

JWC 2023 Technology Workgroup Update

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AAPCO Technology Working Group

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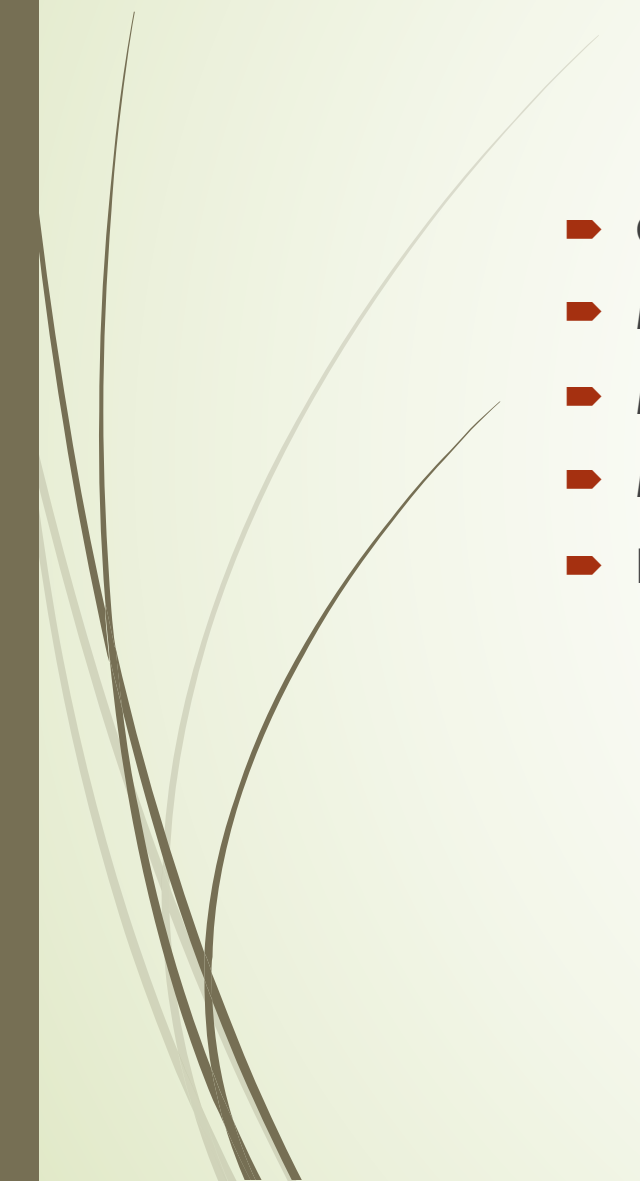
Nathan Davis, Indiana Dept of Ag

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Jerry Everton, Florida Dept of Ag



Activity to Date Technology Working Committee

- ▶ Conducted 2022 AAPCO UAV Survey
 - ▶ Met with actual Drone Pilots (Pioneers in the Industry)
 - ▶ Met with State Licensing Managers
 - ▶ Met with Crop Life America and Industry
 - ▶ PPDC Target Application Committee
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- ▶ Part 107 certificate to fly any drone commercially
- ▶ Part 137 certificate to apply Economic Poisons
- ▶ 49 U.S.C. 44807 exemption for drones greater than 55 pounds.
- ▶ Some state DOT requires pass an exam Unmanned Aircraft System Operator's Knowledge Test to receive state permit.
- ▶ All State licensing exams for aerial application, if you state requires it.
- ▶ **NOTE: FAA has streamlined the Part 137 in the past several months. NO FSDO Inspector conducts field skills and knowledge test now. Applications are made online.**

FAA Component

Guidance on How to Become a Licensed UAV Pesticide Applicator

The Structural Pest Control and Pesticides Division (SPC&PD) of the North Carolina Department of Agriculture and Consumer Services (NCDA&CS) is the lead regulatory agency for regulating pesticides and pesticide applicators in North Carolina ¹. With the recent popularity of Unmanned Aerial Vehicles (UAV's) being used for pesticide applications, there is a need to communicate the regulations that a commercial UAV pesticide applicator must follow to legally apply pesticides. This document serves as guidance to become a licensed aerial applicator using a UAV in North Carolina.

FAA Component

The Federal Aviation Administration (FAA) requires certification for commercial operation of UAV's ². The certification required to operate UAV's that weigh less than 55 pounds is 14 CFR Part 107 ³. UAV's weighing 55 pounds or more can be operated under Part 107 with waivers and exemptions from 14 CFR Part 91 and require exemption from several 14 CFR Part 61, 91, and 137 regulations. The link is provided below for 49 U.S.C. §44807 exemptions ⁴.

In addition, an applicator applying pesticides must also operate under 14 CFR Part 137 of the FAA regulations. 14 CFR Part 137 is a certificate that allows for dispensing economic poisons.

Dispensing any economic poison:

- The FAA defines an economic poison as any substance that acts as a pesticide, plant regulator, or defoliant.
- The FAA considers chemicals used as disinfectants for viruses to fall in the category of economic poisons as defined in Part 137.3.

Dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control.

Engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation. Note: Dispensing of live insects is not included.

A business entity can hold the CFR 14 Part 137 certification and have several applicators operating under the company's Part 137 certificate. The operator of the UAV will be required to pass a skills and knowledge test ⁵. The UAV will be required to be registered with the FAA and a registration number will be assigned to the UAV. The registration number must be legible and securely affixed to the UAV. You can apply for the registration number at the link listed below ⁶.

Although the FAA has exclusive authority over the use of airspace in the United States, including the airspace used by UAV's, the North Carolina Department of Transportation (NCDOT) has the authority to implement and manage regulations pertaining to state laws concerning UAV operations within the state. Commercial UAV operators must take and pass the NCDOT's Unmanned Aircraft System Operator's Knowledge Test. This test is a prerequisite to applying for a state permit ⁷.

Disclaimer

All information provided concerning FAA requirements are for information only. You must contact the FAA for exact guidance with their regulations.

Guidance on How to Become a Licensed UAV Pesticide Applicator

NCDA Component

Any person who applies pesticides commercially by air from a manned fixed wing aircraft, rotary aircraft, or from an unmanned aerial vehicle (UAV) must hold an aerial applicator license. The aerial applicator applicant must pass at a minimum three exams.

- North Carolina Pesticide Applicator Core exam
- Aerial Methods exam
- One exam in the specialty category in which you will work, such as Ag Pest Plant

If you are a new aerial applicator, you must first hold an aerial applicator apprentice license. As an apprentice you will be required to operate under the supervision of a licensed aerial applicator pilot. This pilot can operate fixed wing, rotary, or a UAV. You must document 125 hours of operation and one year of flying experience as a pilot in the field of aerial pesticide application. In addition, an annual inspection fee of twenty-five dollars (\$25.00) shall be submitted for each aircraft to be licensed. The FAA requirements will need to be met for using an UAV.

The North Carolina Department of Agriculture and Consumer Services, Structural Pest Control and Pesticide Division administers the exam to potential licensees. A link has been added below that will give you information on the registration, exam sites, and fees associated with taking the exam ⁸.

A link for study manuals for the exam can be found below ⁹.

The process of becoming a licensed UAV pesticide applicator can be lengthy, involving several licenses and certifications. **A person who applies pesticides commercially without the appropriate licenses are subject to civil penalties.**

Checklist

- FAA Part 107 (small UAV certificate less than 55 pounds) if greater than 55 pounds a waiver from FAA must be granted (§44807).
- FAA Part 137 (Economic Poisons) certificate
- FAA Certificate of Authorization
- Registration of the Drone with FAA (nontransferable)
- NCDOT Permit
- Pass NCDA Core, Aerial Methods, and Specialty Exams
- NCDA Aerial Applicators License (Apprentice (029) or Regular license (027))
- NCDA Aerial Applicator's Contractor's License (028)

Links

1. <https://www.ncagr.gov/SPCAP/index.htm>
2. <https://www.faa.gov/uas>
3. <https://www.ecfr.gov/current/title-14/part-107>
4. https://www.faa.gov/uas/advanced_operations/certification/section_44807
5. https://www.faa.gov/uas/advanced_operations/dispensing_chemicals
6. <https://faadronezone-access.faa.gov/#/>
7. <https://eaviation.ncdot.gov/UAS/Home/Login>
8. <https://www.ncagr.gov/SPCAP/pesticides/exam.htm>
9. www.pesticidemanuals.com



Summary of Guidance for Part 137



- ▶ Uncrewed Aircraft are lower risk (*No pilot, smaller payload, no flammable fuel, no accidents since 2015 and 178 certified operators*)
- ▶ Now apply for Part 137 Certificate online instead of (FSDO) Field Services District Office
- ▶ Knowledge and Skills are self-administered
- ▶ No regular surveillance for uncrewed operations
- ▶ Newly Required manual for uncrewed operations (*safety, HAZMAT, accident reporting, flight duties and responsibilities.*)
- ▶ Newly required self-created, self-administered self-documented training program
- ▶ Previously approved 49 USC 44807 are approved
- ▶ Uncrewed only need Remote Pilot Certificate (Part 107)
- ▶ Third Class medical instead of Second class medical now required



Label Language

Crop Life America Meeting In
Washington, DC April 18, 2023

- ▶ Stakeholder's attending
 - ▶ Pesticide Registrants
 - ▶ Equipment Manufacturers
 - ▶ University Research
 - ▶ AAPCO Officials
 - ▶ EPA
 - ▶ Crop Life America officials




TAKEAWAYS FROM CROPLIFE MEETING

- ▶ Use Forum for BMPs digitally preferred
- ▶ Communicate information as it becomes available



Common Practices using UAV

- ▶ Workflow evaluation (process of job steps)
 - ▶ Common definitions of operational categories pilot, mixer/loader, Visual observer
 - ▶ WPS and the uniqueness of UAV application
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DRONE MANUFACTURERS AT THE TABLE

- Advancement of the Technology with Regulations and pesticides (Drones inevitable to get larger, nozzle types, sensors on spray quality, pumps, agitators etc.)
- Keep it simple, technology will improve
- Keep in mind different platforms (rotors vs fix winged)
- Where do manufacturers go for for their feedback



Connecting drones to broader concepts

- ESA, Targeted application, Digital transformation
- Outcome/performance-based label language (e.g. as long as practice doesn't drift, it is ok).
- Need to create more information sharing and awareness on mixture-specific topics: Adjuvants, low-volume formulations, tank mixes.
- Language on nozzle selection and spray swath (boom width)
- Could there be drone specific section? Daunting task to touch every label.

Questions?
Comments?



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