

FAA Unmanned Aircraft Program Office

Regulatory Issues

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By: Doug Davis, FAA Unmanned Aircraft Program
Office

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Federal Aviation
Administration



What is an Unmanned Aircraft System (UAS)?

- **UAS are Aircraft**
- An **aircraft** is defined at 49 U.S.C. §40102(a)(6) to mean “any contrivance invented, used, or designed to navigate, or fly in, the air.”
- An **Unmanned Aircraft** is defined as “an Aircraft operated without the possibility of direct human intervention from within or on the aircraft (Plural acronym is the same as the singular, UA)” (RTCA UAS Guidance Material DO-304)
- An **Unmanned Aircraft System (UAS)** is defined as “An unmanned aircraft and its associated elements required for operation. (Plural acronym is the same as the singular, UAS)” (RTCA UAS Guidance Material DO-304)

Current National Airspace Requirements

- As aircraft, UAS must comply with existing Federal Aviation Regulations
- 14 CFR §91.13 states that “No person may operate an aircraft (civil or public) in a careless or reckless manner so as to endanger the life or property of another
- 14 CFR §91.203 requires all civil aircraft to have an appropriate and current airworthiness certificate and an effective U.S. registration certificate.
- UAS, where applicable, are expected to participate in the existing NAS infrastructure using the same rules for equipage.
- There is no identified frequency spectrum for the command & control of UAS.

Current UAS Operations in the NAS

- Within “segregated” airspace
 - Includes Special Use Airspace (SUA) Restricted, Warning and Prohibited areas designated for aviation activities
- In non-segregated airspace
 - “Public” UAS – through Certificate of Authorization (COA) process with appropriate operating limitations
 - “Civil” UAS – using experimental / type certification process with appropriate operating limitations
 - “Model” aircraft – Advisory Circular 91-57, June 1981, guidance
 - (recreational / hobbyist activities)
- While ensuring “no harm” to other NAS customers and public

Public vs. Civil Aircraft

- **Civil aircraft** means aircraft other than public aircraft. (14 CFR § 1.1)
- **Public aircraft**

49 USC § 40102 a (41) states that “**public aircraft**” means any of the following:

(A) Except with respect to an aircraft described in subparagraph (E), an aircraft used only for the United States Government, except as provided in section 40125(b).

(B) An aircraft owned by the Government and operated by any person for purposes related to crew training, equipment development, or demonstration, except as provided in section 40125(b).

(C) An aircraft owned and operated by the government of a State, the District of Columbia, or a territory or possession of the United States or a political subdivision of one of these governments, except as provided in section 40125(b).

(D) An aircraft exclusively leased for at least 90 continuous days by the government of a State, the District of Columbia, or a territory or possession of the United States or a political subdivision of one of these governments, except as provided in section 40125(b).

(E) “An aircraft owned or operated by the armed forces or chartered to provide transportation or other commercial air service to the armed forces under the conditions specified by section 40125(c). The term “other commercial air service” means an aircraft operation that—

- (i) is within the United States territorial airspace;
- (ii) the Administrator of the Federal Aviation Administration determines is available for compensation or hire to the public; and
- (iii) must comply with all applicable civil aircraft rules under title 14, Code of Federal Regulations.”

Why do Public aircraft need a COA?

- The Certificate of Waiver/Authorization (COA) Process is an established method for handling requests to operate a UAS in the National Airspace System in a manner that will not cause careless or reckless endangerment of other people or property in violation of 14 CFR § 91.13
- Title 49 U.S.C. § **40103**. Sovereignty and use of airspace
 - (b) Use of Airspace —
 - (1)The Administrator of the Federal Aviation Administration 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. The Administrator may modify or revoke an assignment when required in the public interest.
 - (2)The Administrator shall prescribe air traffic regulations on the flight of aircraft (including regulations on safe altitudes) for--
 - (A) navigating, protecting, and identifying aircraft; (B) protecting individuals and property on the ground; (C) using the navigable airspace efficiently; and (D) preventing collision between aircraft, between aircraft and land or water vehicles, and between aircraft and airborne objects.



Status of Regulatory Development

- Starting Small and “Do No Harm”
- Why? Market surveys indicate majority of UAS developed in the next 8-10 years will be under 20 pounds
 - Includes civil, military, and commercial use
- Rulemaking Council approved creation of Aviation Rulemaking Committee (ARC)
- ARC Charter signed
 - Initial committee meeting scheduled for May 27-29 in DC
- Guidance to ARC will be an aggressive schedule (6-9 months)
- Rulemaking Process is lengthy
 - Projected final rule due in 2010/2011

More Regulatory Plans

- UAPO has several certification teams focusing on future rule development:
 - Restricted Category guidance
 - Part 23 review & applicability
 - Part 27 (Rotorcraft) review & applicability
 - Ground Control Station Technology
 - Automatic Take-off & Landing Technology
- Roadmap/Project Plan Status
 - Under revision
 - Better definition of work areas
 - Possible high-level release in May

A Safe NAS for All

