2014 International Conference on Unmanned Aircraft Systems (ICUAS)
May 27-30, 2014. Orlando, FL, USA

# FAA JURISDICTION TO REGULATE UAS OPERATIONS BELOW MINIMUM ALTITUDES AND OUTSIDE OF NAVIGABLE AIRSPACE

John R. Copley, Esquire

**Abstract:** With the proliferation of unmanned aircraft systems in the marketplace and demand for their services, commercial unmanned aircraft systems developers and operators, both large and small have begun to engage in commercial operation of unmanned aircraft at low altitudes, while there has been little assertion that unmanned operations are not subject to jurisdiction of the Federal Aviation Administration within air space above certain minimum altitudes prescribed for flight. Many developers and operators have done so without any authorization or licensing on the assumption that no authorization is required because the Federal Aviation Administration lacks the jurisdiction to regulate operations of unmanned aircraft at low altitudes. While a recent decision by the National Transportation Safety Board dismissed an enforcement complaint against an operator of a small unmanned aircraft at low altitudes, it is unlikely that the Board or a Federal court will find that the agency lacks jurisdiction over operations at low altitudes. Other unmanned aircraft operators have sought authorization through the very limited and commercially restrictive approval mechanisms currently developed for testing and integrating unmanned aircraft into the national air space. Non-commercial recreational use of model aircraft have been covered by a separate Federal Aviation Administration policy and are not the focus of this article.

*Keywords; Federal Aviation Administration (FAA); Federal Aviation Regulations (FARs); National Transportation Safety Board (NTSB); Administrative Law Judge (ALJ); Unmanned Aircraft Systems (UAS).*

Mr. Copley is a member of Garofalo Goerlich Hainbach PC and holds a J.D. from the University of Virginia School of Law (email: jcopley@ggh-airlaw.com).

## 1. INTRODUCTION

While there is a plethora of assertions and theories in the popular press that the FAA lacks jurisdiction to regulate the operation of UAS at low altitudes and entrepreneurs are free to develop and operate their systems without interference from the FAA, most have focused upon two basic assumptions. The primary focus of the lack of jurisdiction is based upon a general assumption that the FAA's jurisdiction does not extend all the way to the ground, but only encompasses navigable airspace above certain minimum altitudes. Enthusiasm for this conclusion has been furthered by a recent decision by a NTSB ALJ that granted a defendant's motion to dismiss an FAA enforcement action against the defendant for careless or reckless operation of a UAS at altitudes below 400 feet. A second basis for the assumption of a lack of jurisdiction is derived from a theory that operations at low altitude over private property is somehow protected from government interference under the Fifth Amendment.

With regard to the first assertion, the FAA is appealing the recent ALJ NTSB decision to the full NTSB, which has the effect of staying the decision until the NTSB rules. The ALJ decision itself does not deny the FAA's jurisdiction over operations at or below 400 feet, but instead indicates that the FAA has not promulgated regulations that would form a basis for enforcement against such operations. Thus, the FAA could remedy the deficit through a rulemaking promulgating enforceable regulation. The FAA itself has consistently asserted through its press releases and guidance that there is no gray area regarding its jurisdiction over UAS, and that any commercial development or use of UAS in the national air space requires its approval.

With regard to the second assertion, while regulating aircraft at low levels over a landowner's

own property may constitute a taking, such regulation likely would not constitute a prohibited taking under the Fifth Amendment as it does not impose an undue burden upon the landowner or frustrate a landowner's expected use of his property.

For those UAS developers and operators wishing to comply with the FAA's policy and regulations and willing to accept the commercially restrictive requirements, there are three principle means of obtaining FAA authorization for limited commercial purposes. An operator of a private civil aircraft may obtain an experimental airworthiness certificate, although such certificate will be limited to research and development, training, or marketing studies. For an operator of a public aircraft, it is possible to obtain a certificate of waiver or authorization permitting the operation of such un-manned aircraft. The last means of engaging in UAS operations is through operating within one of the six recently designated UAS test sites, which will develop a means of giving parties interested in using the test site access.

## 2. POPULAR PRESS AND FAA POWER TO REGULATE LOW FLYING UAS

While the popular press regarding UAS operations may conclude that the FAA cannot restrict UAS operations that occur either in airspace below 500 feet (the statutory minimum safe altitude over other than congested areas), or over property owned by the operator, the FAA disagrees and clearly has asserted such jurisdiction. News articles suggest that there is a growing industry of commercial UAS operating below the minimum safe altitude for navigational airspace without authorization despite FAA warnings that it will bring enforcement actions for such unauthorized use of UAS [1]. In response to unauthorized operations, the FAA has issued numerous cease and desist letters. The issuance of such cease and desist letters has affected not only potential commercial drone companies and individuals seeking to engage in commercial activities with drones, but even university journalism programs designed to teach the proper use of UAS for news gathering, which FAA asserts do not fall within the exempted category of non-commercial hobbyist modelers [2].

Many of the articles concerning, and advocating for, UAS operations suggest that FAA's jurisdiction over UAS operations is limited and operators may safely ignore warnings from FAA to cease and desist. The basis asserted for FAA's supposed lack of jurisdiction is two pronged, (i) FAA under its organic statute lacks jurisdiction over UAS operations under minimum altitude outside of navigable airspace, and (ii) a landowner's right to use airspace above its property prohibits FAA from regulating UAS operations in lower altitudes. One recent article in the New York Times regarding use of drones in the real estate industry captures both prongs noting that “real estate agents and drone pilots say they keep the machines on private property and fly them below 400 feet — the accepted ceiling for model airplanes,” although the FAA's model airplane guidelines do “not apply to commercial drones” [3].

Much of the enthusiasm for challenging FAA jurisdiction derives from a recent enforcement action undertaken by the FAA against a commercial drone enterprise in Charlottesville, Virginia [4]. The respondent's reply in that action cites both a limitation on FAA jurisdiction below minimum altitudes for navigable airspace and landowners' rights as a basis for dismissal of the FAA's complaint in the action [5]. In March, the ALJ in the case issued his decision ordering that the FAA's order be vacated and set aside and the proceeding be terminated with prejudice (“Decision”) [6].

The Decision did not address the respondent's assertion regarding landowners' rights. Instead, the Decision focused upon the FAA's failure to articulate a basis for its jurisdiction over the particular device used and the operations at issue. The ALJ found that the device in question was not to be considered an “aircraft” as defined in 49 U.S.C. 40102(a)(6) over which the FAA has jurisdiction, but that it was a “model aircraft” subject only to voluntary compliance guidelines promulgated by the FAA in an advisory

circular [7]. The ALJ further found that the FAA's assertion of jurisdiction under its own policy notices was without effect as a policy notice cannot form a basis for asserting an enforcement action. Such use of a policy notice is to be considered invalid since either as an internal policy notice it cannot be binding, or if the notice is meant to serve as regulations it is invalid because it was not promulgated in accordance with the rulemaking requirements imposed on Federal agencies. The ALJ found that as a model aircraft the UAS operations at issue were only subject to the FAA's safety policy guidelines applicable to such devices, including operation below 400 feet.

On March 7, 2014, the FAA announced that it was appealing the ALJ's decision to the full NTSB, which has the effect of staying the decision until the full Board rules.

## 3. FAA JURISDICTION TO REGULATE UAS OPERATED BELOW MINIMUM ALTITUDE

The operation of any aircraft, with limited exceptions not relevant to this discussion, is governed by the operational and navigational rules of Part 91 of the FARs [8]. The FARs define an aircraft as "a device that is used or intended to be used for flight in the air," which reflects the statutory definition of "... any contrivance invented, used, or designed to navigate, or fly in, the air" [9][10]. The FARs further provide that no person may operate an aircraft unless it has an appropriate and current airworthiness certificate [11]. The current FAA policy for operation of UAS is that "no person may operate a UAS in the National Airspace System without specific authority" [12]. The FAA has also already determined that unmanned aircraft, despite in many cases their light weight, are not considered ultra-lights and should be treated as other civil aircraft [13].

The Decision, however, found that the UAS in question was not an aircraft subject to the requirements of the FARs. The ALJ pointed out that despite the assertion by the FAA that the UAS in question was an aircraft requiring a certificate of airworthiness, "the FAA has not deemed every device used for flight in the air to be within" the regulatory definition of aircraft in FAR Section 1.1, pointing in particular to a definition of ultralights outside of the category of aircraft. The ALJ further concluded that since the FAA had not issued regulatory rules governing model aircraft operations as it had for ultralights, its assertion of jurisdiction in the particular case is invalid. The Decision did not address whether the FAA had jurisdiction over ultralights prior to its promulgation of a specific category for such devices or how the FAA had any jurisdiction over ultralights if they did not fit within the statutory definition of aircraft. While the FAA has determined in its internal policy that "an unmanned aircraft is a device that is used, or is intended to be used, for flight in the air with no onboard pilot," which can "range in size from wingspans of six inches to 246 feet . . . and can weigh from approximately four ounces to over 25,600 pounds," [12] the Decision found that the FAA could not on its own initiative without a formal rulemaking promulgate such a policy as a binding regulations. Due to the regulatory implications of the ALJ decision, the full NTSB is likely to focus upon these definitional issues.

While often cited in the popular press as a jurisdiction boundary, the limit of 400 feet was an arbitrary guideline proposed by the FAA model aircraft [7]. Navigable airspace over which FAA has direct jurisdiction is defined as the "airspace above the minimum altitudes of flight prescribed by regulations . . . *including airspace needed to ensure safety in the takeoff and landing of aircraft*" [14]. Minimum altitudes are defined generally as 1,000 feet above the highest obstacle over congested areas, and 500 feet above the surface, for other than congested areas, and even lower over sparsely populated areas (no closer than 500 feet to any person, vehicle, or structure) [15]. Minimum safe altitudes for helicopters and powered parachute or weight-shift-control aircraft is even less than the 500 feet minimum prescribed for fixed winged aircraft [15]. In addition, in the event of a power failure, minimum altitude is one that would allow an emergency landing without undue hazard to persons or property on the surface

[15]. Thus, the definition of minimum altitude includes the airspace above as well as below specified altitudes, depending on the type of aircraft and the particular operating environment.

At least one Federal district court has described the FAA's jurisdiction over airspace in extremely broad terms referencing that the jurisdiction would extent to all of the "navigable circumambient atmosphere of the United States" [16]. The jurisdiction is considered broadly such that "[t]here can be no air pocket so closed and confined within the geographical limits of any state as to be incontiguous to the interstate and international highways of the air" [16]. Notwithstanding such broad jurisdiction over navigable airspace, however, the question remains as to the FAA's jurisdiction to regulate operations below the minimum altitudes outside of navigable airspace.

The FAA Chief Counsel's office has emphasized that FAA jurisdiction includes not only the navigable airspace, but "ANY NAVIGATION OF AIRCRAFT WHICH DIRECTLY AFFECTS, OR WHICH MAY ENDANGER SAFETY IN, INTERSTATE, OVERSEAS, OR FOREIGN AIR COMMERCE" [17]. Thus, in the view of the FAA, the prohibition of UAS operations below minimum altitudes is not an extension of the navigable airspace, but a limitation on the use of non-navigable airspace required to protect the safety of navigable airspace in which interstate, overseas, and foreign air commerce occurs.

This extension of jurisdiction beyond navigable airspace is analogous to the extension of jurisdiction over interstate movement to include intrastate movement that affects interstate commerce. The fact that a particular flight is not in navigable airspace and does not involve an interstate movement does not remove it from FAA jurisdiction. The NTSB has concluded that "[i]t is well settled that the FAA's authority has been broadly construed to extend to such [intrastate] flights because of their safety impact on interstate air commerce [18].

FAA jurisdiction over UAS operations in non-navigable airspace involves the FAA's assertion of jurisdiction through safety regulation related to the airworthiness of the aircraft, and the competence of the "pilot" operating the aircraft. In its recently released roadmap outlining its policy toward UAS operations, the FAA noted that it was focused on overall safety in three areas: "equipment, personnel, and operations and procedures," and that just as standards and minimum levels of safety are applied to any new civil aircraft, "regardless of the airspace class where it might be flown," the same will be applied to UAS [19]. It is these three basic safety concerns that have been applied to manned aircraft operating within as well as outside of navigable airspace.

In a 1944 case, a Federal district court addressed a challenge to the authority of the then newly formed Civil Aeronautics Board to prohibit a person who did not hold "a valid pilot certificate" or an aircraft that did not possess an "airworthiness certificate," from operating in airspace outside of "commercial airroutes," a concept now readily accepted, but somewhat novel at the time for pilots who had not previously been subjected to such requirements by a Federal agency [20]. The court in *Drumm* concluded that the defendant's contention that the CAB had overstepped its jurisdiction in requiring licensing of operator and aircraft operating outside of "commercial airroutes" was "without merit," finding that "any operation of any aircraft in the air space * * * either directly affects, or may endanger safety in, interstate, overseas, or foreign air commerce; * * * it is necessary that all pilots and aircraft * * * be certified * * * for the protection of safety in air commerce * * *," and therefore the requirements of a valid pilot's license and certificate of airworthiness for aircraft operating outside of known commercial air routes were within the powers conferred by Congress in creating the CAB [20]. Thus, FAA jurisdiction over the operation of UAS outside of navigable airspace depends primarily on the need to ensure the safety of navigable airspace used in interstate commerce. While one may disagree at what point regulations of small UAS systems operating below minimum altitudes of navigable airspace are

required to ensure the safety of navigable airspace, any court evaluating the FAA determination will "give due deference to the agency especially when the agency action involves evaluating complex scientific or statistical data within the agency's expertise" [21]. Thus, a determination by the FAA that it must regulate and require licensing of both aircraft and pilot of UAS operating outside of navigable airspace in commercial ventures is likely to be given due deference by the full NTSB and any court reviewing the FAA policy.

## 4. FIFTH AMENDMENT CONSIDERATIONS APPLIED TO LANDOWNER RIGHTS AND REGULATION OF UAS OPERATIONS

It is also argued that FAA's jurisdiction over the operation of UAS is limited by the interest and expectation of landowners in exercising their rights in the airspace over their land. The Supreme Court has noted that "[t]he navigable airspace which Congress has placed in the public domain is 'airspace above the minimum safe altitudes of flight prescribed by the Civil Aeronautics Authority'" [22, p. 263]. The Supreme Court further observed that "[i]f that agency prescribed 83 feet as the minimum safe altitude, then we would have presented the question of the validity of the regulation" [22, p. 263]. While this might not prohibit the FAA from assuming jurisdiction over airspace below such altitude, the ruling clearly implies that if the FAA were to define navigable airspace to include very low minimum safe altitude, the resulting use of such airspace by aircraft would create an issue of taking under the Fifth Amendment. The Court had previously specifically noted that "[i]f, by reason of the frequency and altitude of the flights, respondents could not use this land for any purpose, their loss would be complete . . . . [and] [i]t would be as complete as if the United States had entered upon the surface of the land and taken exclusive possession of it." [22, p. 261] Thus, the FAA's ability to define minimum safe altitudes cannot be exercised in a way that is so low as it constitutes a taking unless the land owner is compensated. However, the FAA's ability to exercise jurisdiction in airspace at altitude lower than the minimum safe altitude would not appear to be at issue. The purpose of the takings clause in the Fifth Amendment is to prevent "Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole" [23]. Requiring registration, airworthiness and competency of pilots for operation of UAS over a landowner's property is unlikely to be considered a taking.

In analogous water navigation cases involving takings, the Supreme Court has made clear that the jurisdictional "navigational servitude [i]s dominant no matter how the question of [] ownership is resolved" [24]. The Court in Cherokee found that there is no taking where the limitation on an owner's use of its land is the result of a lawful exercise of a power to which such owners' interests are subject. Thus, whether the FAA's prohibition of operation of UAS below 500 feet may be considered a taking, does not change the FAA's ability to assert jurisdiction over such operations. Moreover, given similar cases involving water navigation, it would appear that the FAA's regulation of operation of UAS below 500 feet would not be considered a taking, but a lawful exercise of its powers related to its jurisdiction under the commerce clause.

## 5. CURRENT BASIS FOR OBTAINING FAA AUTHORIZATION FOR UAS OPERATIONS

Prior to designation of UAS test sites, the FAA issued authorization for operations of UAS in the same manner as for manned aircraft, namely through experimental airworthiness certificates, exemptions from specific sections of the FARs, issuance of certificates of waiver or authorization, and even issuing restricted category type certificates.

For civil aircraft the FAA has issued experimental airworthiness certificates, while for public aircraft has issued certificates of waiver or authorization ("COAs"). A public aircraft, generally, is defined as one that is only for the

United States government or owned and operated by the government of a state, the District of Columbia, or a territory or possession of the U. S. or a political subdivision. Operators of public aircraft include federal, state and local agencies and qualifying universities. A civil aircraft means an aircraft other than a public aircraft.

The FAA has issued a number of individual aircraft airworthiness certificates in the experimental category to specific UAS operators, although as noted above, the operation of such aircraft is limited. Such a special airworthiness certificate in the experimental category is issued to operate an aircraft that does not have a type certificate, which would permit its mass production, or does not conform to its type certificate and is in a condition for safe operation. However, these experimental airworthiness certificates are restricted to research and development, showing compliance with regulations, crew training, exhibition, and market surveys. The experimental airworthiness certificate may also be subject to special provisions unique to the proposed operation.

COAs are available to public entities that want to fly a UAS in civil airspace. Common uses for COAs include law enforcement, firefighting, border patrol, disaster relief, search and rescue, military training, and other government operational missions. The COA allows an operator to use a defined block of airspace and includes special provisions unique to the proposed operation. For instance, a COA may require flying only under Visual Flight Rules (VFR) and/or only during daylight hours. COAs usually are issued for a specific period, sometime up to two years.

In addition, the FAA has now issued two type certificates in the restricted category, which permits manufacturers to produce aircraft to a specific type design, for two UAS models (the Scan Eagle and Aerovironment's Puma) that have been certified for commercial use, but they are only authorized to fly in the Arctic.

Lastly, the FAA has now designated six UAS test sites operated by the University of Alaska, State of Nevada, New York's Griffiss International Airport, North Dakota Department of Commerce, Texas A&M University, and Virginia Polytechnic Institute and State University (Virginia Tech). Each test site operator is to manage the test site in a way that will give access to parties interested in using the site. The FAA will oversee the process and ensure that each site operator sets up a safe testing environment and to provide oversight that guarantees each site operates under strict safety standards.

## 6. CONCLUSION

Despite the recent ALJ NTSB decision finding a lack of FAA enforcement jurisdiction over operation of model aircraft sized UAS, the statutory jurisdictional provisions and case law, while not addressing UAS operations directly, imply that the FAA's assertion of jurisdiction likely will be upheld in one form or another when reviewed by the full NTSB. This is not to say that the UAS industry should avoid seeking an immediate authorization for small commercial UAS operations below 400 feet. This may be a matter of convincing the FAA to act by rulemaking or exemption to authorize small UAS commercial operations below 400 feet. Lastly, while the case law and statutory provision may favor the FAA in an assertion of jurisdiction, a decision by the full NTSB upholding the ALJ's decision likely would open up a number of opportunities to UAS entrepreneurs.

Short of a favorable decision from the full NTSB or a rulemaking or exemption action by the FAA, UAS operators are forced to consider one of the means through which FAA has to date offered to authorize UAS operations. It is possible to obtain an experimental airworthiness certificate, although such certificate will be limited to research and development, training, or marketing studies. For public aircraft, it is possible to obtain a certificate of waiver or authorization permitting the operation of such un-manned aircraft. Lastly, UAS operator and developers may be able to obtain operating authorization through one of the six recently designated UAS test sites.

## 7. ACKNOWLDGEMENT

Many thanks to Jason Maddux, Esquire of GGH for his assistance in editing.

## REFERENCES

[1] "Drones already flying under the radar," *Chicago Tribune,* Dec. 12, 2013.
[2] "2 Drone Journalism Programs Seek Federal Approval to Resume Flying," *The Chronicle of Higher Education,* Aug. 27, 2013.
[3] "Still Unconvinced, Home Buyer? Check Out the View From the Drone," *New York Times*, Dec. 24, 2013.
[4] "Drone Pilot Challenges FAA on Commercial Flying Ban*," Scientific American*, Nov. 1, 2013.
[5] Respondent's Reply Memorandum of Law In Further Support of His Motion to Dismiss, *Huerta v. Pirker*, NTSB Docket No. CP-217 (December 10, 2013).
[6] Decisional Order, *Huerta v. Pirker*, NTSB Docket No. CP-217 (March 6, 2014).
[7] "Model Aircraft Operating Standards," *Advisory Circular 91-57,* June 9, 1981.
[8] 14 eC.F.R. § 91.1 (2014).
[9] 14 eC.F.R. § 1.1 (2014).
[10] 49 U.S.C. § 40102(a)(6) (2011).
[11] 14 eC.F.R. § 91.203 (2014).
[12] "Unmanned Aircraft Operations in the National Airspace System," 72 Fed. Reg. 6689 (February 13, 2007).
[13] DENIAL OF EXEMPTION, INSITU, INC., Exemption No. 10143, Docket No. FAA-2007-28589 (September 27, 2010).
[14] 49 U.S.C. § 40102(a)(32) (2011).
[15] 14 eC.F.R. § 91.119 (2014).
[16] *In re Veteran's Air Express Co.,* 76 F. Supp. 684, 689 (D.C. N.J. 1948).
[17] "Request for Interpretation of Air Commerce*,"* John H. Cassady, Assistant FAA Chief Counsel (March 18, 1985).
[18] *Administrator v. Michael Dan Ferguson*, NTSB Order EA-1822 (September 3, 1982).
[19] Federal Aviation Administration, "Integration of Civil Unmanned Aircraft Systems in the National Airspace System," p. 9 (2013).
[20] *United States v. Drumm*, 55 F. Supp. 151, 155, 156 (D. Nev., 1944).
[21] *NRDC v. EPA,* 194 F.3d 130 (D.C. Cir., 1999).
[22] *United States v. Causby*, 328 U.S. 256 (1946).
[23] *Penn Cent. Transp. Co. v. City of New York,* 438 U.S. 104, 123 (1978).
[24] *United States v. Cherokee Nation of Oklahoma*, 480 U.S. 700 (1987).