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FAA Releases Two Final Rules to Advance Drone Integration

Joel E. Roberson, Anita M. Mosner, Marina Veljanovska O'Brien, and Ben Slocum*

The Federal Aviation Administration released two Final Rules intended to accelerate the integration of unmanned aircraft systems—or drones—into the national airspace system. The first Final Rule establishes a federal regulatory framework for the remote identification of drones, and the second allows for drones to be flown over people, at night, and over moving vehicles. The authors of this article explain the new rules, which will enable a new wave of innovation in drone manufacturing and operations.

The Federal Aviation Administration ("FAA") on December 28, 2020, released two Final Rules intended to accelerate the integration of unmanned aircraft systems ("UAS")—or drones—into the national airspace system. The first Final Rule establishes a federal regulatory framework for the remote identification of drones, and the second allows for drones to be flown over people, at night, and over moving vehicles. Together, these Rules will enable the nationwide deployment of advanced drone operations, and free drone operators from the burden of having to seek operation-specific waivers.

Background

The FAA had to review concerns about the safety of flights over people before it could freely permit drone flights beyond visual line of sight. In February 2016, the FAA empaneled an aviation rulemaking committee[1] to provide a consensus recommendation for a federal regulatory framework for safe drone operations over people. The FAA's intention to issue a proposed rulemaking by December 2016 was derailed during the interagency review process, with law enforcement agencies insisting that a remote identification standard be put in place before the FAA permitted such operations.

On February 13, 2019, the FAA published the much anticipated Notice of Proposed Rulemaking ("NPRM")[2] to allow operations of

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small drones over people and at night, but noted that the NPRM could not be made final until a remote identification standard was in place. On December 31, 2019, the FAA published its NPRM[3] on remote identification.

The Final Rules reflect the FAA's review of the comments received in response to each NPRM, and set forth the new standards for both operations over people and remote identification. This article summarizes the key provisions of each Final Rule.

Remote Identification

The remote identification Final Rule[4] is intended to enable operations over people by providing law enforcement with the ability to identify potentially unsafe drone operations and to assist in the prosecution of violators. The Rule establishes a standard for unmanned aircraft to broadcast a unique identifier that will be accessible to law enforcement and the public. Only law enforcement can use the unique identifier to access personal information about the operator, although it is possible that members of the public could develop systems for tracking and aggregating information about drone flights based on their unique identifiers. Notably, the FAA abandoned the internet-networked remote identification standard set forth in the NPRM, and has instead provided three modified pathways to comply with remote identification requirements.

Means of Compliance

Standard Remote Identification Unmanned Aircraft

Drones can be operated within or beyond visual line of sight if the drone is certified by the manufacturer to locally broadcast:

- Drone Identifying Information: unique identifier (serial number or session identification), latitude/longitude, altitude, and velocity;
- Control Station Information: latitude/longitude and altitude;
- Emergency status, if applicable; and
- Time mark.

Remote Identification Broadcast Module Unmanned Aircraft

Drones can be operated within visual line of sight if the drones have been retrofitted with a separate device that locally broadcasts:

- Drone Identifying Information: serial number of the module, latitude/longitude, altitude, and velocity;
- Take-off Location: latitude/longitude and altitude; and
- Time mark.

FAA-Recognized Identification Area

Drones operating within geographic areas recognized by the FAA as a FAA-Recognized Identification Area ("FRIA") are not required to broadcast identification information so long as they are operated within visual line of sight. The FAA will begin accepting applications for geographic designation as an FRIA 18 months after the effective date of the rule. Eligible applicants include community-based organizations, educational institutions, trade schools, colleges, and universities.

Compliance Dates

Drone manufacturers have 18 months after the effective date to begin producing drones that can meet the Standard Remote Identification capabilities. Drone operators will have one additional year after that to meet one of the three means of compliance.

Unique Identifiers

The Final Rule allows operators to broadcast using a "unique identifier," rather than its drone serial number. As noted above, the Final Rule, unlike the NPRM, does not require that the unique identifier to be generated as a session identification by an internet-networked UAS service supplier ("USS"). The FAA says that it will "develop an alternative strategy" for assigning a unique identifier in the future.

Automatic Dependent Surveillance-Broadcast ("ADS-B") Out

The Final Rule prohibits the use of ADS-B Out by an unmanned aircraft unless specifically authorized by the FAA Administrator. Authorization is likely only for large unmanned aircraft operating in controlled airspace. This is intended to prevent an oversaturation of the ADS-B environment used by manned aircraft to maintain safe operations.

Access to Broadcast Data

The preamble to the Final Rule noted that many commenters raised concerns regarding the potential abuse of identifying information that, under the Final Rule, is required to be broadcast. Although the FAA states that the remote identification broadcast data "is, by nature and intent, public," the Final Rule withholds from the public the personal information that could correlate with the unique identifiers that are broadcast by a drone.

However, the FAA notes that "it is possible that members of the public could develop systems for tracking and aggregating information about UAS flights, but those systems would not include personal information from the FAA's databases." Although many commenters requested it, the FAA declined to create a legal standard before law enforcement could access personal data, noting instead that law enforcement is "bound by all Constitutional restrictions and any other applicable legal restrictions."

Flights Over People and at Night

Current FAA regulations for commercial operations of small unmanned aircraft under 55 pounds[5] require a specific waiver in order to operate drones over people, at night and over moving vehicles. The operations over people Final Rule[6] establishes a standard for unmanned aircraft to be operated over people, at night and over moving vehicles without a waiver. This rulemaking will, therefore, open up significant opportunities for new operations with unmanned aircraft.

Operations Over People

The Final Rule creates four categories of unmanned aircraft that can operate over people based on the aircraft's weight or kinetic energy transferred on potential impact.

Category 1: Small unmanned aircraft in this category:

- Must weigh less than 0.55 pounds, including everything on board or otherwise attached;
- Cannot have any exposed rotating parts that would lacerate human skin;
- Must, if it is being operated in sustained flight over open-air assemblies, comply with the standard remote identification or remote identification broadcast modules discussed above;
- May be operated over moving vehicles only if the overflight is transitory in nature; or is within or over a closed- or restricted-access site, and all people at the site are on notice that a small unmanned aircraft may fly over them; and
- Do not require a means of compliance or declaration of compliance.

Category 2: Small unmanned aircraft in this category:

- Cannot cause injury to a human being that is equivalent to or greater than the severity of injury caused by a transfer of 11 foot-pounds of kinetic energy upon impact from a rigid object;
- Cannot have any exposed rotating parts that would lacerate human skin;
- Cannot contain any safety defects;
- Must, if it is being operated in sustained flight over open-air assemblies, comply with the standard remote identification or remote identification broadcast modules discussed above;
- May be operated over moving vehicles if the overflight is transitory in nature; or is within or over a closed- or restricted-access site, and all people at the site are on notice that a small unmanned aircraft may fly over them; and

- Must have FAA-accepted means of compliance and declaration of compliance, which will typically be established by the drone manufacturer.

Category 3: Small unmanned aircraft in this category:

- Cannot cause injury to a human being that is equivalent to or greater than the severity of injury caused by a transfer of 25 foot-pounds of kinetic energy upon impact from a rigid object;
- Cannot have any exposed rotating parts that would lacerate human skin;
- Cannot contain any safety defects;
- Cannot be operated over open-air assemblies of human beings;
- May only operate over people if the operation is within or over a closed- or restricted-access site where all human beings located therein are on notice that a small unmanned aircraft may fly over them; or the small unmanned aircraft does not maintain sustained flight over any human being unless that human being is directly participating in the drone operation or located under a cover that can provide reasonable protection from a falling drone;
- May be operated over moving vehicles if the overflight is transitory in nature; or is within or over a closed- or restricted-access site, and all people at the site are on notice that a small unmanned aircraft may fly over them; and
- Must have FAA-accepted means of compliance and declaration of compliance, which will typically be established by the drone manufacturer.

Category 4: Small unmanned aircraft in this category must have received an airworthiness certificate from the FAA under 14 C.F.R. Part 21 that does not prohibit operations over people. On September 18, 2020, the FAA published a statement of policy[7] in the *Federal Register* laying out its process for type certification of unmanned aircraft systems. The remote pilot must perform certain maintenance, preventive maintenance, alterations, or inspections to allow the unmanned aircraft to be operated over people.

Operations at Night

Operations at night are allowed if the drones are equipped with flashing anti-collision lights and are operated by a remote pilot with sufficient training and testing. The anti-collision lighting must be visible for three statute miles and have a flash rate sufficient to avoid a collision. The operator must complete either an updated initial test or an updated recurrent online training prior to operating at unmanned aircraft at night.

Operations Over Moving Vehicles

The rule allows certain operations over moving vehicles when they are transitory in nature, at a closed- or restricted-access site, or by an unmanned aircraft that has received an FAA-type certificate. Unmanned aircraft that fit within Categories 1, 2, and 3 drones can transit over moving vehicles, so long as they either do not maintain sustained flight over the cars or they are on a closed/restricted site where people know a drone might fly over them.

Possession of Remote Pilots Certificate

A remote pilot, owner, or person manipulating the controls of an unmanned aircraft must have their remote pilot certificate in their physical possession and readily available to show upon request by the FAA; National Transportation Safety Board; Transportation Security Administration; or any federal, state, or local law enforcement officer. A law enforcement officer requesting to view a remote pilot's certificate is subject to all of the same Fourth Amendment requirements as in other constitutionally protected searches.

Conclusion

These two Final Rules constitute the most significant regulatory actions to integrate drones into the national airspace system since the FAA promulgated the Part 107 regulations in 2016. These Rules will enable a new wave of innovation in drone manufacturing and operations.

Notes

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1. https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/MUASARC-02242016.pdf.

2. Operation of Small Unmanned Aircraft Systems Over People (NPRM), 84 Fed. Reg. 3856 (Feb. 13, 2019), *available at* https://www.govinfo.gov/content/pkg/FR-2019-02-13/pdf/2019-00732.pdf.

3. Remote Identification of Unmanned Aircraft Systems (NPRM), 84 Fed. Reg. 72438 (Dec. 31, 2019), *available at* https://www.govinfo.gov/content/pkg/FR-2019-12-31/pdf/2019-28100.pdf.

4. Remote Identification of Unmanned Aircraft (Final Rule), 86 Fed. Reg. 4390 (Jan. 15, 2021), *available at* https://www.govinfo.gov/content/pkg/FR-2021-01-15/pdf/2020-28948.pdf.

5. 14 C.F.R. Part 107.

6. Operation of Small Unmanned Aircraft Systems Over People (Final Rule), 86 Fed. Reg. 4314 (Jan. 15, 2021), *available at* https://www.govinfo.gov/content/pkg/FR-2021-01-15/pdf/2020-28947.pdf.

7. Type Certification of Certain Unmanned Aircraft Systems (Notice of Policy), 85 Fed. Reg. 58251 (Sep. 18, 2020), *available at* https://www.govinfo.gov/content/pkg/FR-2020-09-18/pdf/2020-17882.pdf.