

*What Do All the Abbreviations Mean?* This memorandum uses a few abbreviations and shorthand references, the meaning of which may not be obvious to all readers. The term “drone” is used interchangeably with “UAS,” which means “unmanned aircraft system.” The term “sUAS” refers to “small” UAS, which are drones that weigh 55 pounds or less. The term “Part 107” refers to the new set of rules issued by the FAA to govern sUAS. The concept of “visual line of sight” is important under the new rules, and it is referred to as “VLOS.” A few other abbreviations are defined in the text below.

*When Will the Rules Go into Effect?* Part 107 will become effective August 29, 2016. (It will become effective 60 days after it is published in the Federal Register. It is scheduled to be published in the Federal Register on June 28. Sixty days after June 28 is August 27, which falls on a Saturday, making the next business day the effective date.)

*Has the FAA Provided Guidance About the New Rules or Am I Stuck with Just this Memorandum?* The FAA has a deep interest in ensuring that the public and UAS industry

stakeholders understand and comply with the Part 107 rules, which is why the FAA has already published some guidance. At the same time the FAA released Part 107, it released an [Advisory Circular](#) (AC 107-2) to provide guidance relating to sUAS operations. **Any person or entity using sUAS for any non-hobbyist purpose should carefully review AC 107-2 and maintain a copy for ongoing and future reference.** Of course, familiarity with the Advisory Circular is no substitute for reviewing and knowing the regulations set forth in Part 107 and consulting with legal counsel. Additional FAA [guidance is here](#).

*Where Can I Get a Copy of the Part 107 Rules?* A copy of Part 107, as published by the FAA on June 21, is [attached to this memorandum](#).

*What Are the New Operational Requirements and Restrictions?* In order to become familiar with all of the new requirements and restrictions, you should review [Part 107 in its entirety](#) as well as the [Advisory Circular](#) referenced above. Among the various requirements and limitations that the FAA has adopted in Part 107 for non-hobbyist civil (i.e., commercial) sUAS operations are the following (this list is not an exhaustive list!):

- Small unmanned aircraft must weigh less than 55 pounds (including payload)
- Only visual line-of-sight operations are allowed; i.e., the small unmanned aircraft must remain within VLOS of the operator, and must remain close enough for remote pilot in command to be capable of seeing aircraft with no visual aid other than glasses or contact lenses (binoculars are an impermissible visual aid for this purpose, and so-called “first person view” is not a substitute for VLOS)
- Only a remote pilot in command (“RPIC”), or a person under “direct supervision” of an RPIC, may operate sUAS
- Among other things, each RPIC must:
  - Pass an initial aeronautical knowledge test at an approved testing center and a recurrent test every 24 months;
  - Be vetted by TSA;
  - Obtain a remote pilot airman certificate with small UAS rating;
  - Be at least 16 years old;
  - Be able to read, speak, and understand the English language. (There is an exception for people who are unable to meet one of the English language requirements due to a medical condition, which the FAA will handle on a case-by-case basis.);
  - Not know or have reason to know that s/he has a physical or mental condition that would interfere with the safe operation of sUAS;
  - Ensure the sUAS is registered;
  - Make the sUAS and certain records available to the FAA upon request;
  - Report certain accidents to the FAA;
  - Conduct preflight inspections to ensure the sUAS is safe for operation and has enough power to operate for the intended operational time.

- Operations may not occur over any persons not directly involved in the operation
- Operations must occur during daylight hours only (or civil twilight with appropriate anti-collision lighting visible for at least 3 statute miles)
- Small unmanned aircraft are required to yield right-of-way to other aircraft
- Flight speed cannot exceed 100 mph
- Operations cannot exceed altitudes of (i) 400 feet AGL or (ii) 400 feet above a structure
- Operations are prohibited if conditions do not allow minimum weather visibility of three miles from the control station
- Careless and reckless operations prohibited
- Limitations in airspace classes:
  - No sUAS operations in Class A (18,000 feet & above) airspace
  - sUAS operations in Class B, C, D and E airspace only with ATC (air traffic control) permission
  - sUAS operations in Class G airspace allowed without ATC permission

*How Do I Obtain a Remote Pilot Certificate with Small UAS Rating?* Part 107 creates a new airman certificate for sUAS operators. To obtain a Remote Pilot Certificate with small UAS rating, the applicant will have to take and pass an aeronautical knowledge test (“AKT”), unless the applicant already holds an airman certificate to pilot manned aircraft and has completed a flight review within the previous 24 months, in which case the applicant will only need to take an online training course. Upon successful completion of either the AKT or online training (as applicable), the applicant must submit an application for the Remote Pilot Certificate either on paper or using the [FAA’s online IACRA system](#). (The FAA will then forward the applicant’s information to the TSA (Transportation Security Administration) for security vetting to determine whether the applicant poses a security risk.) Persons holding a Remote Pilot Certificate will have to take a knowledge test recurrently every two years, and they will also become part of the FAA’s [online searchable database](#).

*How Do I Take the AKT?* To take and pass an AKT, a person will have to apply to and take the test at an FAA-approved [Knowledge Testing Center](#) and obtain a report showing that s/he passed the test. The knowledge necessary for the AKT may be acquired through self-study, taking an online or in-person training course, or some combination of these approaches, and it will cover the following topics:

- FAA regulations applicable to sUAS
- Airspace classifications and operating requirements, and flight restrictions affecting sUAS operations
- Aviation weather sources and effects of weather on drone performance
- sUAS loading and performance
- Emergency procedures
- Crew resource management

- Determining the performance of drones
- Physiological effects of drugs and alcohol
- Aeronautical decision-making and judgment
- Airport operations
- Radio communication procedures
- Maintenance and inspection

Helpful material is available in the [Small Unmanned Aircraft Systems Airman Certification Standard](#) published by the FAA (as of the date of this memorandum, the Standard has not been finalized by the FAA and is available only in [draft form](#)). After passing the AKT, the person will then apply for the certificate as noted above. (The list of [Knowledge Testing Centers hyperlinked here](#) was available as of June 22, 2016, and was last updated December 2015.)

*What Happens to Section 333 Exemptions?* Many of the new requirements are similar to the limitations, requirements, and restrictions that have been imposed by the FAA in its 5,000+ Section 333 Exemption decisions. In fact, some of the new rules are *less restrictive* and *more flexible* than those imposed on operators in certain Section 333 Exemption decisions. After the new rules become effective in August, Section 333 holders may elect to continue operating under Section 333 or may simply operate under the new rules. If your Section 333 Exemption allows for operations that are not allowed under Part 107, then you should continue to operate to that extent under your 333 Exemption, and pay attention to its expiration date so that you can file to extend or renew it when the time comes.

Many pending petitions request authority to operate drones in a manner that is clearly and entirely governed by Part 107. On the other hand, a number of pending petitions seek operating parameters that are not authorized under Part 107 (e.g., night time operations, flights over people, weight limits in excess of 55 pounds, beyond VLOS, etc.). We have inquired with the FAA's UAS Integration Office as to how they plan to proceed with the thousands of pending petitions. Below is what the FAA has informally communicated.

<b>Operations Requested in Your 333 Petition</b>	<b>FAA Action Item</b>	<b>Your Action Item</b>
If the operations you requested in your 333 petition may be conducted under Part 107 . . .	. . . the FAA will close your 333 docket and take no further action. The FAA will not communicate with you about this.	Review Part 107 (and FAA guidance) carefully to ensure that your proposed operations will fit neatly within Part 107’s requirements and restrictions. If you think the FAA erred in closing your docket, contact the FAA at <a href="mailto:333exemptions@faa.gov">333exemptions@faa.gov</a> .
If the operations you requested in your 333 petition require a Part 107 waiver . . .	. . . the FAA will contact you within 60 days. The FAA will close your 333 docket and consider your petition as a Part 107 waiver application.	If you think the operations proposed in your 333 petition require a waiver and you do not hear from the FAA within 60 days, you should contact the FAA at <a href="mailto:9-AFS-800-part107waivers@faa.gov">9-AFS-800-part107waivers@faa.gov</a> .
If the operations you requested in your 333 petition cannot be conducted under Part 107 and don’t qualify for a Part 107 waiver . . .	. . . the FAA will contact you within 60 days and will continue processing your 333 petition.	If you think the operations proposed in your 333 petition cannot be conducted under Part 107 or with a Part 107 waiver, and you do not hear from the FAA within 60 days, you should contact the FAA at <a href="mailto:333exemptions@faa.gov">333exemptions@faa.gov</a> .

*What If I Want to Fly at Variance from the Part 107 Requirements?* Part 107 specifically contemplates applications for a “certificate of waiver” (“COW”) for certain of Part 107’s regulations. (Not all of the new rules are waivable under the COW process, but, as noted above, the Section 333 process remains a viable option for those circumstances.) A COW will allow sUAS operations to deviate from certain rule provisions if the FAA is convinced by the applicant that the proposed operation can be conducted safely. To obtain a COW, an applicant must submit a request containing a complete description of the proposed operation and a justification (including supporting data and documentation as necessary) to establish that the proposed operation can safely be conducted under the requested COW. Consultation with counsel may be warranted. First, as noted above, the Section 333 exemption process will remain a viable option.

*Do I Have to Demonstrate to the FAA that I Know How to Operate My Drone?* No. The FAA specifically declined to adopt any flight proficiency testing or aeronautical experience

requirement. The FAA reserves the right to require flight proficiency in the course of considering Part 107 waiver requests.

*Do I Have to Register My Drone with the FAA?* Yes. Visit [this webpage](#) for instruction. In addition, some states, including [North Carolina](#), have their own registration or permitting requirements.

*Do I Have to Take any Special Steps to Make Sure My Drone Is Safe to Fly?* The RPIC is responsible for ensuring the drone is safe before flying, but small unmanned aircraft do not have to go through an FAA certification process or comply with “airworthiness” standards. The RPIC is required to perform a preflight visual and operational check of the sUAS to ensure that systems are functioning properly. The preflight check must include a check of the communications link between the control station and the aircraft.

*Are There Any Reporting or Record Keeping Requirements?* Yes.

- You must register your drone with the FAA.
- The RPIC must make the sUAS available to the FAA for inspection or testing on request and must provide any associated records required to be kept under the rule.
- You must report to the FAA within 10 days any operation that results in serious injury, loss of consciousness, or property damage (to property other than the UAS) of at least \$500.

*How Do I Know Whether I Am Flying in Class G Airspace or Whether I Need to Obtain Permission from ATC Prior to Flying?* Questions like this are precisely why the aeronautical knowledge test is critical to a safe national airspace system and sUAS environment. Study hard for your knowledge test!

*Can I Use My Drone for Deliveries?* Perhaps surprisingly, the answer is yes . . . but only in limited circumstances. Part 107 allows drones to be used for delivery purposes, but with some important caveats that go above and beyond other Part 107 drone operations. First, the package or item must be securely fastened to the drone. Second, the payload cannot adversely affect the flight or control of the drone. Third, the total weight of the drone and package together cannot exceed 55 pounds. Fourth, the drone must remain within view of the operator (and it cannot be operated from a moving vehicle). Fifth, drones may not transport hazardous materials. Sixth, deliveries can be performed for compensation only if the flight will not cross a state border. Between the VLOS restriction and the prohibition on flying over people, drone deliveries on a widespread scale are unobtainable under Part 107, but certain limited deliveries are, nevertheless, possible.

*If Drones Can't Be Flown over Non-Participating People, What Happened to the “Micro” Class of UAS that the FAA Proposed?* In its initial version of Part 107, the FAA proposed to create a “micro” UAS classification that would allow operations of certain “micro” drone—weighing no more than 4.4 pounds and constructed of “frangible” material—to fly over



non-participating people in uncontrolled (Class G) airspace. After receiving recommendations in April 2016 from a specially-convened committee of UAS stakeholders, the FAA decided that Part 107 would not permit flights over people, and that the agency would soon launch a new rule making proceeding for further consideration of the issue. To be clear: it is permissible to operate drones that weigh 4.4 pounds or less, so long as operations are conducted in compliance with Part 107, including the prohibition on flying over people not involved in the drone operation.

*Does Part 107 Address Privacy?* In adopting the new rules, the FAA expressly considered privacy issues but declined to adopt any privacy-related rules. Nonetheless, a series of [multi-stakeholder meetings](#) overseen by NTIA has developed best practices for privacy, accountability, and transparency issues regarding commercial and private UAS use. On May 18, 2016, a diverse group of shareholders involved in the process issued a [“best practices” document](#). In addition, states and localities may have privacy-related laws that have implications for drone use. The FAA is also planning to engage in educational outreach relating to privacy as part of the UAS registration process, via the B4UFLY mobile app, and during the Remote Pilot certification process.

*Can States and Localities Still Regulate Drone Use?* Yes. In issuing the Part 107 rules, the FAA specifically declined to preempt state and local laws and regulations relating to drones. While the FAA acknowledged the position of some stakeholders that “conflicting rules may lead to confusion, litigation costs, increased operational limitations, burden on UAS users, and delay in the adoption of UAS technology,” the FAA determined that preemption for sUAS issues is better left to a “case-specific analysis.” The FAA went on to observe that “certain legal aspects concerning small UAS may be best addressed at the State or local level” and cited privacy as one such issue. Thus, as state and local jurisdictions continue to contemplate—and in some cases enact—legislation to govern the use of sUAS by individuals and commercial entities, drone operators must remain mindful of such additional regulations. Businesses that operate drones in multiple states have a particular challenge to keep up with state and local law developments, and consultation with legal counsel is advisable. A starting point to track state drone law developments [is available here](#). Meanwhile, Congress has not yet settled on how to address the regulatory “patchwork quilt” issue going-forward. The federal Senate and House have been considering FAA legislation for several months, and the two chambers have, so far, failed to agree on a final bill. A Senate bill contains language that would prohibit states and localities from regulating drones, while the House has not agreed to that approach. Thus, there may be more to come on this issue.

*Do I Have to Have Liability Insurance in Order to Fly a Drone for Commercial Purposes?* Part 107 does not mandate that UAS operators carry insurance. In fact, the FAA said that “it does have jurisdiction to require small UAS operations subject to this rule to obtain insurance coverage.” Nevertheless, as with most business operations, it is prudent to carry liability insurance for personal and property damage and tort-based causes of action (such as invasion of privacy). Businesses using drones and individuals using drones for non-hobbyist purposes would be well-advised to consult with one or more insurance carriers to discuss coverage and obtain competitive quotes. It is also possible that states have, or will adopt, laws requiring UAS operators to carry certain minimum levels of liability insurance.

*Does My Business Need to Adopt Any Drone Policies?* Commercial drone operators are required to comply with the rules established in Part 107, and Part 107 does not require that drone operators adopt any drone policies. That said, it would be prudent for businesses that engage in drone operations to consider policies to govern their operations and ensure that their employees and contractors adhere to the standard of conduct desired by the business. In addition to fundamental compliance with Part 107, businesses may wish to have a drone policy that covers topics such as UAS security (including data gathered by the drone), privacy, flight operations, insurance, types and standards of service, training, inspections and maintenance, device replacement, and the like.

*A Special Note About Agricultural Operations.* Through other rules (Part 137), the FAA imposes certain requirements on persons engaging in “agricultural aircraft operations,” a phrase which generally includes the dispensing of substances for agricultural purposes. In adopting Part 107, the FAA made clear that use of sUAS for purposes that constitute “agricultural aircraft operations” must also comply with the FAA’s Part 137 regulations governing agricultural aircraft operations. The FAA also made clear that certain sUAS uses relating to agriculture—including but not limited to crop monitoring and photography—do not constitute “agricultural aircraft operations” and, thus, do not implicate Part 137.

*Is this It? What About Flights Beyond VLOS, and Nighttime Operations, and Flying over People, and . . . ?* The FAA views sUAS operations as the lowest risk of all UAS operations, and Part 107 is only the first step of UAS integration into the national airspace system (“NAS”). Further rule making proceedings and regulations will be coming down the pike. In adopting Part 107, the FAA pointed out that the “immediate integration of the lowest-risk small UAS operations into the NAS would provide the FAA with additional operational experience and data that could be used to assist with the integration of higher-risk operations.” There is definitely more to come from a rule making perspective and, as noted above, the FAA will contemplate waiver requests for certain of Part 107’s operational limitations.

*What About Hobbyist Drone Use?* While Part 107 does not impose any new restrictions or limitations on hobbyist drone use, the FAA did adopt a new rule (added to Part 101 of the FAA’s regulations) to reflect the FAA’s statutory ability to pursue enforcement action against hobbyists whose operations “endanger the safety of the national airspace system.” Moreover, in adopting Part 107, the FAA expressly reinforced the notion that recreational drone use qualifies as “hobbyist” or “modeler” operation only if it adheres to *all elements* of the modeler guidelines, including (but not limited to) the long-standing requirement that the drone be “operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization.” On that point, the FAA observed that hobbyists who do not wish to comply with a community-based set of safety guidelines and operate within the programming of a nationwide community-based organization can, instead, conduct their operations pursuant to the requirements and restrictions set forth in Part 107. (The FAA currently has another proceeding underway in which it is considering issuing interpretive guidance relating



to the hobbyist model aircraft guidelines, which means that there may be some additional clarity provided for hobbyist operations in the future.)

*More to Come!* If you've made it to this point in the memorandum, thank you for reading. It should be obvious that there will be much more to come on UAS issues from the FAA, from states and localities, from stakeholders, and from courts and other regulators. Stay tuned and fly safely!

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A variety of enterprises and industries are chomping at the bit to incorporate UAS into their commercial business models and operations. Stephen advises clients on the use of UAS continues to closely monitor legal developments at the state and federal level. As the law develops, he will advise clients on compliance with FAA and state operational and licensing regulations, help businesses navigate contractual and intellectual property issues, and provide counsel on drone-related privacy issues.

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2000 Renaissance Plaza  
230 North Elm Street  
Greensboro, NC 27401  
(336) 373-8850

1700 Wells Fargo Capitol Center  
150 Fayetteville Street  
Raleigh, NC 27601  
(919) 839-0300

115 North Third Street  
Suite 301  
Wilmington, NC 28401  
(910) 444-2000

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Text of Part 107  
(current as of June 21, 2016)

## PART 107—SMALL UNMANNED AIRCRAFT SYSTEMS

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- § 107.5 Falsification, reproduction or alteration.
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### *Subpart D—Waivers*

- § 107.200 Waiver policy and requirements.
- § 107.205 List of regulations subject to waiver.

## PART 107—SMALL UNMANNED AIRCRAFT SYSTEMS

### Subpart A—General

#### § 107.1 Applicability.

(a) Except as provided in paragraph (b) of this section, this part applies to the registration, airman certification, and operation of civil small unmanned aircraft systems within the United States.

(b) This part does not apply to the following:

- (1) Air carrier operations;
- (2) Any aircraft subject to the provisions of part 101 of this chapter; or
- (3) Any operation that a remote pilot in command elects to conduct pursuant to an exemption issued under section 333 of Public Law 112-95, unless otherwise specified in the exemption.

#### § 107.3 Definitions.

The following definitions apply to this part. If there is a conflict between the definitions of this part and definitions specified in § 1.1 of this chapter, the definitions in this part control for purposes of this part:

Control station means an interface used by the remote pilot to control the flight path of the small unmanned aircraft.

Corrective lenses means spectacles or contact lenses.

Small unmanned aircraft means an unmanned aircraft weighing less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft.

Small unmanned aircraft system (small UAS) means a small unmanned aircraft and its associated elements (including communication links and the components that control the small unmanned aircraft) that are required for the safe and efficient operation of the small unmanned aircraft in the national airspace system.

Unmanned aircraft means an aircraft operated without the possibility of direct human intervention from within or on the aircraft.

Visual observer means a person who is designated by the remote pilot in command to assist the remote pilot in command and the person manipulating the flight controls of the small UAS to see and avoid other air traffic or objects aloft or on the ground.

#### § 107.5 Falsification, reproduction or alteration.

(a) No person may make or cause to be made—

- (1) Any fraudulent or intentionally false record or report that is required to be made, kept, or used to show compliance with any requirement under this part.
- (2) Any reproduction or alteration, for fraudulent purpose, of any certificate, rating, authorization, record or report under this part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for any of the following:

- (1) Denial of an application for a remote pilot certificate or a certificate of waiver,
- (2) Suspension or revocation of any certificate or waiver issued by the Administrator under this part and held by that person; or
- (3) A civil penalty.

## PART 107—SMALL UNMANNED AIRCRAFT SYSTEMS

### § 107.7 Inspection, testing, and demonstration of compliance.

(a) A remote pilot in command, owner, or person manipulating the flight controls of a small unmanned aircraft system must, upon request, make available to the Administrator:

- (1) The remote pilot certificate with a small UAS rating; and
- (2) Any other document, record, or report required to be kept under the regulations of this chapter.

(b) The remote pilot in command, visual observer, owner, operator, or person manipulating the flight controls of a small unmanned aircraft system must, upon request, allow the Administrator to make any test or inspection of the small unmanned aircraft system, the remote pilot in command, the person manipulating the flight controls of a small unmanned aircraft system, and, if applicable, the visual observer to determine compliance with this part.

### § 107.9 Accident reporting.

No later than 10 calendar days after an operation that meets the criteria of either paragraph (a) or (b) of this section, a remote pilot in command must report to the FAA, in a manner acceptable to the Administrator, any operation of the small unmanned aircraft involving at least:

- (a) Serious injury to any person or any loss of consciousness; or
- (b) Damage to any property, other than the small unmanned aircraft, unless one of the following conditions is satisfied:
  - (1) The cost of repair (including materials and labor) does not exceed \$500; or
  - (2) The fair market value of the property does not exceed \$500 in the event of total loss.

## Subpart B—Operating Rules

### § 107.11 Applicability.

This subpart applies to the operation of all civil small unmanned aircraft systems subject to this part.

### § 107.12 Requirement for a remote pilot certificate with a small UAS rating.

(a) Except as provided in paragraph (c) of this section, no person may manipulate the flight controls of a small unmanned aircraft system unless:

- (1) That person has a remote pilot certificate with a small UAS rating issued pursuant to Subpart C of this part and satisfies the requirements of § 107.65; or
- (2) That person is under the direct supervision of a remote pilot in command and the remote pilot in command has the ability to immediately take direct control of the flight of the small unmanned aircraft.

(b) Except as provided in paragraph (c) of this section, no person may act as a remote pilot in command unless that person has a remote pilot certificate with a small UAS rating issued pursuant to Subpart C of this part and satisfies the requirements of § 107.65.

(c) The Administrator may, consistent with international standards, authorize an airman to operate a civil foreign-registered small unmanned aircraft without an FAA-issued remote pilot certificate with a small UAS rating.

## **PART 107–SMALL UNMANNED AIRCRAFT SYSTEMS**

### **§ 107.13 Registration.**

A person operating a civil small unmanned aircraft system for purposes of flight must comply with the provisions of § 91.203(a)(2).

### **§ 107.15 Condition for safe operation.**

(a) No person may operate a civil small unmanned aircraft system unless it is in a condition for safe operation. Prior to each flight, the remote pilot in command must check the small unmanned aircraft system to determine whether it is in a condition for safe operation.

(b) No person may continue flight of the small unmanned aircraft when he or she knows or has reason to know that the small unmanned aircraft system is no longer in a condition for safe operation.

### **§ 107.17 Medical condition.**

No person may manipulate the flight controls of a small unmanned aircraft system or act as a remote pilot in command, visual observer, or direct participant in the operation of the small unmanned aircraft if he or she knows or has reason to know that he or she has a physical or mental condition that would interfere with the safe operation of the small unmanned aircraft system.

### **§ 107.19 Remote pilot in command.**

(a) A remote pilot in command must be designated before or during the flight of the small unmanned aircraft.

(b) The remote pilot in command is directly responsible for and is the final authority as to the operation of the small unmanned aircraft system.

(c) The remote pilot in command must ensure that the small unmanned aircraft will pose no undue hazard to other people, other aircraft, or other property in the event of a loss of control of the aircraft for any reason.

(d) The remote pilot in command must ensure that the small UAS operation complies with all applicable regulations of this chapter.

(e) The remote pilot in command must have the ability to direct the small unmanned aircraft to ensure compliance with the applicable provisions of this chapter.

### **§ 107.21 In-flight emergency.**

(a) In an in-flight emergency requiring immediate action, the remote pilot in command may deviate from any rule of this part to the extent necessary to meet that emergency.

(b) Each remote pilot in command who deviates from a rule under paragraph (a) of this section must, upon request of the Administrator, send a written report of that deviation to the Administrator.

### **§ 107.23 Hazardous operation.**

No person may:

(a) Operate a small unmanned aircraft system in a careless or reckless manner so as to endanger the life or property of another; or

(b) Allow an object to be dropped from a small unmanned aircraft in a manner that creates an undue hazard to persons or property.



## PART 107–SMALL UNMANNED AIRCRAFT SYSTEMS

### § 107.25 Operation from a moving vehicle or aircraft.

No person may operate a small unmanned aircraft system -

(a) From a moving aircraft; or

(b) From a moving land or water-borne vehicle unless the small unmanned aircraft is flown over a sparsely populated area and is not transporting another person's property for compensation or hire.

### § 107.27 Alcohol or drugs.

A person manipulating the flight controls of a small unmanned aircraft system or acting as a remote pilot in command or visual observer must comply with the provisions of §§ 91.17 and 91.19 of this chapter.

### § 107.29 Daylight operation.

(a) No person may operate a small unmanned aircraft system during night.

(b) No person may operate a small unmanned aircraft system during periods of civil twilight unless the small unmanned aircraft has lighted anti-collision lighting visible for at least 3 statute miles. The remote pilot in command may reduce the intensity of the anti-collision lighting if he or she determines that, because of operating conditions, it would be in the interest of safety to do so.

(c) For purposes of subsection (b) of this section, civil twilight refers to the following:

(1) Except for Alaska, a period of time that begins 30 minutes before official sunrise and ends at official sunrise;

(2) Except for Alaska, a period of time that begins at official sunset and ends 30 minutes after official sunset; and

(3) In Alaska, the period of civil twilight as defined in the Air Almanac.

### § 107.31 Visual line of sight aircraft operation.

(a) With vision that is unaided by any device other than corrective lenses, the remote pilot in command, the visual observer (if one is used), and the person manipulating the flight control of the small unmanned aircraft system must be able to see the unmanned aircraft throughout the entire flight in order to:

(1) Know the unmanned aircraft's location;

(2) Determine the unmanned aircraft's attitude, altitude, and direction of flight;

(3) Observe the airspace for other air traffic or hazards; and

(4) Determine that the unmanned aircraft does not endanger the life or property of another.

(b) Throughout the entire flight of the small unmanned aircraft, the ability described in subsection (a) of this section must be exercised by either:

(1) The remote pilot in command and the person manipulating the flight controls of the small unmanned aircraft system; or

(2) A visual observer.

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### **§ 107.33 Visual observer.**

If a visual observer is used during the aircraft operation, all of the following requirements must be met:

(a) The remote pilot in command, the person manipulating the flight controls of the small unmanned aircraft system, and the visual observer must maintain effective communication with each other at all times.

(b) The remote pilot in command must ensure that the visual observer is able to see the unmanned aircraft in the manner specified in § 107.31.

(c) The remote pilot in command, the person manipulating the flight controls of the small unmanned aircraft system, and the visual observer must coordinate to do the following:

(1) Scan the airspace where the small unmanned aircraft is operating for any potential collision hazard; and

(2) Maintain awareness of the position of the small unmanned aircraft through direct visual observation.

### **§ 107.35 Operation of multiple small unmanned aircraft.**

A person may not operate or act as a remote pilot in command or visual observer in the operation of more than one unmanned aircraft at the same time.

### **§ 107.36 Carriage of hazardous material.**

A small unmanned aircraft may not carry hazardous material. For purposes of this section, the term hazardous material is defined in 49 CFR § 171.8.

### **§ 107.37 Operation near aircraft; right-of-way rules.**

(a) Each small unmanned aircraft must yield the right of way to all aircraft, airborne vehicles, and launch and reentry vehicles. Yielding the right of way means that the small unmanned aircraft must give way to the aircraft or vehicle and may not pass over, under, or ahead of it unless well clear.

(b) No person may operate a small unmanned aircraft so close to another aircraft as to create a collision hazard.

(c)

### **§ 107.39 Operation over human beings.**

No person may operate a small unmanned aircraft over a human being unless that human being is:

(a) Directly participating in the operation of the small unmanned aircraft; or

(b) Located under a covered structure or inside a stationary vehicle that can provide reasonable protection from a falling small unmanned aircraft.

(c)

### **§ 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).

### **§ 107.43 Operation in the vicinity of airports.**

No person may operate a small unmanned aircraft in a manner that interferes with operations and traffic patterns at any airport, heliport, or seaplane base.

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### § 107.45 Operation in prohibited or restricted areas.

No person may operate a small unmanned aircraft in prohibited or restricted areas unless that person has permission from the using or controlling agency, as appropriate.

### § 107.47 Flight restrictions in the proximity of certain areas designated by notice to airmen.

A person acting as a remote pilot in command must comply with the provisions of §§ 91.137 through 91.145 and 99.7 of this chapter.

### § 107.49 Preflight familiarization, inspection, and actions for aircraft operation.

Prior to flight, the remote pilot in command must:

(a) Assess the operating environment, considering risks to persons and property in the immediate vicinity both on the surface and in the air. This assessment must include:

- (1) Local weather conditions;
- (2) Local airspace and any flight restrictions;
- (3) The location of persons and property on the surface; and
- (4) Other ground hazards.

(b) Ensure that all persons directly participating in the small unmanned aircraft operation are informed about the operating conditions, emergency procedures, contingency procedures, roles and responsibilities, and potential hazards;

(c) Ensure that all control links between ground control station and the small unmanned aircraft are working properly;

(d) If the small unmanned aircraft is powered, ensure that there is enough available power for the small unmanned aircraft system to operate for the intended operational time; and

(e) Ensure that any object attached or carried by the small unmanned aircraft is secure and does not adversely affect the flight characteristics or controllability of the aircraft.

### § 107.51 Operating limitations for small unmanned aircraft.

A remote pilot in command and the person manipulating the flight controls of the small unmanned aircraft system must comply with all of the following operating limitations when operating a small unmanned aircraft system:

(a) The groundspeed of the small unmanned aircraft may not exceed 87 knots (100 miles per hour).

(b) The altitude of the small unmanned aircraft cannot be higher than 400 feet above ground level, unless the small unmanned aircraft:

- (1) Is flown within a 400-foot radius of a structure; and
- (2) Does not fly higher than 400 feet above the structure's immediate uppermost limit.

(c) The minimum flight visibility, as observed from the location of the control station must be no less than 3 statute miles. For purposes of this section, flight visibility means the average slant distance from the control station at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

(d) The minimum distance of the small unmanned aircraft from clouds must be no less than:

- (1) 500 feet below the cloud; and
- (2) 2,000 feet horizontally from the cloud.

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### Subpart C—Remote Pilot Certification

#### § 107.53 Applicability.

This subpart prescribes the requirements for issuing a remote pilot certificate with a small UAS rating.

#### § 107.57 Offenses involving alcohol or drugs.

(a) A conviction for the violation of any Federal or State statute relating to the growing, processing, manufacture, sale, disposition, possession, transportation, or importation of narcotic drugs, marijuana, or depressant or stimulant drugs or substances is grounds for:

- (1) Denial of an application for a remote pilot certificate with a small UAS rating for a period of up to 1 year after the date of final conviction; or
- (2) Suspension or revocation of a remote pilot certificate with a small UAS rating.

(b) Committing an act prohibited by § 91.17(a) or § 91.19(a) of this chapter is grounds for:

- (1) Denial of an application for a remote pilot certificate with a small UAS rating for a period of up to 1 year after the date of that act; or
- (2) Suspension or revocation of a remote pilot certificate with a small UAS rating.

#### § 107.59 Refusal to submit to an alcohol test or to furnish test results.

A refusal to submit to a test to indicate the percentage by weight of alcohol in the blood, when requested by a law enforcement officer in accordance with § 91.17(c) of this chapter, or a refusal to furnish or authorize the release of the test results requested by the Administrator in accordance with § 91.17(c) or (d) of this chapter, is grounds for:

- (a) Denial of an application for a remote pilot certificate with a small UAS rating for a period of up to 1 year after the date of that refusal; or
- (b) Suspension or revocation of a remote pilot certificate with a small UAS rating.

#### § 107.61 Eligibility.

Subject to the provisions of §§ 107.57 and 107.59, in order to be eligible for a remote pilot certificate with a small UAS rating under this subpart, a person must:

- (a) Be at least 16 years of age;
- (b) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, the FAA may place such operating limitations on that applicant's certificate as are necessary for the safe operation of the small unmanned aircraft;
- (c) Not know or have reason to know that he or she has a physical or mental condition that would interfere with the safe operation of a small unmanned aircraft system; and
- (d) Demonstrate aeronautical knowledge by satisfying one of the following conditions:
  - (1) Pass an initial aeronautical knowledge test covering the areas of knowledge specified in § 107.73(a); or
  - (2) If a person holds a pilot certificate (other than a student pilot certificate) issued under part 61 of this chapter and meets the flight review requirements specified in § 61.56, complete an initial training course covering the areas of knowledge specified in § 107.74(a) in a manner acceptable to the Administrator.

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### **§ 107.63 Issuance of a remote pilot certificate with a small UAS rating.**

An applicant for a remote pilot certificate with a small UAS rating under this subpart must make the application in a form and manner acceptable to the Administrator.

- (a) The application must include either:
  - (1) Evidence showing that the applicant passed an initial aeronautical knowledge test. If applying using a paper application, this evidence must be an airman knowledge test report showing passage of the knowledge test; or
  - (2) If a person holds a pilot certificate (other than a student pilot certificate) issued under part 61 of this chapter and meets the flight review requirements specified in § 61.56, a certificate of completion of a part 107 initial training course.
- (b) If the application is being made pursuant to paragraph (a)(2) of this section:
  - (1) The application must be submitted to a Flight Standards District Office, a designated pilot examiner, an airman certification representative for a pilot school, a certificated flight instructor, or other person authorized by the Administrator;
  - (2) The person accepting the application submission must verify the identity of the applicant in a manner acceptable to the Administrator; and
  - (3) The person making the application must, by logbook endorsement or other manner acceptable to the Administrator, show the applicant meets the flight review requirements specified in § 61.56 of this chapter.

### **§ 107.64 Temporary Certificate**

- (a) A temporary remote pilot certificate with a small UAS rating is issued for up to 120 calendar days, at which time a permanent certificate will be issued to a person whom the Administrator finds qualified under this part.
- (b) A temporary remote pilot certificate with a small UAS rating expires:
  - (1) On the expiration date shown on the certificate;
  - (2) Upon receipt of the permanent certificate; or
  - (3) Upon receipt of a notice that the certificate sought is denied or revoked.

### **§ 107.65 Aeronautical knowledge recency.**

A person may not operate a small unmanned aircraft system unless that person has completed one of the following, within the previous 24 calendar months:

- (a) Passed an initial aeronautical knowledge test covering the areas of knowledge specified in § 107.73(a);
- (b) Passed a recurrent aeronautical knowledge test covering the areas of knowledge specified in § 107.73(b); or
- (c) If a person holds a pilot certificate (other than a student pilot certificate) issued under part 61 of this chapter and meets the flight review requirements specified in § 61.56, passed either an initial or recurrent training course covering the areas of knowledge specified in § 107.74(a) or (b) in a manner acceptable to the Administrator.

### **§ 107.67 Knowledge tests: General procedures and passing grades.**

- (a) Knowledge tests prescribed by or under this part are given by persons and in the manner designated by the Administrator.
- (b) An applicant for a knowledge test must have proper identification at the time of application that contains the applicant's:
  - (1) Photograph;
  - (2) Signature;

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(3) Date of birth, which shows the applicant meets or will meet the age requirements of this part for the certificate and rating sought before the expiration date of the airman knowledge test report; and

(4) Permanent mailing address. If the applicant's permanent mailing address is a post office box number, then the applicant must also provide a current residential address.

(c) The minimum passing grade for the knowledge test will be specified by the Administrator.

### § 107.69 Knowledge tests: Cheating or other unauthorized conduct.

(a) An applicant for a knowledge test may not:

(1) Copy or intentionally remove any knowledge test;

(2) Give to another applicant or receive from another applicant any part or copy of a knowledge test;

(3) Give or receive assistance on a knowledge test during the period that test is being given;

(4) Take any part of a knowledge test on behalf of another person;

(5) Be represented by, or represent, another person for a knowledge test;

(6) Use any material or aid during the period that the test is being given, unless specifically authorized to do so by the Administrator; and

(7) Intentionally cause, assist, or participate in any act prohibited by this paragraph.

(b) An applicant who the Administrator finds has committed an act prohibited by paragraph (a) of this section is prohibited, for 1 year after the date of committing that act, from:

(1) Applying for any certificate, rating, or authorization issued under this chapter; and

(2) Applying for and taking any test under this chapter.

(c) Any certificate or rating held by an applicant may be suspended or revoked if the Administrator finds that person has committed an act prohibited by paragraph (a) of this section.

### § 107.71 Retesting after failure.

An applicant for a knowledge test who fails that test may not reapply for the test for 14 calendar days after failing the test.

### § 107.73 Initial and recurrent knowledge tests.

(a) An initial aeronautical knowledge test covers the following areas of knowledge:

(1) Applicable regulations relating to small unmanned aircraft system rating privileges, limitations, and flight operation;

(2) Airspace classification, operating requirements, and flight restrictions affecting small unmanned aircraft operation;

(3) Aviation weather sources and effects of weather on small unmanned aircraft performance;

(4) Small unmanned aircraft loading;

(5) Emergency procedures;

(6) Crew resource management;

(7) Radio communication procedures;

(8) Determining the performance of small unmanned aircraft;



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- (9) Physiological effects of drugs and alcohol;
  - (10) Aeronautical decision-making and judgment;
  - (11) Airport operations; and
  - (12) Maintenance and preflight inspection procedures.
- (b) A recurrent aeronautical knowledge test covers the following areas of knowledge:
- (1) Applicable regulations relating to small unmanned aircraft system rating privileges, limitations, and flight operation;
  - (2) Airspace classification and operating requirements and flight restrictions affecting small unmanned aircraft operation;
  - (3) Emergency procedures;
  - (4) Crew resource management;
  - (5) Aeronautical decision-making and judgment;
  - (6) Airport operations; and
  - (7) Maintenance and preflight inspection procedures.

### § 107.74 Initial and recurrent training courses.

- (a) An initial training course covers the following areas of knowledge:
- (1) Applicable regulations relating to small unmanned aircraft system rating privileges, limitations, and flight operation;
  - (2) Effects of weather on small unmanned aircraft performance;
  - (3) Small unmanned aircraft loading;
  - (4) Emergency procedures;
  - (5) Crew resource management;
  - (6) Determining the performance of small unmanned aircraft; and
  - (7) Maintenance and preflight inspection procedures.
- (b) A recurrent training course covers the following areas of knowledge:
- (1) Applicable regulations relating to small unmanned aircraft system rating privileges, limitations, and flight operation;
  - (2) Emergency procedures;
  - (3) Crew resource management; and
  - (4) Maintenance and preflight inspection procedures.

### § 107.77 Change of name or address.

(a) Change of Name. An application to change the name on a certificate issued under this subpart must be accompanied by the applicant's:

- (1) Remote pilot certificate with small UAS rating; and
- (2) A copy of the marriage license, court order, or other document verifying the name change.

(b) The documents in paragraph (a) of this section will be returned to the applicant after inspection.

(c) Change of address. The holder of a remote pilot certificate with small UAS rating issued under this subpart who has made a change in permanent mailing address may not, after 30 days from that date, exercise the privileges of the certificate unless the holder has notified the FAA of the change in address using one of the following methods:

- (1) By letter to the FAA Airman Certification Branch, P.O. Box 25082, Oklahoma City, OK 73125 providing the new permanent mailing address, or if the permanent mailing address includes a post office box number, then the holder's current residential address; or

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(2) By using the FAA website portal at [www.faa.gov](http://www.faa.gov) providing the new permanent mailing address, or if the permanent mailing address includes a post office box number, then the holder's current residential address.

### § 107.79 Voluntary surrender of certificate.

(a) The holder of a certificate issued under this subpart may voluntarily surrender it for cancellation.

(b) Any request made under paragraph (a) of this section must include the following signed statement or its equivalent: “I voluntarily surrender my remote pilot certificate with a small UAS rating for cancellation. This request is made for my own reasons, with full knowledge that my certificate will not be reissued to me unless I again complete the requirements specified in §§ 107.61 and 107.63.”

### Subpart D – Waivers

#### § 107.200 Waiver policy and requirements.

(a) The Administrator may issue a certificate of waiver authorizing a deviation from any regulation specified in § 107.205 of this subpart if the Administrator finds that a proposed small UAS operation can safely be conducted under the terms of that certificate of waiver.

(b) A request for a certificate of waiver must contain a complete description of the proposed operation and justification that establishes that the operation can safely be conducted under the terms of a certificate of waiver.

(c) The Administrator may prescribe additional limitations that the Administrator considers necessary.

(d) A person who receives a certificate of waiver issued under this section:

(1) May deviate from the regulations of this part to the extent specified in the certificate of waiver; and

(2) Must comply with any conditions or limitations that are specified in the certificate of waiver.

#### § 107.205 List of regulations subject to waiver.

A certificate of waiver issued pursuant to § 107.200 of this subpart may authorize a deviation from the following regulations of this part:

Sec.

107.25 – Operation from a moving vehicle or aircraft. However, no waiver of this provision will be issued to allow the carriage of property of another by aircraft for compensation or hire.

107.29 – Daylight operation.

107.31 – Visual line of sight aircraft operation. However, no waiver of this provision will be issued to allow the carriage of property of another by aircraft for compensation or hire.

107.33 – Visual observer.

107.35 – Operation of multiple small unmanned aircraft systems.

107.37(a) – Yielding the right of way.

107.39 – Operation over people.

107.41 – Operation in certain airspace.

107.51 – Operating limitations for small unmanned aircraft.