

North Carolina Unmanned Aircraft Systems (UAS) Operator Permit

Knowledge Test Study Guide

This guide is published by the North Carolina Department of Transportation Division of Aviation, in conjunction with the NC UAS Operators Knowledge Test and North Carolina UAS Operator Permitting System to ensure that UAS operators in North Carolina understand and comply with state laws related to UAS use.

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FOREWORD

The conversation around UAS operation continues to develop in the United States. Many states have yet to pass legislation regarding unmanned aircraft, and laws that are passed must evolve as the field grows and changes. Some aspects of unmanned flight are controversial and will remain so. However, the N.C. Department of Transportation is working to provide unbiased guidance and support, as residents navigate the dynamic and exciting area of technology. This framework will help UAS users operate their equipment in a manner that complies with federal and state laws, setting a standard for responsible use for the rest of the country. Unmanned aircraft operators are responsible for the safety of those around them, both on the ground and in the air. By following the laws and regulations set by the Federal Aviation Administration and the North Carolina General Assembly, (found in this handbook) users will help keep our airspace safe while enjoying a productive and fun UAS experience.

Completing the North Carolina UAS Operator Permit Knowledge Test gives users the opportunity to become pioneers in commercial and/or government operations of unmanned aircraft systems (UAS). Operators will have the ability to use technology recently thought impossible and help set the standard for safety and excellence in an emerging field. The NCDOT Division of Aviation's goal is to make sure that UAS operations in North Carolina are safe and responsible.

NC UAS OPERATOR PERMIT REQUIREMENTS

North Carolina requires UAS/drone operators to have an UAS Operator Permit if they are flying for commercial purposes or are a government (public use) organization. Per North Carolina General Statute § 63-95 and § 63-96, the Division of Aviation administers the knowledge test and permit. There is no cost to take the test or obtain an UAS Operator Permit. The permit is valid for two years from the date of issuance.

Before you apply for your permit, please check the lists below. Commercial and Government operators must have documents from the Federal Aviation Administration (FAA) before getting a permit.

After getting your documents, Commercial and Government operators must pass the NCDOT UAS Knowledge Test. Immediately after passing the test on our website, you will be able to apply for your permit online.

| Commercial | Government | Recreational |
|---|---|--|
| You must have a valid <u>Airman</u> <u>Certificate</u> . | You must have a valid <u>Airman</u> <u>Certificate</u> . | Recreational UAS/drone operators do not need an Operator Permit. |
| You must be at least 16 years old. | You must be at least 16 years old. | No minimum age |
| You must pass the <u>NCDOT</u> <u>UAS Knowledge Test</u> & apply for your permit online at NCDOT: Division of Aviation website. | You must pass the <u>NCDOT</u> <u>UAS Knowledge Test</u> & apply for your permit online at NCDOT: Division of Aviation website. | You do not need to take NCDOT UAS Knowledge Test but it's best practice to know the NC state laws for UAS. |
| Commercial operators do have to register their UAS through the <u>FAA's sUAS</u> <u>website</u> . | Government operators do have to register their UAS through the <u>FAA's sUAS</u> website. | Recreational operators must register their UAS through the <u>FAA's sUAS</u> website. |

ATTENTION

For a step by step guide to taking your NC UAS knowledge test and how to apply for your permit please see <u>Section 11</u> of this document.

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Important Acronyms and Abbreviations

| AGL | Above Ground Level |
|----------------|--|
| ATC | Air Traffic Control |
| СОА | Certificate of Waiver or Authorization |
| FAA | Federal Aviation Administration |
| FAR | Federal Aviation Regulations |
| Knowledge Test | North Carolina UAS Operators Knowledge Test |
| NAS | National Airspace System |
| NC | North Carolina |
| NCDOT | North Carolina Department of Transportation |
| NCDOT/DOA | North Carolina Department of Transportation Division of Aviation |
| NCGS | North Carolina General Statutes |
| NOTAM | Notice to Airmen |
| NPRM | Notice of Proposed Rulemaking |
| Part 107 | This refers to FAR Part 107, also known as the "Small UAS Rule," |
| | which became effective August 29, 2016 and establishes a |
| | standardized set of aviation regulations applied to small UAS |
| | operating in the National Airspace System. Part 107 also |
| | establishes the FAA's Remote Pilot Certificate, which is an airman's |
| | certificate specifically designed for small UAS operators. |
| PIC | Pilot in Command |
| Section 333 | This refers to Section 333 of the FAA Modernization and Reform Act |
| | of 2012, which grants the U.S. Secretary of Transportation the |
| | authority to issue waivers to allow legal commercial operation of |
| | UAS in the National Airspace System. |
| TFR | Temporary Flight Restriction |
| UAS | Unmanned Aircraft System, also known as a "Drone" |
| U.S. | United States |

THE NORTH CAROLINA UAS OPERATOR'S KNOWLEDGE TEST AND STUDY GUIDE

In 2014, the North Carolina General Assembly passed a bill establishing regulations for the use of Unmanned Aircraft Systems (UAS) within the state. These regulations were enacted in anticipation of the continued expansion of UAS use for government and commercial applications as well as recreational purposes, . These uses have the potential to provide significant economic, safety and environmental benefits to a wide variety of industries, government functions and the general public.

As part of these regulations, additions to North Carolina General Statutes 63-95 and 63-96 were enacted, assigning responsibility to the N.C. Department of Transportation Division of Aviation for the development and administration of a UAS Knowledge Test, as well as a permitting system, to ensure that UAS operators understand and comply with North Carolina laws.

North Carolina's UAS regulations are not intended to duplicate federal regulation, nor is the NCDOT/DOA attempting to assume the role of the Federal Aviation Administration in regulating the use of airspace in the United States. Regulatory authority over U.S. airspace resides solely with the FAA, as does the authority for certification of pilots. The FAA is responsible for establishing requirements to obtain authorization for UAS operations and for granting authorization to operate in the National Airspace System. They also establish and administer standards, training and testing requirements for all types of pilots, including remote pilots, or UAS operators.

North Carolina's regulations establish the types of UAS activities allowed in in the state and govern the use of this technology, allowing the benefits associated with it to be realized, while protecting the safety and privacy of citizens. In turn, the Knowledge Test was created to ensure that UAS operators in North Carolina fully understand the state laws governing this technology.

This guide was prepared to help potential UAS operators prepare for the North Carolina Knowledge Test and provide an overview of the state laws related to UAS use. It is not intended to provide a comprehensive airspace education or to serve as a guidebook for Federal Aviation Regulations; nor is it meant to teach prospective operators how to operate a UAS. By studying this guide, prospective operators will learn about the UAS-related laws in North Carolina and the requirements that must be met in order to legally operate UAS within the state. In addition, this guide provides helpful information related to obtaining the necessary federal and state authorizations for UAS operation.

While every attempt has been made to ensure that this guide contains the information necessary to understand North Carolina's UAS regulations, prospective operators are also encouraged to read the specific NCGS related to UAS to ensure a complete understanding of the law. References to where the statutes can be viewed online are provided at the end of this guide.

REGULATORY AUTHORITY: WHO GOVERNS WHAT?

THE FEDERAL AVIATION ADMINISTRATION

For years, the general public had little reason to be concerned with airspace issues. There was an understanding that all manned flight had established methods of training and certification. In the same regard, hobbyists could buy and build model aircraft kits and receive guidance from hobby shops or other operators.

Today, new technology is rapidly becoming more accessible to commercial and private operators. Small and sophisticated unmanned aircraft are increasingly affordable, and the general public is becoming more aware of aviation safety and privacy issues. However, some people are unaware that the FAA governs all of the nation's airspace, even above their own property. Without rules from the FAA governing the use of all airspace, the increased use resulting from the growing number of UAS operations would be unsafe and endanger manned flight.

The FAA has exclusive sovereignty over airspace in the U.S. (49 U.S. Code). The Administration establishes operating rules governing the airspace in the form of Federal Aviation Regulations, which govern all aspects of aviation, such as pilot and aircraft certification requirements. It is important to note that per federal law, unmanned aircraft are still considered aircraft and are therefore subject to the FARs administered by the FAA.

Congress has authorized the FAA to safely integrate UAS into the National Airspace System using the authority of the FAA Modernization and Reform Act of 2012. In 2015, the FAA published a Notice of Proposed Rulemaking, which outlined the first FARs governing small UAS (those weighing less than 55 pounds). In June 2016, the FAA released the final small UAS rule, formally known as FAR Part 107. FAR Part 107 became effective on August 29, 2016 and provides regulations for the routine operation of small UAS, defined as UAS with gross weight less than 55 pounds and maximum flight speeds less than 100 mph in the National Airspace System. FAR Part 107 defines several restrictions for small UAS operation, including visibility requirements, line of sight requirements, registration requirements and restrictions on operation in certain classes of airspace and restrictions on operating altitude among others. In addition, Part 107 establishes a new type of airman's certificate, the Remote Pilot Certificate, along with requirements for obtaining it. The Part 107 Remote Pilot Certificate creates an additional means of obtaining the necessary legal authorization to operate small UAS in the NAS for commercial and governmental purposes. This is in addition to the existing Section 333 Commercial Exemption and Public Certificate of Authorization (COA) mechanisms. Furthermore, **unless explicitly waived by Part 107**, **all other existing FARs also apply to small UAS**. The FAA has the authority to enforce both Part 107 and previously existing regulations, such as those related to careless and reckless operation of aircraft. These rules can also be applied to a UAS hobbyist if the safety of a manned flight, or the airspace in general, is in question. As this field of technology grows, the FAA is making significant progress in integrating UAS activities as an established sector in the aviation community.

THE STATE OF NORTH CAROLINA

The State of North Carolina is responsible for ensuring that those operating UAS understand and follow state laws. This allows operators to enjoy the benefits associated with various UAS applications, while also protecting the safety and privacy of North Carolina's residents and visitors. This is accomplished by specific State Statutes.

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF AVIATION

NCDOT/DOA is responsible for the following:

- Implementation and administration of the North Carolina UAS Operator's Knowledge Test (referred to as the Knowledge Test)
- Issuing North Carolina commercial and governmental UAS operator permits

The Division of Aviation is not responsible for:

- Granting airspace use authorizations (Federal Aviation Administration)
- UAS pilot certification (Federal Aviation Administration)
- UAS aircraft registration (Federal Aviation Administration)
- FAA commercial licensing (Federal Aviation Administration)
- UAS airworthiness standards (Federal Aviation Administration)
- Airspace issues (Federal Aviation Administration)
- Privacy issues (Local Law Enforcement)

OTHERS – LOCAL GOVERNMENTS AND NATIONAL PARKS

In addition to the regulatory authority of the FAA and the State of North Carolina, prospective operators should be aware that:

- Local governments may also adopt ordinances concerning UAS launch and recovery.
- Certain national parks, including some in North Carolina, prohibit UAS launch and recovery or operation from park lands or controlled waters except when approved in writing by the park superintendent.

INDOOR FLIGHT

Indoor flight is not governed by the FAA. It is defined as flight occurring inside an enclosed space where the enclosure can be reasonably expected to prevent the flying platform from exiting the enclosure while in flight. Indoor UAS operations are the responsibility of the building owner; however, those flights and any imagery collected as a result of those flights are still subject to the North Carolina law.

WHO SHOULD TAKE THE NORTH CAROLINA UAS KNOWLEDGE TEST?

Anyone planning to use a UAS in North Carolina for any purpose other than recreation must pass the Knowledge Test prior to operating a UAS in the state. This requirement applies regardless of UAS type and what, if any, type of cameras or sensors the UAS is equipped with.

The only exception to this requirement is for individuals operating a UAS <u>under the authority</u> of a federal agency (either a federally owned-and-operated UAS or a UAS being operated under contract to a federal agency). An example of this would be official UAS operations conducted by U.S. Army personnel or contractors at Fort Bragg, North Carolina.

Operators who do not meet the above criteria for the exception must determine into which category they best fit. The FAA and the State of North Carolina recognize three distinct categories of UAS operations:

- 1. Recreational Operations (model aircraft operations)
- 2. Government Operations (public aircraft operations)
- 3. Commercial Operations (civil aircraft operations)

Definitions in the State Statute NCGS 15A-300.1

- <u>Model aircraft</u> An aircraft, as defined in G.S. 63-1, that is mechanically driven or launched into flight and meets all of the following requirements:
- Is flown solely for hobby or recreational purposes
- Is not used for payment, consideration, gratuity, or benefit, directly or indirectly charged, demanded, received, or collected, by any person for the use of the aircraft or any photographic or video image produced by the aircraft
- <u>Unmanned aircraft</u> An aircraft, as defined in G.S. 63-1, that is operated without the possibility of human intervention from within or on the aircraft and that does not meet the definition of model aircraft
- <u>Unmanned aircraft system</u> An unmanned aircraft and associated elements, including communication links and components that control the unmanned aircraft that are required for the pilot in command to operate safely and efficiently in the national airspace system

Business or Recreational?

- Federal statutes require model aircraft to be flown <u>strictly for hobby or recreational</u> <u>purposes</u>. According to the FAA, commercial flights or those that promote a business purpose do not qualify as recreational flights.
- NCGS 15A-300.1 (a) (1) reinforces the idea that the determination between whether a flight is commercial or recreational depends on the flight's purpose and results, not the type of aircraft or its capabilities.
- Therefore, UAS operations conducted for any purposes other than recreation are subject to both FAA and North Carolina regulations regarding non-recreational UAS flights.
- For example, if someone flies a UAS for fun and in the process, takes a picture that later is sold or used to promote a business or product; the flight would be defined as commercial, even though the original intent of the flight was recreation. Regulators cannot definitively determine intent they can only look at results.

Government Operations: Public aircraft operations

- <u>Government operations</u> are limited by federal statute to certain operations within U.S. airspace. The considerations for this determination are aircraft ownership, operator and flight purpose.
- Public agencies, or individuals who represent a government organization within the state that operate UAS for a public (government) purpose, are subject to federal and North Carolina regulations.
- Public agencies include any agency, department, or office of the state, as well as any
 political subdivision of the state, including county and city governments, plus their
 subdivisions. Public agencies also include all public universities and educational
 institutions.
- The FAA requires that any organization must certify it is a public entity in writing by the state attorney general or authorized party if the organization wishes to apply for a Public COA. More information on what constitutes a government operation can be found on the FAA's <u>website</u>.

Commercial Operations: civil or non-government operations

- Any operation that does not meet the statutory criteria for a <u>government operation</u> is considered commercial operation and must be conducted in accordance with all FAA regulations applicable to the operation.
- UAS flights that are not conducted for a recreational or government purpose are subject to the regulatory provisions for commercial UAS operations.
- If a UAS operator receives payment or a benefit for a UAS flight, or the images or data obtained during a flight, the flight is not recreational. Payments or benefits can be direct or indirect. Anyone operating such flights must pass the Knowledge Test and obtain the correct permit.

UAS operation type can be determined with the following questions:

- 1. Is the operation only for recreational purposes, meeting all requirements for recreational operations as explained above? If not, then ...
- 2. Does it qualify as a government operation as defined above? If not, then ...
- 3. The operation is considered commercial under state and federal regulations.

For more information on Model Aircraft Operations/Recreational Operations, the FAA's guidance can be found on its <u>website</u>.

The FAA has partnered with several organizations to promote safe model aircraft/recreational flight. The joint effort, called "Know Before You Fly," established a <u>website</u> to help users determine their status and understand the rules. From this site, users can find guidance from the FAA on where to conduct recreational UAS flights, altitude restrictions, etc. The key points of the FAA guidance for recreational UAS operations are:

- Never fly above 400 feet (measured from local ground level).
- Always fly within your visual line of sight.
- Do not fly within five miles of an airport without first coordinating with the air traffic management authority.
- Do not interfere with manned aircraft operations.
- Do not fly above stadiums or public events.
- Do not fly for compensation.
- Only fly UAS that weigh less than 55 pounds.
- Do not fly at night, even if the UAS is equipped with lights.

• Do take lessons or receive training before flying.

IMPORTANT – North Carolina Statutes Apply to ALL UAS Operations

North Carolina laws apply to anyone conducting UAS operations within the state for the following purposes:

- Public operations, e.g., state, or local government
- Commercial operations as defined by FAA
- Hobbyist or recreational UAS used for illegal activity
- Military and Federal government operation are exempt.

Recreational UAS users do not need to pass the Knowledge Test or obtain a permit, but they are not exempt from North Carolina laws regarding the use of a UAS.

AUTHORIZATION TO FLY: WHAT DO I NEED?

Potential government and commercial users must obtain several authorizations required by federal and state law in order to legally conduct UAS operations in North Carolina. These authorizations fall into two categories:

- 1. Federal authorizations
 - a. UAS registration
 - b. Airspace use authorizations (Part 107, 333 Exemption, COA)
- 2. North Carolina authorizations
 - a. Commercial UAS Operator's Permit
 - b. Government UAS Operator's Permit

AIRCRAFT REGISTRATION

- Applies to <u>all</u> UAS weighing over 0.55 pounds, including recreational, commercial and government use
- Can be accomplished either through the N-number process or <u>FAA's Online UAS</u>
 <u>registration process</u>
- Commercial UAS operators are required to register their UAS with the FAA and obtain either an N-number or FAA-issued UAS registration number for the UAS prior to operation for commercial purposes. Please note that while <u>the FAA-issued UAS</u> registration numbers issued for UAS used exclusively for recreational purposes and those issued for UAS that are used in commercial operations appear similar, they are not equivalent. For UAS registered for commercial purposes, the specific serial number of the UAS is required to be provided to the FAA and a unique number is provided for each UAS. This is different than recreational UAS registration, in which a single registration number is given to the individual person and can be applied to all recreational use UAS that person owns/operates.

PERMISSION TO FLY: AIRSPACE USE AUTHORIZATION

As previously stated, the FAA has authority over all aviation activities within domestic U.S. airspace.

- The FAA sets requirements, including any training and testing requirements related to operating any aircraft, including UAS, in the national airspace system to ensure that operators have the necessary knowledge, skills, procedures and controls to ensure safe operations for all users.
- The FAA has established procedures for handling all manner of flights operating in the NAS.

The FAA has three processes by which a potential UAS operator can obtain an airspace use authorization via waiver or exemption:

- **Part 107 operators** can conduct government or commercial operations within the regulatory framework of Part 107. Part 107 establishes requirements and limitations for flight operations and operator qualifications. Many of the restrictions outlined in Part 107 can be waived by the FAA, however waiver requests submitted by a Part 107 operator are considered on a case by case basis and are only issued after review of the safety case by the FAA. The specific requirements allowed operations and restrictions outlined by Part 107 are discussed in Section 6.1 below. More information on the Part 107 waiver process can be found <u>here</u>.
- **Government operators** are eligible to apply for a public use Certificate of Authorization. Operations that are not allowed under Part 107 (i.e. aircraft over 55 pounds) will require a COA. Agencies with existing COAs can continue operating under their COA until its expiration.
- **Commercial operators** can continue operating under an existing Section 333 Exemption through the FAA. As with a public COA, a commercial operator can apply for a Section 333 Exemption for operations that area not allowed under Part 107, for example operation of a UAS weighing more than 55 pounds.

PART 107 UAS OPERATIONS

The FAR Part 107 rule formalizes operations for small unmanned aircraft in the National Airspace System. Both commercial and government operators may function under the authority and within the requirements of Part 107. The operational parameters are similar

to those of the 333 Exemption and Blanket COAs. Currently, the FAA is also allowing for waivers of some of the limitations if a proponent can provide a safety case to mitigate the additional risk. The basic highlights of 14 CFR Part 107 are listed below:

Part 107 Operational Limitations:

- Aircraft less than 55 pounds
- Visual Line of Sight only
- Daylight hours only
- Max airspeed: 100 mph
- Max altitude: 400 feet Above Ground Level (AGL)
- Requires preflight inspection
- No careless and reckless operations
- One aircraft per one operator
- Pilots must avoid aircraft operations over people
- Can fly in Class B, C, D, and E airspaces with Air Traffic Control (ATC) permission
- Can fly in Class G airspace without ATC permission
- No transportation of hazardous materials

Part 107 Operator Requirements:

- Pass an aeronautical knowledge test for small UAS Type Certificate under Remote Pilot Certificate
- Vetted by TSA
- 16 years of age

Part 107 Aircraft Requirements:

- No airworthiness certification
- Aircraft registration number must be obtained and displayed on the aircraft
- Small (less than 55 pounds) tethered-powered UAS are also included in the Part 107 definition as needing registration and compliance with operational limitations

The FAA has announced that individuals or organizations can apply for waivers that will allow UAS operations to deviate from some of the Part 107 operating requirements, which include rules that restrict operations around transportation infrastructure. Waivers may be requested for the following:

- Operation from a moving vehicle or aircraft (§ 107.25)
- Daylight operation (§ 107.29)
- Visual line of sight aircraft operation (§ 107.31)
- Visual observer (§ 107.33)
- Operation of multiple small unmanned aircraft systems (§ 107.35)
- Yielding the right of way (§ 107.37(a))
- Operation over people (§ 107.39)
- Operation in certain airspace (§ 107.41)
- Operating limitations for small unmanned aircraft (§ 107.51)

FAR Part 107 can be used as the necessary FAA-issued airspace authorization for conducting non-recreational (government and/or commercial) UAS operations when the following conditions are met:

- The Pilot in Command (PIC) meets all FAA requirements for and holds a current and valid FAA-issued Remote Pilot Certificate or other FAA-recognized Airman's Certificate with Small UAS Remote Pilot Rating. The PIC is required to have these documents in their possession while conducting flight operations using Part 107 as their airspace authorization.
- Flight Operations are being conducted within the restrictions of Part 107 along with any waivers that have been specifically issued to the PIC or the PIC's organization applying to that operation.
- The UAS has been properly registered according to FAA requirements and the registration number is displayed on the aircraft.

PUBLIC CERTIFICATES OF WAIVER OR AUTHORIZATION – FOR GOVERNMENT ENTITIES ONLY

A Public Use COA is an authorization issued by the FAA's Air Traffic Organization to a government operator for a specific UAS activity. Once an application is submitted, the FAA conducts a comprehensive operational and technical review.

| FAA FORM 7711-1 UAS COA Attachment 2013-ESA-77 | Page 1 of 22 |
|--|-----------------------------|
| DEPARTMENT OF TRANSPORTATION PERPARAMININA DAMINISTRATION CERTIFICATE OF WAIVER OR AUTHORIZATI | ON |
| North Carolina State University | |
| North Carolina State University | |
| Centennial Campus, Box 8601 | |
| Raleigh, NC 27695-8601 | |
| This certificate is issued for the operations specifically described hereinafter. No operation pursuant to the authority of this certificate except in accordance with the stand contained in this certificate, and such other requirements of the Federal Aviation Regulati by this certificate. | lard and special provisions |
| offersmore surn-onezed Operation of the Condor II Unmanned Aircraft System (UAS) in Class G air feet Above Ground Level (AGL) near the Hyde County Airport (7W6) depic under the jurisdiction of MCAS Cherry Point Approach Control. | |
| LIST OF WAIVED REGULATIONS BY SECTION AND TITLE | |
| N/A | |

Figure 1 - Government (Public) Certificate of Authorization

The application system for a Public COA is not available to prospective operators until the FAA establishes that the applicant is a public entity. If necessary, provisions or limitations may be imposed as part of the approval to ensure the UAS can operate safely with other airspace users. The FAA has issued blanket waivers in some cases.

• Government operators are required to register their UAS with the FAA and obtain either an N-number or FAA-issued UAS registration number for the UAS prior to operation.

Prospective UAS operators should check with the FAA for the most current guidance on these applications.

For more information on the Public Use Certificate of Authorization process, please refer to the FAA's <u>website</u>.

SECTION 333 EXEMPTIONS – FOR COMMERCIAL UAS OPERATORS

Since 2014, the FAA has allowed certain commercial UAS operations through Section 333 Exemptions. While most commercial operations are now covered under Part 107, the FAA will issue 333 Exemptions for UAS operation that do not fall within the limitations of Part 107 on a case-by-case basis:

- Operational authority is granted on a case-by-case basis for certain UAS to perform commercial operations until a final ruling for small UAS is complete.
- The Section 333 Exemption process provides operators who wish to pursue safe and legal entry into the NAS a competitive advantage in the UAS marketplace, thus discouraging illegal operations and improving safety. It is anticipated that this activity will result in significant economic benefits, and the FAA Administrator has identified

this as a high priority project in order to address demand for civil operation of UAS for commercial purposes.

• Once a Section 333 Exemption has been granted, the operator can choose to operate within the parameters of the "Section 333 Blanket Civil COA" that is provided along with their Section 333 Exemption, or they may apply for an additional Civil COA if their anticipated operations require flights to be conducted outside of the parameters of the blanket COA.

For more information on the Section 333 Exemption process and how to file an application, please refer to the FAA's <u>website</u>.

AUTHORIZATION TO FLY: NORTH CAROLINA AUTHORIZATIONS

Operators who have obtained the necessary FAA authorization(s) and intend to conduct government or commercial UAS operations are required to:

- Pass the Knowledge Test
- Obtain either a commercial or government UAS operator permit

NCDOT/DOA provides credentials for commercial operators who have passed the Knowledge Test and obtained UAS operator permits.

Users must pass the Knowledge Test before being able to obtain a commercial or government NC UAS Operator Permit. Users must choose which type of permit they wish to obtain, either a government operator permit, commercial operator permit, or both. State law specifically requires permits for commercial operators and some form of credential for government operators. To simplify the process and provide a consistent set of credentials that can be verified by NCDOT and/or law enforcement, permits will be issued for both commercial and government operators. Commercial operator permits are marked "Commercial" and Government operator permits are marked "Government." Per North Carolina law, operators must keep their permit, a copy of any applicable FAA-issued airspace use authorization (Part 107 Remote Pilot Certificate, Section 333 Exemption or Public COA documentation) and a valid form of government-issued ID (such as a driver's license) in their possession while operating a UAS Operator's Permit (Government or Commercial):

- The person must be at least 16 years of age.
- The person must possess a valid driver's license issued by any state or territory of the United States or the District of Columbia.
- The person must have passed the NC UAS Operator's Knowledge Test.
- The person must satisfy all other applicable requirements of Article 63-96 of the North Carolina General Statutes, as well as federal regulation. In order to meet the requirements of federal regulations, operators must meet the requirements of FAR Part 107 (by having been issued a Remote Pilot Certificate), or the Section 333 Commercial Exemption the operator is operating under (generally requires that the Pilot in Command have a pilot's license, Sport Pilot or better), or the Public Certificate of Authorization that they are operating under if a government agency.

 Per North Carolina law, UAS operators are required to obtain permission from the owner of any property they use for launch or recovery operations, unless the operation is being conducted by a law enforcement/public safety agency and meets requirements for Law Enforcement Exceptions as outlined in Section 9.3. Details regarding the regulation of launch and recovery sites are covered later in this guide.

NORTH CAROLINA STATUTES: WHAT CAN I DO?

REGULATION OF LAUNCH AND RECOVERY SITES (§15A-300.2)

Since the FAA governs all aspects of airborne flight, the North Carolina General Assembly chose to allow local governments and private property owners to limit the use of UAS on their property. The law requires consent when on state or private property prior to UAS launch and recovery. However, <u>this consent does not waive any other FAA requirements once the UAS is airborne</u>.



Figure 2 - Launch and Recovery

Prospective operators should be aware of the following:

- Local governments may also adopt ordinances concerning UAS launch and recovery.
- Certain national parks, including some in North Carolina, prohibit UAS launch and recovery or operating from park lands or controlled waters except when approved in writing by the park superintendent.

GENERAL PROHIBITIONS AND CONSENT (§ 15A.300.1)



Figure 3 – Property Surveillance

It is illegal to operate a UAS in North Carolina to conduct surveillance of a person or a dwelling occupied by a person without the person's consent. This includes the house or dwelling and the land immediately surrounding it. It also includes the boundary where a homeowner can have a reasonable expectation of privacy. These limitations also extend to surveillance of private property (lands and fields) without the consent of the owner, easement holder, or property lessee.

In the case of UAS photography, consent is required from individuals when the photos will be published or otherwise publicly disseminated. This does not apply to newsgathering, newsworthy events, or events or places to which the general public is invited.



USE OF AN UNMANNED AIRCRAFT SYSTEM NEAR A CONFINEMENT OR CORRECTIONAL FACILITY PROHIBITED ((§ 15A-300.3)

It is illegal to operate a UAS in North Carolina near a prison. This includes local confinement facilities, and state and federal correctional facilities. The restricted distance is 500 feet horizontally or 250 feet vertically from the prison. The horizontal distance extends outward from the furthest exterior building walls, perimeter fences, and permanent fixed perimeter, or from another boundary clearly marked with posted notices.

There are exceptions to the UAS flight restrictions around prisons if you:

- Are a law enforcement officer operating in accordance to G.S. 15A-300.1(c).
- Are a emergency management agency responding to an emergency.
- Have obtained written permission from the official in charge of the facility.

If you are a commercial or public utility operator the restricted area is lower to 150 feet both horizontally and vertically if you follow all following requirements:

- Notify the official in charge of the facility at least 24 hours prior to the operation.
- The purpose of the operation is directly related to the business of the commercial operator.
- Follows all other federal and state regulations.
- The person operating the UAS does not physically enter the prohibited space without an escort from the facility.

Per G.S. 15A-300.3, it is a felony deliver, or attempt to deliver, a weapon or contraband using a UAS into a prison. It is a misdemeanor for all other violations under this law.

Per §15A-300.3 (d), Law enforcement may seize an unmanned aircraft system and any attached property, weapons, and contraband used in violation of this section. An unmanned aircraft system used in violation of this section and seized by a law enforcement agency is subject to forfeiture and disposition pursuant to G.S. 18B-504.

LAW ENFORCEMENT EXCEPTIONS (§ 15A-300.1 (C))



Figure 4 - Law Enforcement

UAS used by North Carolina law enforcement agencies of the state or a political subdivision of the state are allowed in the following instances:

- To counter a high risk of a terrorist attack by a specific individual or organization if the Secretary of Homeland Security or the Secretary of the N.C. Department of Public Safety determines that credible intelligence indicates a risk exists.
- To conduct surveillance in an area that is within a law enforcement officer's plain view of sight when the officer is in a location, he or she has a legal right to be.
- If the law enforcement agency first obtains a search warrant authorizing the use of a UAS.
- If the law enforcement agency possesses reasonable suspicion that under particular circumstances, swift action is needed to prevent imminent danger to life or serious damage to property, to prevent the imminent escape of a suspect or the destruction of evidence, to pursue an escapee or suspect, or to facilitate the search for a missing person.
- To photograph gatherings in which the general public is invited on public or private land.

EMERGENCY MANAGEMENT EXCEPTION (§ 15A-300.1 (C1))

North Carolina emergency management agencies, as defined in G.S. 166A-19.3, may use UAS for all functions and activities related to emergency management including:

- Incident command
- Area reconnaissance
- Search and rescue
- Preliminary damage assessment
- Hazard management
- Floodplain mapping



UNWARRANTED SURVEILLANCE (§ 15A-300.1 & §14-401.25) Figure 5 - Privacy

North Carolina passed legislation to ensure the privacy of its citizens. Any person who is the subject of unwarranted surveillance, or whose photograph is taken in violation of the provisions of NCGS 15A-300.1, shall have a civil cause of action against the person, entity, or state agency that conducts the surveillance or uses UAS to photograph for the purpose of publishing or distributing the photograph.

In lieu of actual damages, the person whose photograph is taken may elect to recover \$5,000 for each photograph or video that is published or otherwise distributed, as well as reasonable costs, attorneys' fees, and other relief as determined by the court.

Photographs or footage obtained in violation of this statute are not admissible as evidence in a criminal prosecution in any North Carolina court of law except when obtained or collected under the objectively reasonable, good-faith belief that the actions were lawful.

UNLAWFUL DISTRIBUTION OF IMAGES (§ 14A-401.25)



Figure 6 - Infrared Technology

UAS are sometimes equipped with infrared sensors or other similar thermal imaging technology. NCGS 14A-401.25 states it shall be a Class A1 misdemeanor to publish or disseminate, for any purpose, recorded images taken by a person or non-law enforcement entity through the use of infrared or other similar thermal imaging technology attached to an unmanned aircraft system, as defined in G.S. 15A-300.1, and revealing individuals, materials, or activities inside of a structure without the consent of the property owner.

INTERFERENCE WITH MANNED AIRCRAFT BY UNMANNED AIRCRAFT SYSTEMS (§14-280.3)



Figure 7 - Interference with Manned Operations

Per NCGS 14-280.3, it is a felony to willfully damage, disrupt the operation of, or otherwise interfere with a manned aircraft through use of a UAS while the manned aircraft is taking off,

landing, in flight, or otherwise in motion. Anyone who endangers the airspace in this manner may also be subject to charges under federal law.

UNLAWFUL POSSESSION AND USE OF UNMANNED AIRCRAFT SYSTEMS (§14-401.24)



Figure 8 - Unlawful use of UAS

Per NCGS 14-401.24, it is a felony to possess or use a UAS that has a weapon attached to it. Weapons are defined in NCGS 14-401.24 as:

• Those weapons specified in NCGS 14-269, 14-269.2, 14-284.1, or 14-288.8 and any other object capable of inflicting serious bodily injury or death when used as a weapon

UNLAWFUL HARASSMENT OF PERSONS TAKING WILDLIFE RESOURCES (§113-295)



Figure 9 - Interfere with Wildlife Resources

Per NCGS 113-295, it is a misdemeanor for a UAS operator to intentionally interfere with lawful hunting or fishing or to drive, harass, or intentionally disturb wildlife in order to disrupt lawful hunting or fishing. It is also illegal to take or abuse property, equipment, or hunting dogs that are being used for lawful hunting or fishing.

This rule does not apply to a person who accidentally interferes with lawful hunting or fishing while using the land for other lawful activity such as agriculture, mining, or recreation. This subsection does not apply to activity by individuals on land they own or lease.



CRIMES COMMITTED BY USE OF UNMANNED AIRCRAFT SYSTEMS (§14-7.45) Figure 10 - Crimes using UAS

Per NCGS 14-7.45, all crimes committed by use of a UAS in North Carolina are governed by the state's laws. The question of whether the conduct by an unmanned aircraft system while in flight over the state constitutes a crime by the operator will be determined by the laws of the state. For example, NCGS 14-202 (c) states, "Unless covered by another provision of law providing greater punishment, any person who, while in possession of any device which may be used to create a photographic image, shall secretly peep into any room shall be guilty of a Class A1 misdemeanor."

In this case, an operator who uses a UAS to secretly "peep into any room" could be charged with a misdemeanor, even though UAS are not specifically mentioned in the law.

Prospective UAS operators must remember that, while recent additions to the North Carolina General Statute defined new criminal acts specifically associated with UAS use, **any** crime defined in North Carolina law is illegal, regardless of whether a UAS is used.

WHERE TO FIND CURRENT INFORMATION

KEY OFFICE CONTACTS

The NCDOT Division of Aviation, UAS Program Office

- Website <u>https://www.ncdot.gov/aviation/uas/</u>
- Resource Page <u>https://connect.ncdot.gov/resources/Pages/Aviation-Division-</u>
 <u>Resources.aspx</u>
- Email <u>UAS@ncdot.gov</u>
- Phone 919 814 0550

THE NORTH CAROLINA AIRPORT FACILITY DIRECTORY

The 2019-2020 North Carolina Airport Guide can be downloaded <u>here</u> or through the NCDOT/DOA <u>website</u>.

FAA CONTACT INFORMATION

For questions in reference to Part 107, Remote Pilot Certificates, Part 107 waivers, UAS Certificates of Authorization, Section 333 exemptions or UAS registration, contact the <u>FAA</u> <u>UAS Program Office</u>.

For general questions, comments, or complaints about UAS, please <u>email</u> the FAA. For general questions regarding FARs or enforcement, contact the FAA Flight Standards District Offices in Greensboro at (336) 369-3900 or in Charlotte at (704) 319-7020.

CURRENT UAS-RELATED INFORMATION

9.2.1 North Carolina Statutes

North Carolina General Statutes concerning UAS operations are available on the North Carolina General Assembly's <u>website</u>.

A summary of the North Carolina statutes directly related to UAS can be found by visiting the NCDOT/DOA resource <u>website</u>.

9.2.2 FAR Part 107

A summary of FAR Part 107 regulations, frequently asked questions and answers about Part 107, the Remote Pilot Certificate requirements and application processes, plus the full text of Part 107 are available on the FAA's <u>website</u>.

9.2.3 UAS Aircraft Registration

Operators can register their UAS and obtain UAS registration certificates/numbers by visiting the FAA's UAS registration <u>website</u>.

9.2.4 Commercial Operations (civil operations)

A summary of FAA regulations for commercial UAS operations is available on the FAA's <u>website</u>.

9.2.5 Government Operations (public operations)

A summary of FAA regulations for government UAS operations is available on the FAA's <u>website</u>.

9.2.6 Model Aircraft Operations (recreational or hobbyist operations)

A summary of FAA recommendations for model aircraft and recreational UAS operations is available on the FAA's <u>website</u> and the Know Before You Fly <u>website</u>.

9.2.7 Section 333 Exemptions Explained

A summary of the FAA Section 333 Exemption is available on the FAA's <u>website</u>.

9.2.8 COAs Explained

A summary of the FAA COA process is available on the FAA's website.

9.2.9 Aeronautical Charts

Current official charts can be obtained from the FAA's <u>website</u> or at local flight training schools. Unofficial free digital charts are available at <u>Skyvector</u>.

9.2.10 Notice to Airmen (NOTAM) Information

Information about NOTAMs is available <u>here</u>.

9.2.11 A Guide to Temporary Flight Restrictions (TFR)

A guide to TFRs is available on the FAA's <u>website</u>.

9.2.12 **Special Use Airspace (Military Operating Areas (MOAs), Restricted Areas)**

Information about special-use airspace, such as restricted areas and military operating areas, is available on the FAA's <u>website</u>.

This site should not be used as a sole source of information. Because these types of airspaces can be activated and deactivated hourly, timely information should be obtained from the scheduling agency. Contact information can be found on current FAA Sectional Charts.

NORTH CAROLINA UAS PERMIT – PERMITTING PROCEDURES

WEBSITE

Go to https://www.ncdot.gov/aviation/uas/



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AFTER THE TEST

Congratulations!!! Print your Certificate

Note -You passed the test but you still need to get you UAS permit number.

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Government Permit

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DOWNLOAD & PRINT UAS PERMIT

This is the final step to download and print the NC UAS permit.

"As per North Carolina Regulations all commercial and government UAS operators need to carry the NC UAS permit along with FAA Remote Pilot Certificate at all times during UAS operations."

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REQUIRED DOCUMENTATION FOR NC UAS COMMERCIAL OPERATIONS

Name: Manufacturer:

1. Register your UAS/drone

- 2. Obtain you FAA Remote Pilot Certification
- Model: Serial Number: Certificate Number: Issued: 01/11/2017 Expires: 01/11/2020 UNITED STATES OF AMERICA XI 2 DEPART VADDRESS SEX HEIGHT WEIGHT N 70 160 VI NATIONALITY USA HAS BEEN FOUND TO BE PROPERLY REMOTE PILOT CERTFICATE NUMBER X DATE OF ISSUE Y CUALFIED TO EX XIN Louistrator Transportation Permit No: UAS Commercial Operator Permit DIVISION OF AVIATION

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3. Obtain NC UAS permit