

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.656

National Policy

Effective Date:
4/4/23

Cancellation Date:
4/4/24

SUBJ: LOA A130, Authorization to Operate an Unmanned Aircraft System Equipped with an Aerial Ignition System Under 14 CFR Part 137

1. Purpose of This Notice. This notice provides guidance to Federal Aviation Administration (FAA) Flight Standards (FS) Safety Assurance offices to evaluate an applicant for a Letter of Authorization (LOA) A130 because the operator proposes to use an Unmanned Aircraft System (UAS) equipped with a dangerous weapon¹ under Section 363 of the FAA Reauthorization Act of 2018² (Section 363) for agricultural aircraft operations and therefore requires the Administrator's authorization. The FAA has determined that an aerial ignition system qualifies as a dangerous weapon under Section 363. Therefore, this notice focuses on the application process to receive authorization for the carriage of an aerial ignition system on a UAS. This notice also addresses initial Title 14 of the Code of Federal Regulations (14 CFR) part 137 certification, adding a UAS equipped with an aerial ignition system to an existing part 137 certificate, and conducting part 137 pilot in command (PIC) knowledge and skill tests using a UAS equipped with an aerial ignition system. Additionally, this notice introduces new part 137 LOA A130 to be issued via the Web-based Operations Safety System (WebOPSS).

2. Audience. The primary audience for this notice is the FS Safety Assurance offices' aviation safety inspectors (ASI) and principal inspectors (PI). The secondary audience includes FS ASIs' Front Line Managers (FLM), office managers, and division managers.

3. Where You Can Find This Notice. You can find this notice on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices and the Dynamic Regulatory System (DRS) at <https://drs.faa.gov>. Operators and the public can find this notice on the FAA's website at https://www.faa.gov/regulations_policies/orders_notices and DRS.

¹ Dangerous weapon, as defined in Title 18 of the United States Code (18 U.S.C.) § 930(g)(2), means "a weapon, device, instrument, material, or substance, animate or inanimate, that is used for, or is readily capable of, causing death or serious bodily injury, except that such term does not include a pocket knife with a blade of less than 2 ½ inches in length."

² Section 363 of the FAA Reauthorization Act of 2018, Pub. L. No. 115-254, 132 Stat 3186 (Oct. 5, 2018).

4. Background.

a. Aerial Ignition Systems. Aerial ignition systems (or aerial ignition devices) are traditionally used by manned helicopters³ to perform prescribed burn or wildland fire operations for the purpose of forest preservation. However, some aerial ignition systems are attached to UAS. For example, the Drone Amplified IGNIS system is attached to a UAS.

b. Part 137 Applicability. Forest preservation is an agricultural aircraft operation as defined in part 137, § 137.3. Therefore, a civil operator conducting prescribed burn or wildland fire operations using a UAS equipped with an aerial ignition system for the purpose of forest preservation also requires a part 137 agricultural aircraft operator certificate.

c. Grant of Exemption. Part 137 agricultural aircraft operator certificate holders (CH) operating a UAS must hold a grant of exemption from certain sections of part 137. In order to conduct prescribed burn or wildland fire operations, the grant of exemption must authorize the use of an aerial ignition system.

d. Section 363 Prohibition Regarding Weapons and Issuance of LOA. Aerial ignition systems meet the definition of a dangerous weapon under Section 363. Section 363 states, “Unless authorized by the Administrator, a person may not operate an unmanned aircraft or unmanned aircraft system that is equipped or armed with a dangerous weapon.” (See the full text of Section 363 and applicable 18 U.S.C. definitions in Appendix B of this notice.) Therefore, the operation of a UAS equipped with an aerial ignition system must be authorized by the Administrator.

e. Section 363 Authorizations for Non-Part 137 Operations. This notice only provides guidance to FAA personnel regarding Section 363 authorizations for part 137 operations. For Section 363 authorizations for public aircraft operations or other special circumstances warranting approval, please contact the General Aviation and Commercial Division, Operations Group (AFS-830) at 9-AFS-800-Correspondence@faa.gov.

5. Policy.

a. Objective. When an FS Safety Assurance office is evaluating whether to authorize an applicant, operator, or PIC to operate a UAS carrying an aerial ignition system, the office must determine whether the applicant is able to conduct safe and secure operations with a UAS equipped with a dangerous weapon, the aerial ignition system, under Section 363. This determination is made based on the findings from the part 137 certification document compliance phase, demonstration and inspection phase, and the pilot knowledge and skill tests.

(1) When evaluating an applicant for a part 137 certificate proposing to use a UAS equipped with an aerial ignition system, the objective is to either issue an agricultural aircraft operator certificate and LOAs, or a denial of a certificate.

³ Refer to National Wildfire Coordinating Group (NWCG) Standards for Aerial Ignition publication PMS 501, which describes various aerial ignition systems.

(2) When evaluating an existing part 137 CH requesting authorization to use a UAS equipped with an aerial ignition system, the objective is to determine whether to add a UAS equipped with an aerial ignition system to their part 137 LOA A003, Aircraft Authorization, and issue LOA A130.

(3) When evaluating a remote PIC, the objective is to determine whether the remote PIC is able to conduct aerial ignition operations in a safe and secure manner, and issue appropriate documentation.

b. Procedures for New Applicant.

(1) Certification Process. Follow the certification process for a part 137 operator using guidance in FAA Order 8900.1, Volume 2, Chapter 8, Section 1, The Certification Process of a Part 137 Operator, and Volume 5, Chapter 11, Section 1, Qualify a Pilot in Command.

(a) Generally, an applicant for an LOA A130 for the UAS carriage of an aerial ignition system to conduct prescribed burns and wildland fire operations will not be dispensing economic poisons as defined in § 137.3. However, as stated in § 137.19(a), if the UAS operator also seeks to dispense economic poisons, they must demonstrate the knowledge required in § 137.19(e)(1)(ii)–(iv). For small UAS operations where the operator proposes to carry hazardous materials (HAZMAT) for other types of agricultural aircraft operations than prescribed burn or wildland fire operations, the operator must hold an exemption specifically authorizing dispensing of that HAZMAT.

(b) Prior to the formal application phase, the applicant must have submitted a petition for exemption and received an exemption from the FAA to operate a UAS for the purposes of performing prescribed burn or wildland fire operations.

(c) Prior to the demonstration and inspection phase, the applicant must have been issued a grant of exemption to use a UAS for the purposes of performing prescribed burn or wildland fire operations.

(2) Document Compliance Phase.

(a) Verify the unmanned aircraft is registered under either 14 CFR part 47 or part 48. Part 48 applies only to small UAS.

(b) Verify the remote PIC possesses a Remote Pilot Certificate with a small UAS rating issued under 14 CFR part 107 subpart C. Part 137 UAS exemptions require the PIC to have a Remote Pilot Certificate with a small UAS rating.

(c) Review the documents and manuals specified in the grant of exemption and LOA A130 template. The LOA A130 template is available for review in WebOPSS. Ensure the applicant has the documents and manuals specified in the grant of exemption and LOA A130. Obtain copies for your reference, and retain these in the Flight Standards District Office (FSDO) operator file. Electronic copies are acceptable. Review these documents to become familiar with the equipment and operation.

(d) If the substances used in the aerial ignition system are HAZMAT, as defined in Title 49 of the Code of Federal Regulations (49 CFR) part 171, § 171.8, the FS Safety Assurance office must ensure the applicant trains their personnel on the proper handling and stowage of HAZMAT and has a manual that complies with 49 CFR part 175, § 175.9(b)(6)(ii). In accordance with § 175.9(b)(6)(ii), each operator must prepare and keep current a manual containing operational guidelines and handling procedures for the use and guidance of flight, maintenance, and ground personnel concerned in the dispensing or expending of HAZMAT. The manual must be approved by the FAA Principal Operations Inspector (POI) assigned to the operator.

1. Review the operator's manual to determine § 175.9(b)(6)(ii) compliance. The manual may be a separate HAZMAT manual or § 175.9(b)(6)(ii) requirements may be addressed within operational or maintenance manuals. At a minimum, the manual must contain guidelines or procedures which satisfactorily address the safe handling and dispensing or expending of the HAZMAT used in the aerial ignition operation.

2. POIs must seek and receive HAZMAT manual concurrence from the Office of Hazardous Materials Safety (AXH) before the manual is approved per the Hazardous Materials Operation Manuals and Training Programs Memo, dated August 25, 2020. The POI should submit applicable manuals and other relevant documentation to AXH via email at 9-AWA-AXH-HMManualReview@faa.gov.

3. If the POI determines the manual is unsatisfactory, or AXH does not concur that the manual is satisfactory, the POI will notify the operator in writing, indicating the areas of deficiency, and return the manual for correction.

4. If the POI determines the manual is satisfactory, and AXH concurs, the POI will issue the applicant a letter indicating the FAA approves the use of the manual to meet the HAZMAT requirements of § 175.9(b)(6)(ii). Retain a copy of the letter in the FSDO operator file.

Note: The POI must not approve an entire UAS or aerial ignition system operational or maintenance manual; only approve the use of the manual to meet the HAZMAT requirements of § 175.9(b)(6)(ii).

(3) Demonstration and Inspection Phase.

(a) Airworthiness. Typically, UAS are not type certificated aircraft and require a grant of exemption from applicable sections of 14 CFR parts 91, 107, and 137. Although the grant of exemption may provide relief from certain airworthiness regulations, it contains conditions and limitations that provide a level of safety at least equal to that provided by the regulation. Inspectors must determine whether the applicant is able to comply with the grant of exemption's conditions and limitations, and LOA A130's provisions, to ensure the UAS and the aerial ignition system are in a condition for safe and secure operation. Follow guidance in Order 8900.1 Volume 2, Chapter 8, Certification of a Part 137 Operator. Evaluation of airworthiness issues should include the applicant's knowledge of and compliance with:

- UAS manufacturer's inspection and maintenance procedures.
- Aerial ignition system manufacturer's inspection and maintenance procedures.
- Grant of exemption.
- LOA A130 template.

(b) Knowledge and Skill Tests. The applicant or chief supervisor must meet the applicable knowledge and skill requirements of § 137.19(e). Follow guidance in Order 8900.1, Volume 5, Chapter 11, Section 1. LOA A130 requires that the knowledge and skill tests for a remote PIC must include the safe and secure operation of a UAS equipped with an aerial ignition system. In addition, the knowledge and skill tests should include the remote PIC's knowledge of and compliance with:

- Grant of exemption.
- LOA A130 template.
- UAS manufacturer's user manual.
- Aerial ignition system operational manual.
- HAZMAT manual.
- Emergency procedures.
- Lost link and emergency recovery procedures.

(c) Flight Operations Demonstration.

1. Flight operations authorized by LOA A130 require the use of at least one visual observer (VO) as defined in part 107, § 107.3. Any VO participating in Section 363 operations must comply with the requirements listed in § 107.33 throughout the duration of flight operations.

2. The flight operations demonstration should indicate or include:

- Compliance with part 107 (for small UAS).
- Compliance with part 91 (for UAS weighing 55 pounds or more).
- Compliance with part 137.
- Preflight inspection of the UAS and aerial ignition system.
- Operation of the UAS and aerial ignition system. (Ensure PIC verifies electronic locating device is operational prior to flight.)
- Loading and dispensing.

Warning: The applicant may not conduct aerial ignition operations until after they have been issued a part 137 agricultural aircraft operator certificate and LOA A130. Do not permit applicants to dispense material that will ignite or cause a fire during the demonstration. Applicants should either use inert materials or disable the catalyst or ignition system prior to the demonstration.

- Lost link and emergency recovery demonstration. (Ensure dispensing ceases during lost link demonstration.)
- Geofence demonstration. (Ensure dispensing ceases if unmanned aircraft flies outside an area enclosed by the geofence.)

(4) Unsatisfactory Findings. If the demonstration and inspection phase is unsatisfactory, follow guidance in Order 8900.1, Volume 2, Chapter 8, Section 1, and Volume 5, Chapter 11, Section 1.

(5) Satisfactory Findings. If the demonstration and inspection phase is satisfactory:

(a) Follow guidance in Order 8900.1, Volume 2, Chapter 8, Section 1, and Volume 5, Chapter 11, Section 1. The operations inspector administering the knowledge and skill tests must provide an endorsement in the operator's or chief supervisor's logbook, or provide a signed letter of competency acknowledging the test and date passed. See the sample knowledge and skill tests documentation in Appendix C, Knowledge and Skill Tests Documentation, of this notice.

(b) Issue FAA Form 8430-21, Operating Certificate. Annotate "Dispensing of Economic Poisons Prohibited" in the space provided. However, the applicant may be authorized to dispense economic poisons if they satisfactorily demonstrate the knowledge required in § 137.19(e)(1)(ii)–(iv). For small UAS operations where the operator proposes to carry HAZMAT for other types of agricultural aircraft operations than prescribed burn or wildland fire operations, the applicant must hold an exemption specifically authorizing dispensing of that HAZMAT.

(c) For an existing part 137 CH, do not reissue or amend FAA Form 8430-21, unless the CH requests the removal of authority to dispense economic poisons.

(d) Issue part 137 LOAs using WebOPSS. At a minimum, ensure LOAs A001, A002, A003, A004, A005, A007, and A130 are issued.

(e) Document activity using Safety Assurance System (SAS) Activity Recording (AR). Use the applicable activity codes listed below and enter "SEC363" in the "National Use" field.

- Initial part 137 certification: 1202, 3202, or 5302.
- Existing part 137 CH: 1470, 3470, or 5470.
- Knowledge and skill tests only: 1579.

c. Procedures for an Existing Part 137 CH. Conduct the document compliance phase, and demonstration and inspection phase in accordance with subparagraph 5b above, using guidance in Order 8900.1, Volume 2, Chapter 8, Section 1 and Volume 5, Chapter 11, Section 1.

d. Procedures for Knowledge and Skill Tests Only. Sections 137.41(b) and (c) address the knowledge and skill requirements of § 137.19(e). Additionally, LOA A130 requires that the knowledge and skill tests for a remote PIC must include the safe and secure operation of a UAS equipped with an aerial ignition system. Conduct knowledge and skill tests in accordance with

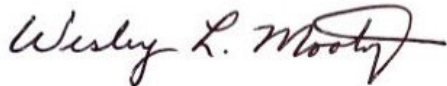
subparagraphs 5b(3)(b) and 5b(3)(c) above, using Order 8900.1, Volume 5, Chapter 11, Section 1 guidance.

6. Guidance. This notice contains the following:

- The sample LOA A130 template in Appendix A, which applies to part 137.
- FAA Reauthorization Act of 2018, PL 115-254, Sec. 363, Prohibition Regarding Weapons, along with 18 U.S.C. § 930(g)(2) and 18 U.S.C. § 2246 definitions in Appendix B.
- A sample statement of competency letter and sample logbook endorsement in Appendix C.

7. Action. FS offices will review the guidance in paragraph 5 above and follow these procedures to evaluate a part 137 certificate applicant, a part 137 CH, or a part 137 PIC who proposes to operate a UAS equipped with an aerial ignition system.

8. Disposition. We will incorporate the information in this notice into Order 8900.1 before this notice expires. Direct questions concerning the information in this notice to AFS-830 at 202-267-1100.



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Appendix A. Sample LOA A130, Authorization to Operate an Unmanned Aircraft System Equipped with an Aerial Ignition System: 14 CFR Part 137

1. The FAA evaluated [CERTIFICATE HOLDER’S NAME], hereinafter referred to as the certificate holder, to determine whether they may safely and securely operate an Unmanned Aircraft System (UAS) equipped with a dangerous weapon, which is the aerial ignition system. The FAA also evaluated the aerial ignition system(s) listed in Table 1 below, hereinafter referred to as the Aerial Ignition System(s), for the purpose of aerial ignition and prescribed burn or wildland fire operations. The FAA found that the Aerial Ignition System(s) meets the definition of “dangerous weapon” under Section 363 of the FAA Reauthorization Act of 2018. Therefore, operation of a UAS equipped with the Aerial Ignition System(s) must be authorized by the Administrator. The FAA also found that the Aerial Ignition System(s) is designed with many built-in safety features; it is a non-lethal weapon that will operate only over sparsely populated areas; and the small size of the unmanned aircraft presents a lower risk than manned aircraft conducting similar operations. These factors in conjunction with the certificate holder’s compliance with the provisions within this Letter of Authorization (LOA) sufficiently mitigate the risks associated with the certificate holder’s operations. Therefore, the FAA determined that the certificate holder may conduct safe and secure operations of UAS equipped with the Aerial Ignition System(s) based on the information provided in its petition for exemption and supporting documents. For these reasons, the FAA issues this LOA in accordance with Section 363 of the FAA Reauthorization Act of 2018, PL 115-254, 132 Stat 3186 (Oct. 5, 2018).

Table 1 – Authorized Aerial Ignition System(s)

Aerial Ignition System Make/Model
[Dropdown List]
[Dropdown List]

2. This LOA authorizes [CERTIFICATE HOLDER’S NAME], holder of agricultural aircraft operator certificate number [CERTIFICATE NUMBER], hereinafter referred to as the certificate holder, to operate a UAS equipped with the Aerial Ignition System(s) in Table 1 above, meeting the definition of a dangerous weapon, provided that they adhere to the following provisions within this LOA.

a. Operations conducted under this LOA are limited to any UAS equipped with the Aerial Ignition System(s) identified in Table 1 above for the purposes of performing prescribed burn or wildland fire operations. The UAS must be listed on the certificate holder’s Title 14 of the Code of Federal Regulations (14 CFR) Part 137 LOA A003.

b. Operations conducted under this LOA must be performed in accordance with this LOA, the Part 137 agricultural aircraft operator certificate [CERTIFICATE NUMBER], and the applicable UAS exemption(s) specified in the certificate holder’s Part 137 LOA A005. The certificate holder may not conduct operations under this LOA without a valid exemption(s) specified in the certificate holder’s Part 137 LOA A005. If a conflict exists between this LOA, the agricultural aircraft operator certificate, and the applicable UAS exemption(s), the more restrictive provision will apply.

c. Operations conducted under this LOA must comply with the most current version of the Aerial Ignition System(s) operational manual, which must be accessible to the remote pilot in command (PIC) of the UAS during all operations conducted under this LOA, and made available to the Administrator upon request.

d. Operations conducted under this LOA, which utilize Aerial Ignition System(s) with hazardous materials (HAZMAT), as defined in Title 49 of the Code of Federal Regulations (49 CFR) Part 171, § 171.8, must comply with the certificate holder's Hazardous Materials Manual required by 49 CFR Part 175, § 175.9(b)(6)(ii). The manual must be current, approved by the certificate holder's FAA Principal Operations Inspector (POI), and accessible to the remote PIC of the UAS during all operations conducted under this LOA, and made available to the Administrator upon request.

e. Operations conducted under this LOA may only occur over sparsely populated areas that have been secured and approved for prescribed burn or wildland fire operations by a Federal, State, or local government agency.

f. The certificate holder must maintain a current list of remote pilots by name and remote pilot certificate number who are authorized to conduct operations under this LOA. This list must be presented for inspection upon request from any authorized representative of the Administrator.

g. Prior to conducting operations under this LOA, the remote PIC must have met the applicable knowledge and skill requirements for agricultural aircraft operations outlined in Part 137. The knowledge and skill tests must include the safe and secure operation of a UAS equipped with the Aerial Ignition System(s) in a manner consistent with how it will be operated under this LOA.

h. No person may manipulate the flight controls of the UAS operated under this LOA unless the person has a valid remote pilot certificate with a UAS rating.

i. The remote PIC of the UAS operated under this LOA must be designated before the flight and cannot transfer their designation for the duration of the flight.

j. All operations conducted under this LOA must use at least one visual observer (VO), defined in 14 CFR Part 107, § 107.3. Any VO participating in operations conducted under this LOA must comply with the requirements listed in § 107.33 throughout the duration of flight operations.

k. The unmanned aircraft (UA) must be equipped with an electronic device that will enable the UA to be quickly located in the event the UA is lost due to a system malfunction. The remote PIC must verify the locating device is operational prior to each flight.

l. The certificate holder must request and receive the FAA's approval prior to making any changes to the UAS, the Aerial Ignition System(s), or the operation that will impact the basis of authorizing this LOA. Any operations that would occur in the absence of such FAA approval will result in the termination of this LOA.

m. Failure to comply with any provision listed in this LOA is a violation of the terms of this LOA and will serve as a basis for its termination.

n. This LOA is nontransferable. It is issued to, and valid only for the certificate holder named in subparagraph 2 above.

o. A copy of this LOA must be accessible and available to the remote PIC at the ground control station during operations that are subject to the provisions of this LOA.

p. This LOA must be presented for inspection upon the request of any authorized representative of the Administrator, or of any Federal, State, or municipal official charged with the duty of enforcing local laws or regulations.

q. This LOA does not constitute a waiver of or exemption from any State or local statute, regulation, or ordinance, or a waiver of any other Federal statute or regulation.

r. This LOA terminates upon expiration of Exemption No. [NUMBER] or later issuance, unless sooner terminated, superseded, or rescinded by the FAA Administrator.

Appendix B. FAA Reauthorization Act of 2018 and Relevant 18 U.S.C. DefinitionsFAA Reauthorization Act of 2018, PL 115-254, SEC. 363., PROHIBITION REGARDING WEAPONS.

(a) IN GENERAL.—Unless authorized by the Administrator, a person may not operate an unmanned aircraft or unmanned aircraft system that is equipped or armed with a dangerous weapon.

(b) DANGEROUS WEAPON DEFINED.—In this section, the term “dangerous weapon” has the meaning given that term in section 930(g)(2) of title 18, United States Code.

(c) PENALTY.—A person who violates this section is liable to the United States Government for a civil penalty of not more than \$25,000 for each violation.

Title 18 of the United States Code (18 U.S.C.) § 930(g)(2). “The term ‘dangerous weapon’ means a weapon, device, instrument, material, or substance, animate or inanimate, that is used for, or is readily capable of, causing death or serious bodily injury, except that such term does not include a pocket knife with a blade of less than 2½ inches in length.”

Title 18 U.S.C. § 2246. “The term ‘serious bodily injury’ means bodily injury that involves a substantial risk of death, unconsciousness, extreme physical pain, protracted and obvious disfigurement, or protracted loss or impairment of the function of a bodily member, organ, or mental faculty.”

Appendix C. Knowledge and Skills Tests Documentation

Figure 1. Sample Statement of Competency Letter

[FAA Letterhead]

[Date]

[Operator's name and address]

Dear [pilot's name]:

This is to certify that [pilot's name], holder of [grade of certificate] pilot certificate [certificate number], has on this date satisfactorily completed the knowledge and skill test for an agricultural aircraft pilot as specified under Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.19(e) and is qualified to serve as pilot in command (PIC) in agricultural aircraft operations using an Unmanned Aircraft System (UAS). In addition, they have demonstrated the ability to safely and securely operate a UAS equipped with the [enter specific Aerial Ignition System(s)] in a manner consistent with operations under Letter of Authorization (LOA) A130.

They [are or are not] authorized to dispense economic poisons.

Sincerely,

[Name, title, and signature of FAA inspector]

Figure 2. Sample Logbook Endorsement

This is to certify that [pilot's name], holder of [grade of certificate] pilot certificate [certificate number], has on this date satisfactorily completed the knowledge and skill test for an agricultural aircraft pilot as specified under Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.19(e) and is qualified to serve as pilot in command (PIC) in agricultural aircraft operations using an Unmanned Aircraft System (UAS). In addition, they have demonstrated the ability to safely and securely operate a UAS equipped with the [enter specific Aerial Ignition System(s)] in a manner consistent with operations under Letter of Authorization (LOA) A130.

They [are or are not] authorized to dispense economic poisons.

[Date]

[Name, title, and signature of FAA inspector]