



COVER SHEET

Access 5 Project Deliverable

Deliverable Number: PD009

Title: Registration and Marking Requirements for UAS

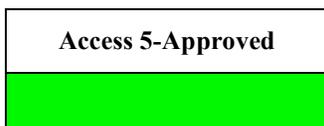
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Abstract:

The registration of an aircraft is a prerequisite for issuance of a U.S. certificate of airworthiness by the FAA. The procedures and requirements for aircraft registration, and the subsequent issuance of registration numbers, are contained in FAR Part 47. However, the process/method(s) for applying the requirements of Parts 45 & 47 to Unmanned Aircraft Systems (UAS) has not been defined. This task resolved the application of 14 CFR Parts 45 and 47 to UAS.

Key Findings: UAS are aircraft systems and as such the recommended approach to registration is to follow the same process for registration as manned aircraft. This will require manufacturers to comply with the requirements for 14 CFR 47, Aircraft Registration and 14 CFR 45, Identification and Registration Marking. In addition, only the UA should be identified with the 'N' number registration markings. There should also be a documentation link showing the applicability of the control station and communication link to the UA. The documentation link can be in the form of a Type Certificate Data Sheet (TCDS) entry or a UAS logbook entry. The recommended process for the registration of UAS is similar to the manned aircraft process and is outlined in a 6-step process in the paper.

Status:



Limitations on use:

None.

ACCESS 5 POSITION PAPER

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Regulation Reference: 14 CFR Part 47 & 45, FAA AC Form 8050-94

Date:

Status:

Proposal	Draft Position	Closed	SEIT-Approved	Access 5-Approved
			X	

Subject: Unmanned Aircraft System (UAS) Registration

Statement of Question/Issue:

The registration of an aircraft is a prerequisite for issuance of a U.S. certificate of airworthiness by the FAA. The procedures and requirements for aircraft registration, and the subsequent issuance of registration numbers, are contained in FAR Part 47. However, the process/method(s) for applying the requirements of Parts 45 & 47 to Unmanned Aircraft System (UAS), has not been defined. This task, therefore, is to resolve the application of 14 CFR Parts 45 and 47 to UAS.

Discussion:

- a. All civil aircraft, whether for pleasure or commercial purposes, are required to be registered with the Federal Aviation Administration (FAA). Title 49, United States Code requires the registration of each civil aircraft as a prerequisite to its operation. An aircraft is eligible for registration if, but only if (1) it is not registered under the laws of any other country; and (2) it is owned by (a) a citizen of the United States or (b) an individual citizen of a foreign country who has lawfully been admitted for permanent residence in the United States or (c) a corporation lawfully organized and doing business under the laws of the United States or the District of Columbia so long as such aircraft is based and primarily used in the United States or (d) a government unit. Operation of an aircraft that is not registered may subject the operator to a civil penalty.
- b. A United States Citizen, including a corporation, is allowed to apply for aircraft registration. Further information on aircraft registration by a corporation is found in 14 CFR 47.

The FAA and other government agencies uses the information gathered in the registration purpose for the following routine purposes:

1. To determine that aircraft are registered in accordance with the provisions of Title 49, United States Code.
2. To support investigative efforts of investigation and law enforcement agencies of Federal, State and foreign governments.

3. To serve as a repository of legal documents used by individuals and title search companies to determine the legal ownership of an aircraft.
4. To provide aircraft owners and operators information about potential mechanical defects or unsafe conditions of their aircraft in the form of airworthiness directives.
5. To provide supporting information in court cases concerning liability of individuals in law suits.
6. To serve as a data source for management information for production of summary descriptive statistics and analytical studies in support of agency functions for which the records are collected and maintained.
7. To respond to general requests from the aviation community or the public for statistical information under the Freedom of Information Act or to locate specific aircraft for accident investigation, violation, or other safety related requirements.
8. To provide data for the automated aircraft registration master file
9. To provide documents for microfiche backup record.
10. To provide data for development of the aircraft registration statistical system.
11. To provide an aircraft register on magnetic tape and publication form required by the International Civil Aviation Organization (ICAO).

An UAS consists of the unmanned aircraft (UA), control station and control/communications data link. While the UAS is unique from manned aircraft, the issue becomes whether there are sufficient similarities in the design of the systems to conclude that the registration and nationality marking process used for manned aircraft will work for UAS, or if an UAS unique process needs to be developed.

14 CFR 47 describes the aircraft registration requirements. The application for registration requires the aircraft to be described in terms of make, model, and serial number. 14 CFR 45 identifies the requirements for identification and registration marking of the aircraft and major components (engine, propellers, etc.). Therefore, at a minimum both the UA and control station would need to be identified with identification data plates as described in 45.11 and 45.13. If the control station were small enough (e.g. laptop computer), then it may be sufficient to use an existing serial number or other identifying marks, without attempting to affix another identification plate. The nationality and registration marks should be affixed as specified in 14 CFR 45 Subpart C. This section appears to indicate that only the aircraft needs to have the nationality and registration marks (N-number) displayed, so for UAS, only the UA needs an N-number displayed.

14 CFR 91.203 identifies the certifications required for civil aircraft. It specifies that the aircraft needs to carry the airworthiness and registration certificates “within it,” and that the airworthiness certificate needs to be “legible” to the crew. Although only the airworthiness certificate is specifically called out as being legible to the crew, the pilot is also responsible for ensuring the aircraft is registered prior to operating in the NAS. Therefore, it would be prudent to require that a copy of the registration certificate be kept with the control station(s).

There should also be a documentation link showing the applicability of the control station and communication link to the UA. The documentation link can be in the form of a Type Certificate

Data Sheet (TCDS) entry, or a logbook entry for the UAS. There should also be a documentation link showing the applicability of the control station and available along with the registration certificate, to the FAA for inspection as required.

Access 5 Position:

UAS are aircraft and as such the recommended approach to registration is to follow the same process for registration as manned aircraft. This will require manufacturers to comply with the requirements for 14 CFR 47, Aircraft Registration and 14 CFR 45, Identification and Registration Marking. In addition, only the UA should be identified with the ‘N’ number registration markings. The documentation linkage necessary to identify the UAS configuration should be provided through the TCDS, and/or a logbook entry for the UAS. The recommended process for the registration of UAS, is similar to the manned aircraft process, and is described below.

UAS Registration Process:

1. The applicant must apply for registration per the appropriate sections of 14 CFR Part 47 to the FAA Aircraft Registry, Department of Transportation, P.O. Box 25504, Oklahoma City, Oklahoma 73125 and comply with the requirements of FAR paragraphs 47.3, 47.7, 47.8, 47.9, 47.11, 47.13, 47.15, and 47.17, as applicable.
2. Obtain the U.S. identification number by making a request to the Aircraft Registry in writing that describes the UA by make, type, model, and serial number and stating that the aircraft has not been registered anywhere.
3. Submit the following to the FAA Aircraft Registry:
 - i. The original (white) and one copy (green) of the Aircraft Registration Application, Aeronautical Center Form 8050-1. Photocopies and computer generated copies of this form are not acceptable for the registration of aircraft. Application Forms may be obtained from the Aircraft Registry Branch or a local FAA Flight Standards District Office (FSDO).
 - ii. The original bill of sale, ACC Form 8050-2, or other evidence of ownership authorized by FAR paragraphs 47.33, 47.35 or 47.37 for aircraft registration.
 - iii. The fee required by FAR 47.17.
4. Place the duplicate copy (pink) of the Aircraft Registration Application, Form 8050-1 in the aircraft as temporary authority. Keep another copy of the Registration Application with the control station.
5. Mark the unmanned aircraft (UA) in accordance with FAR Part 45.
6. When the Certificate of Aircraft Registration is received, place the original in the UA, and a copy with the control station(s).

Project Coordination:

SEIT	Stratcom	ID	PM				