

sUAS Practice, Procedures & Experiences

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2/14/18







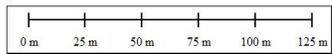




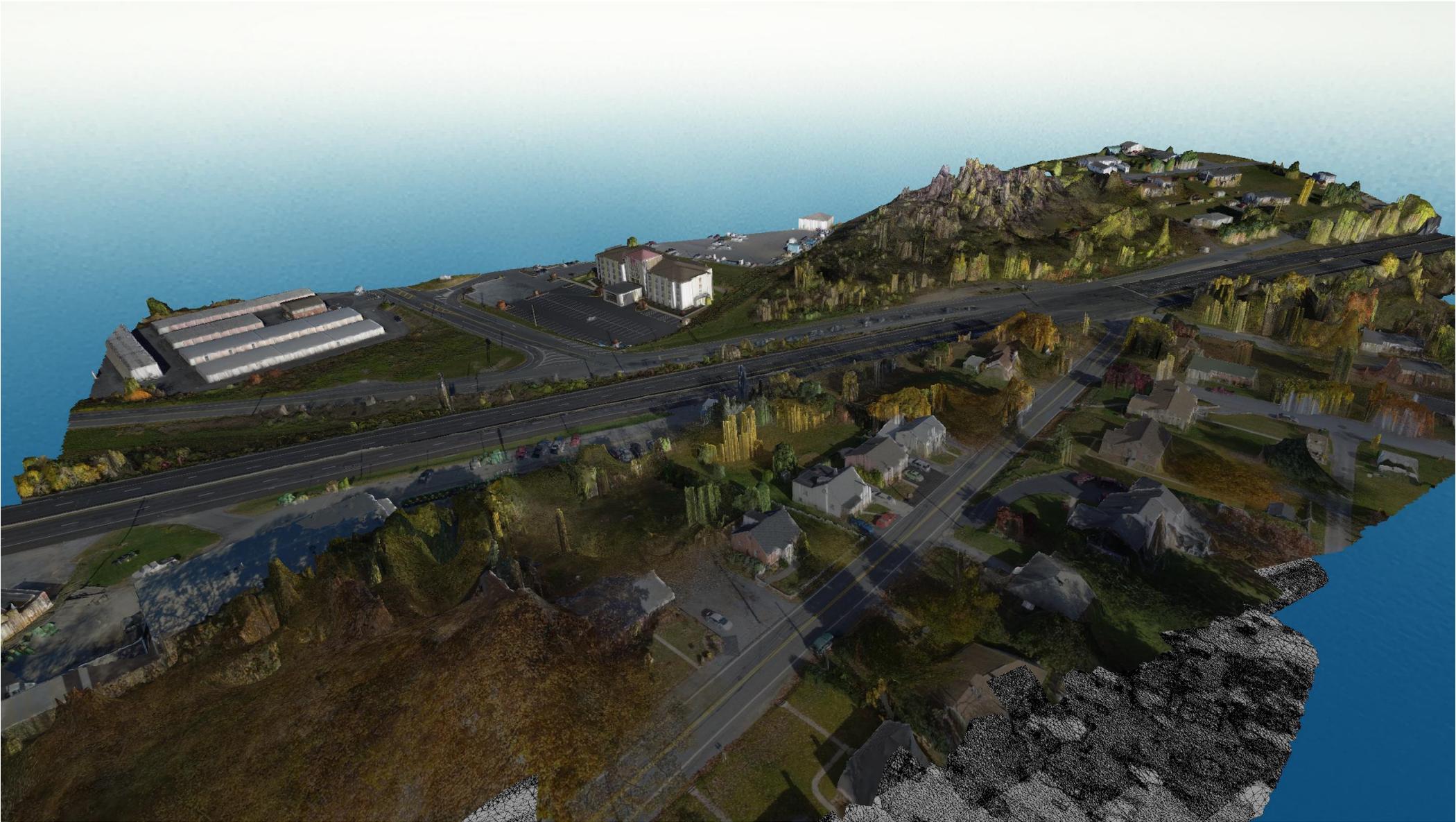


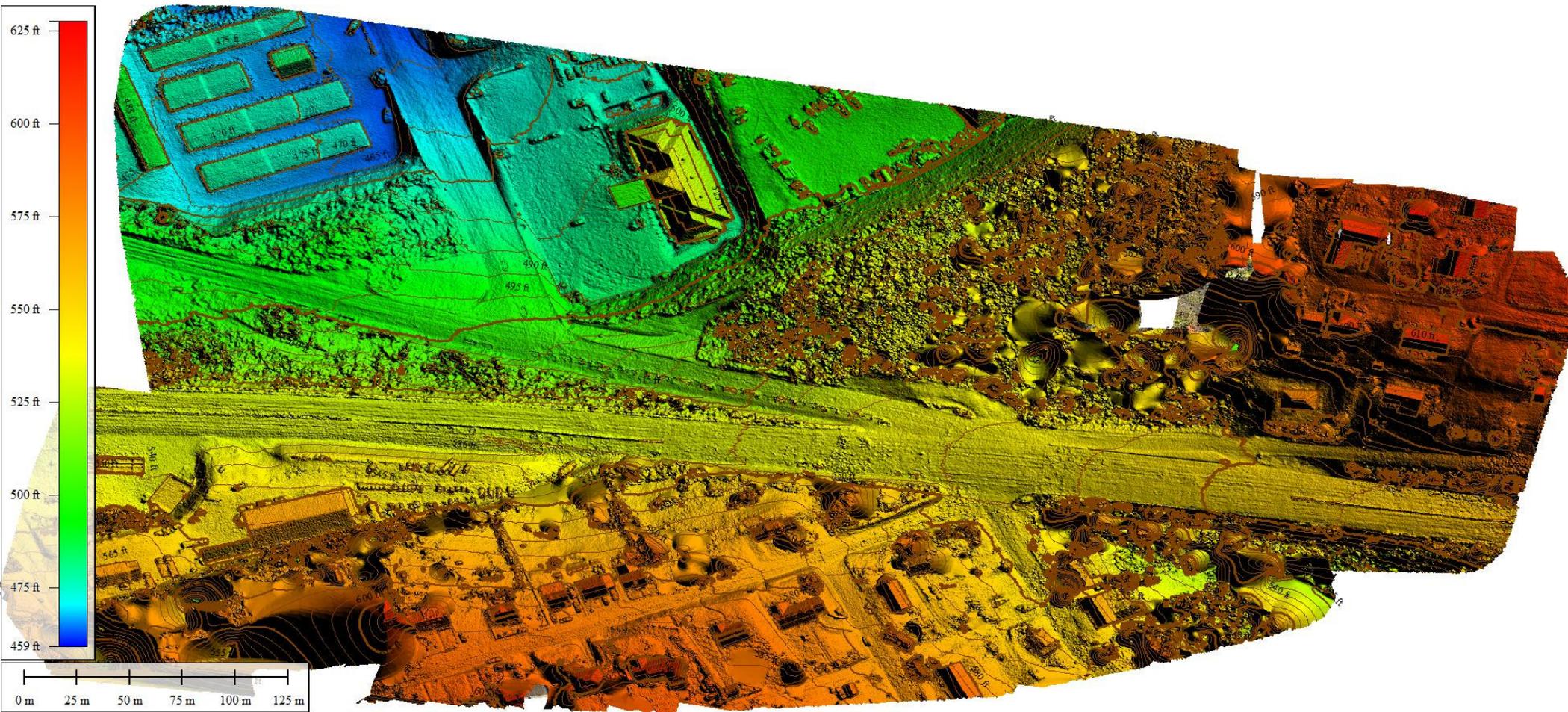














I-83 Southbound Pier 1 South side



I-83 Southbound Pier 2 South side





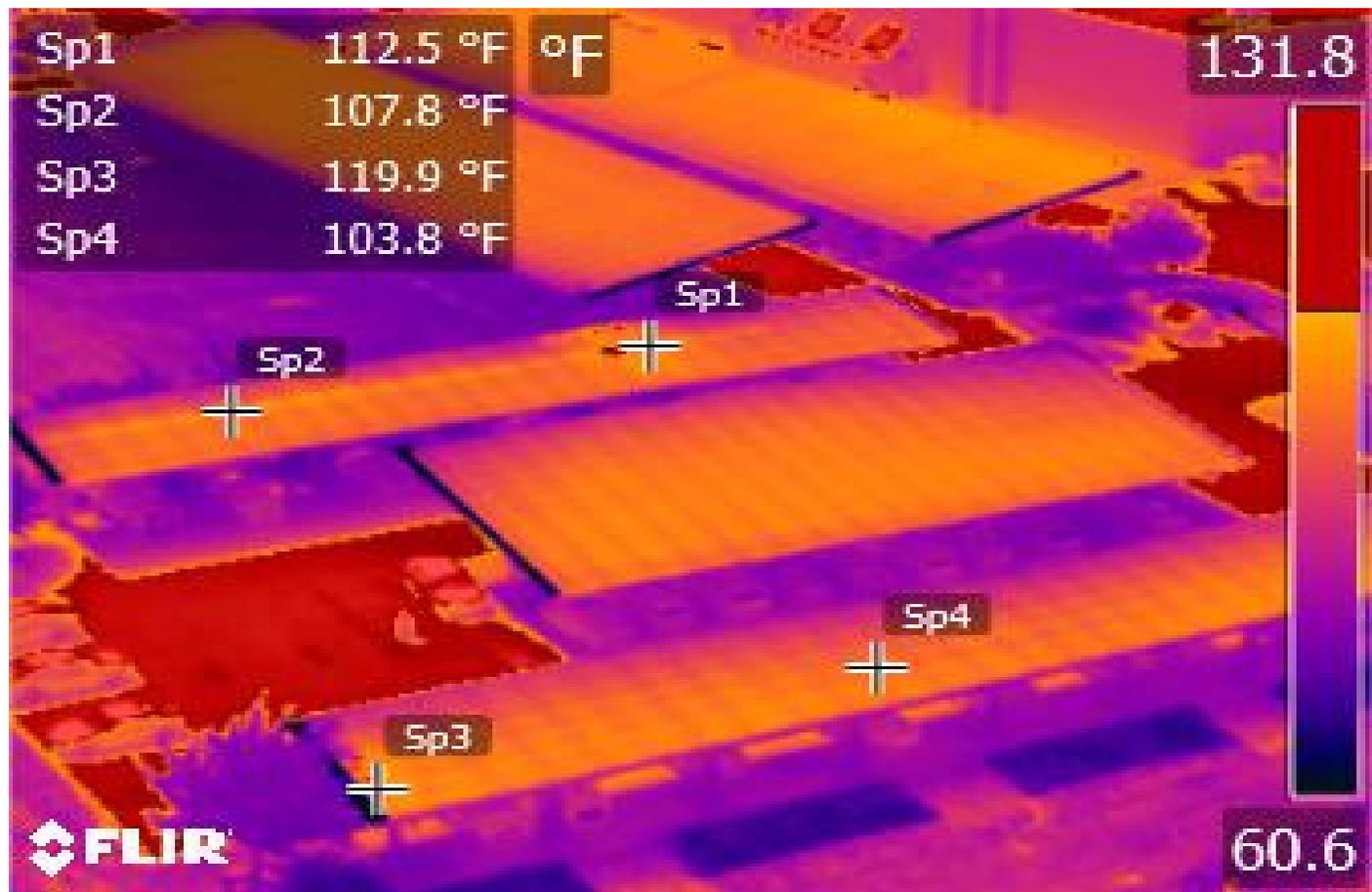














Getting Started

What you need to know

FAA News



Federal Aviation Administration, Washington, DC 20591

June 21, 2016

SUMMARY OF SMALL UNMANNED AIRCRAFT RULE (PART 107)

Operational Limitations	<ul style="list-style-type: none"> Unmanned aircraft must weigh less than 55 lbs. (25 kg). Visual line-of-sight (VLOS) only: the unmanned aircraft must remain within VLOS of the remote pilot in command and the person manipulating the flight controls of the small UAS. Alternatively, the unmanned aircraft must remain within VLOS of the visual observer. At all times the small unmanned aircraft must remain close enough to the remote pilot in command and the person manipulating the flight controls of the small UAS for those people to be capable of seeing the aircraft with vision unaided by any device other than corrective lenses. Small unmanned aircraft may not operate over any persons not directly participating in the operation, not under a covered structure, and not inside a covered stationary vehicle. Daylight-only operations, or civil twilight (30 minutes before official sunrise to 30 minutes after official sunset, local time) with appropriate anti-collision lighting. Must yield right of way to other aircraft. May use visual observer (VO) but not required. First-person view camera cannot satisfy "see-and-avoid" requirement but can be used as long as requirement is satisfied in other ways. Maximum groundspeed of 100 mph (87 knots). Maximum altitude of 400 feet above ground level (AGL) or, if higher than 400 feet AGL, remain within 400 feet of a structure. Minimum weather visibility of 3 miles from control station. Operations in Class B, C, D and E airspace are allowed with the required ATC permission. Operations in Class G airspace are allowed without ATC permission. No person may act as a remote pilot in command or VO for more than one unmanned aircraft operation at one time. No operations from a moving aircraft. No operations from a moving vehicle unless the operation is over a sparsely populated area. No careless or reckless operations. No carriage of hazardous materials.
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	<ul style="list-style-type: none"> Requires preflight inspection by the remote pilot in command. A person may not operate a small unmanned aircraft if he or she knows or has reason to know of any physical or mental condition that would interfere with the safe operation of a small UAS. Foreign-registered small unmanned aircraft are allowed to operate under part 107 if they satisfy the requirements of part 375. External load operations are allowed if the object being carried by the unmanned aircraft is securely attached and does not adversely affect the flight characteristics or controllability of the aircraft. Transportation of property for compensation or hire allowed provided that: <ul style="list-style-type: none"> The aircraft, including its attached systems, payload and cargo weigh less than 55 pounds total. The flight is conducted within visual line of sight and not from a moving vehicle or aircraft; and The flight occurs wholly within the bounds of a State and does not involve transport between (1) Hawaii and another place in Hawaii through airspace outside Hawaii; (2) the District of Columbia and another place in the District of Columbia; or (3) a territory or possession of the United States and another place in the same territory or possession. Most of the restrictions discussed above are waivable if the applicant demonstrates that his or her operation can safely be conducted under the terms of a certificate of waiver.
Remote Pilot in Command Certification and Responsibilities	<ul style="list-style-type: none"> Establishes a remote pilot in command position. A person operating a small UAS must either hold a remote pilot airman certificate with a small UAS rating or be under the direct supervision of a person who does hold a remote pilot certificate (remote pilot in command). To qualify for a remote pilot certificate, a person must: <ul style="list-style-type: none"> Demonstrate aeronautical knowledge by either: <ul style="list-style-type: none"> Passing an initial aeronautical knowledge test at an FAA-approved knowledge testing center; or Hold a part 61 pilot certificate other than student pilot, complete a flight review within the previous 24 months, and complete a small UAS online training course provided by the FAA. Be vetted by the Transportation Security Administration. Be at least 16 years old. Part 61 pilot certificate holders may obtain a temporary remote pilot certificate immediately upon submission of their application for a permanent certificate. Other applicants will obtain a temporary remote pilot certificate upon successful completion of TSA security vetting. The FAA anticipates that it will be able to issue a temporary remote pilot certificate within 10 business days after receiving a completed remote pilot certificate application. Until international standards are developed, foreign-

	<p>certificated UAS pilots will be required to obtain an FAA-issued remote pilot certificate with a small UAS rating.</p> <p>A remote pilot in command must:</p> <ul style="list-style-type: none"> Make available to the FAA, upon request, the small UAS for inspection or testing, and any associated documents/records required to be kept under the rule. Report to the FAA within 10 days of any operation that results in at least serious injury, loss of consciousness, or property damage of at least \$500. Conduct a preflight inspection, to include specific aircraft and control station systems checks, to ensure the small UAS is in a condition for safe operation. Ensure that the small unmanned aircraft complies with the existing registration requirements specified in § 91.203(a)(2). <p>A remote pilot in command may deviate from the requirements of this rule in response to an in-flight emergency.</p>
Aircraft Requirements	<ul style="list-style-type: none"> FAA airworthiness certification is not required. However, the remote pilot in command must conduct a preflight check of the small UAS to ensure that it is in a condition for safe operation.
Model Aircraft	<ul style="list-style-type: none"> 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.



U.S. Department
of Transportation

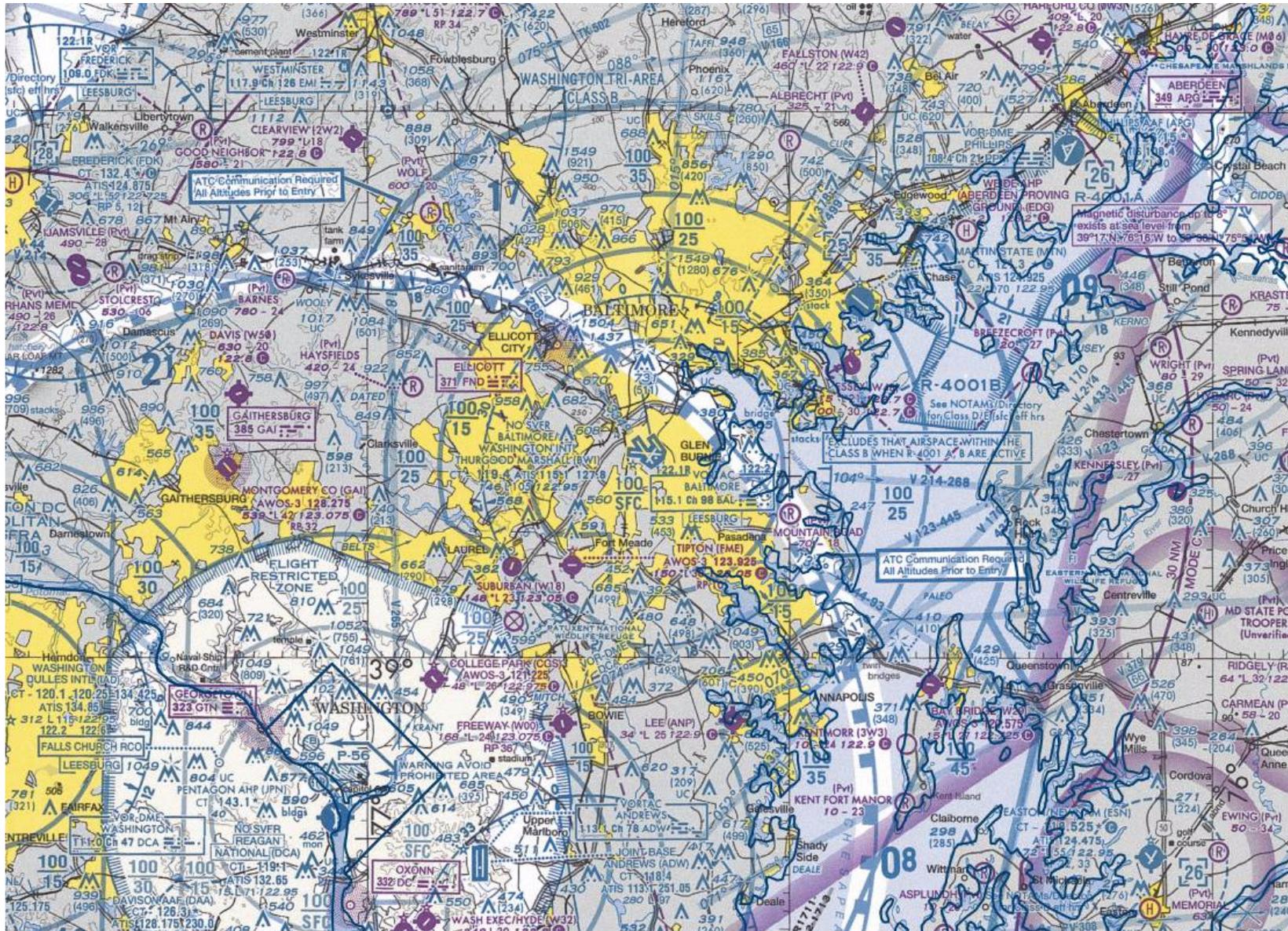
Federal Aviation
Administration

FAA-S-ACS-10

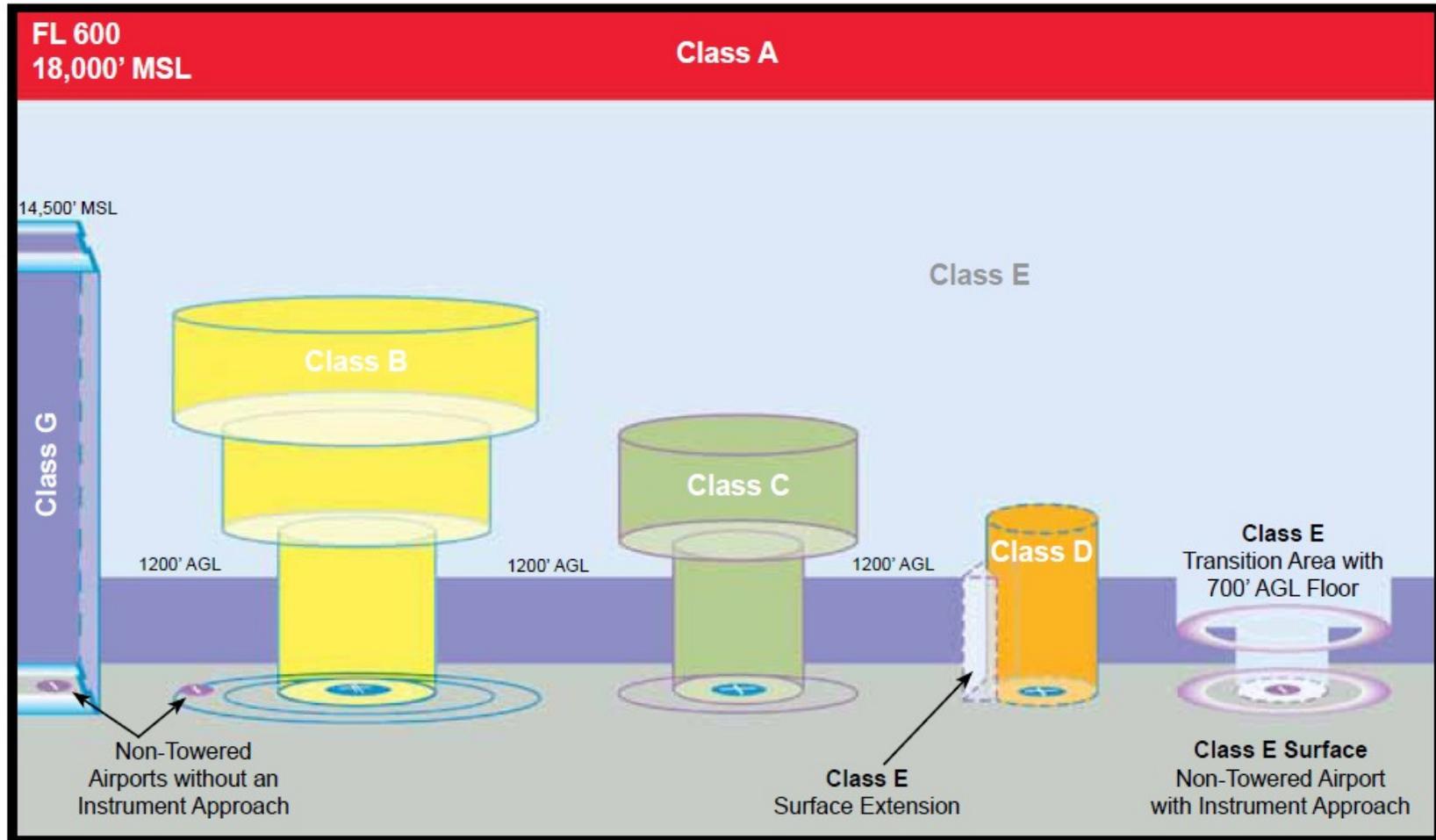
**Remote Pilot – Small
Unmanned Aircraft Systems
Airman Certification Standards**

July 2016

**Flight Standards Service
Washington, DC 20591**



AIRSPACE CLASSIFICATION



U.S. Airspace depiction as shown on Visual Aeronautical Charts

WAIVERS

4 TYPES

1. DAYLIGHT OPERATIONS
2. LINE OF SIGHT
3. OVER ROADS/MOVING VEHICLES
4. OVER PEOPLE

SMALL UNMANNED AIRCRAFT SYSTEM (sUAS) WAIVER AND AIRSPACE AUTHORIZATION APPLICATION INSTRUCTIONS

Please submit your application as soon as possible prior to your planned operation. The FAA encourages applicants to submit their application at least 90 days prior to the start of the proposed operation. The FAA will strive to complete review and adjudication of waivers and airspace authorizations within 90 days; however, the time required for the FAA to make a determination regarding waiver/airspace authorization requests will vary based on the complexity of the request. The amount of data and analysis required as part of the application will be proportional to the specific relief that is requested.

Applicants requesting a Certificate of Waiver in accordance with 14 CFR section 107.205 or Airspace Authorization in accordance with 14 CFR section 107.41 must complete all items on the form that are marked with an asterisk.

Responsible Person

Name: The responsible person is the official holder of the waiver and/or airspace authorization.

The responsible person:

- Must ensure the operation is conducted safely and with strict observance of the terms and provisions contained in the waiver and/or airspace authorization.
- Should be a person that has ongoing knowledge of the operations of the sUAS under the waiver/airspace authorization.
- Is not required to hold a remote pilot certification.



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Unmanned Aircraft Systems

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FAA Home > Unmanned Aircraft Systems > Request a Part 107 Waiver or Operation in Controlled Airspace > Waiver Safety Explanation Guidelines for Part 107 Waiver Applications

Waiver Safety Explanation Guidelines for Part 107 Waiver Applications



An application for a Certificate of Waiver issued in accordance with 14 CFR § 107.200, must provide justification that the operation can be safely conducted. The following guidelines may help the applicant provide sufficient information for a thorough safety evaluation by the FAA.

§ 107.200 Waiver policy and requirements

- 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 be safely conducted under the terms of that certificate of waiver.
- A request for a certificate of waiver must contain a complete description of the proposed operation and a justification that establishes that the operation can safely be conducted under the terms of a certificate of waiver.
- The Administrator may prescribe additional limitations that the Administrator

Top Tasks

- View the 2017 Symposium Presentations
- Register your UAS
- Become a UAS pilot
- Request a Part 107 Waiver or Operation in Controlled Airspace
- Report an Accident

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO

Century Engineering
Responsible Person: Bryan Haynie
Waiver Number: 107W-2017-05295

ADDRESS -

10710 Gilroy Rd
Hunt Valley, MD 21031

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

Night small unmanned aircraft system (sUAS) operations.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE

14 CFR § 107.29 Daylight operation

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached to and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

NOTE—This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. 1 to 11, inclusive, are set forth on the attached pages.

This Certificate of Waiver is effective from January 25, 2018 to January 31, 2022 and is subject to cancellation at any time upon notice by the Administrator or an authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

JOSEPH V
FAGAN JR

General Aviation and Commercial Division, AFS-800

Digitally signed by JOSEPH V
FAGAN JR
Date: 2018.01.24 15:21:32 -0500







Century Engineering, Inc. Unmanned Aircraft System Operations Manual

January 2017

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**CENTURY ENGINEERING, INC.
UAS PRE FLIGHT CHECKLIST**

- _____ 1. Visual condition inspection of the UAS components;
- _____ 2. Airframe structure (including undercarriage), all flight control surfaces and linkages;
- _____ 3. Registration markings, for proper display and legibility;
- _____ 4. Moveable control surface(s), including airframe attachment point(s);
- _____ 5. Servo motor(s), including attachment point(s);
- _____ 6. Propulsion system, including powerplant(s), propeller(s), rotor(s), ducted fan(s), etc.;
- _____ 7. Verify all systems (e.g., aircraft and control unit) have an adequate energy supply for the intended operation and are functioning properly;
- _____ 8. Avionics, including control link transceiver, communication/navigation equipment, and antenna(s);
- _____ 9. Calibrate UAS compass prior to any flight;
- _____ 10. Control link transceiver, communication/navigation data link transceiver, and antenna(s);
- _____ 11. Display panel, if used, is functioning properly;
- _____ 12. Check ground support equipment, including takeoff and landing systems, for proper operation;
- _____ 13. Check that control link correct functionality is established between the aircraft and the CS;
- _____ 14. Check for correct movement of control surfaces using the CS;
- _____ 15. Check onboard navigation and communication data links;
- _____ 16. Check flight termination system, if installed;
- _____ 17. Check fuel for correct type and quantity;
- _____ 18. Check battery levels for the aircraft and CS;
- _____ 19. Check that any equipment, such as a camera, is securely attached;
- _____ 20. Verify communication with UAS and that the UAS has acquired GPS location from at least four satellites;
- _____ 21. Start the UAS propellers to inspect for any imbalance or irregular operation;
- _____ 22. Verify all controller operation for heading and altitude;
- _____ 23. If required by flight path walk through, verify any noted obstructions that may interfere with the UAS; and
- _____ 24. At a controlled low altitude, fly within range of any interference and recheck all controls and stability.
- _____ 25. Property investigation and coordination with critical adjoiners (hospitals, courthouses, government facilities, etc.)

Signature – Pilot In Command

Date

DATE		PILOTS/ V.O.	
PROJECT/ PROJECT #			
MISSION			
AIRFRAME			
LOCATION			
WEATHER			
WINDSPEED			
# BATTERIES/ TYPE			
FLIGHT DURATION			
ALTTUDE			
TOWER COMMUNICATION			
COMMENTS/ CONCERNS			

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