
Unmanned Aerial System (UAS) Operations

605.1 PURPOSE AND SCOPE

The purpose of this policy is to establish guidelines for the use of an unmanned aircraft system (UAS) and for the storage, retrieval and dissemination of images and data captured by the UAS.

The Department recognizes the particular value in using unmanned aircraft systems to conduct a number of law enforcement operations. The Department will ensure that aircraft are operated in a safe manner in accordance with all FAA rules regulations and in full compliance with the United States Constitution, the Washington State Constitution, as well as federal, state, and local laws.

605.1.1 DEFINITIONS

Definitions related to this policy include:

Unmanned Aircraft System (UAS) - An unmanned aircraft of any type that is capable of sustaining directed flight, whether preprogrammed or remotely controlled (commonly referred to as an unmanned aerial vehicle (UAV)), and all of the supporting or attached systems designed for gathering information through imaging, recording or any other means.

Unmanned aircraft (UA) - means an aircraft operated without the possibility of direct human intervention from within or on the aircraft. UA is capable of sustaining directed flight whether preprogrammed or remotely controlled. For the purpose of this policy, UA for the Orting Police Department is a “small unmanned aircraft” defined by the FAA. Unless otherwise specified or authorized, unmanned aircraft (UA) operated by the Orting Police Department shall weigh less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft in compliance with FAA regulations.

National airspace system (NAS) - Is the airspace, navigation facilities and airports of the United States along with their associated information, services, rules, regulations, policies, procedures, personnel and equipment.

Remote Pilot – is a holder of a remote pilot airman certificate issued by the FAA or a person, appointed as an OPD Remote Pilot and trained and internally certified by the OPD under the provision of the Certificate of Authorization (COA) issued by the FAA.

Remote Pilot In Command (RPIC) - is a remote pilot responsible for the operation of a UAS. The RPIC is directly responsible for all aspects of the operation and is the final authority for operation of the UAS.

UAS Operator – is a person who flies a UA remotely using a controlling device for the UA (person manipulating the flight controls). RPIC is usually the UAS Operator but RPIC may designate another person to remotely fly (manipulate the controls) as long as the designated UAS Operator is under effective direct supervision of the RPIC.

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Visual observer – means a person who is designated by the RPIC to assist the RPIC/or the person manipulating the flight controls of the UAS to see and avoid other air traffic or objects aloft or on the ground.

Certificate of Waiver or Authorization (COA) – is an authorization issued by the FAA to the public operator (Orting Police Department) for a specific UA activity. After a complete application is submitted, the FAA conducts a comprehensive operational and technical review and provides coordination with the local air traffic controllers (ATC) for safe operations.

Part 107 – refers to Federal Aviation Regulation Part 107 (from Title 14 Code of Federal Regulations), which governs the operations of UAS. The title of the chapter is “Small Unmanned Aircraft Systems” and it contains many subsections including operating rules and remote pilot certification.

605.2 POLICY

Unmanned aerial systems may be utilized to enhance the department’s mission of protecting lives and property when other means and resources are not available or are less effective. Any use of a UAS will be in full compliance and strict accordance with constitutional and privacy rights and Federal Aviation Administration (FAA) and state regulations.

The Orting Police Department will operate its UAS under the provisions set by the COA, Part 107 and FAA rules.

The Orting Police Department will operate UAS for the following government missions:

- (a) **Situational awareness:** To assist decision makers in understanding the nature, scale, and scope of a critical incident such as a Hazmat Spill, Natural, or Man-Made Disaster.
- (b) **Search and Rescue:** Assist with missing person investigations, Amber and Silver Alerts, and other search and rescue missions.
- (c) **Tactical Deployment:** To help provide situational awareness to support the tactical deployment of officers and equipment during emergency situations. This will be done under a judicial search warrant, unless exigent circumstances exist.
- (d) **Crime Scene Investigation:** To document, measure, locate, and/or assist in the investigation of crime scenes.
- (e) **Traffic Collision Investigation and Reconstruction:** To document, measure, locate, and/or assist in the investigation of vehicle collision scenes.
- (f) **Search Warrant:** To collect evidence in a criminal investigation under an approved judicial search warrant.
- (g) **Mutual Aid:** In response to a request for UAS assistance in support of Federal, State, local, tribal, or territorial government operations. However, OPD personnel will abide by our UAS policies outlined here and will not operate the UAS if the request violates any of our policies or criteria for operation.

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605.3 PRIVACY

The use of the UAS potentially involves privacy considerations. Absent a warrant or exigent circumstances, operators and observers shall adhere to FAA altitude regulations and shall not intentionally record or transmit images of any location where a person would have a reasonable expectation of privacy (e.g., residence, yard, enclosure). Operators and observers shall take reasonable precautions to avoid inadvertently recording or transmitting images of areas where there is a reasonable expectation of privacy. Reasonable precautions can include, for example, deactivating or turning imaging devices away from such areas or persons during UAS operations.

605.3.1 LOCATION OF USE

The Orting Police Department will use UAS in the following geographical boundaries.

- (a) Inside the lateral boundaries of Pierce County when operated under COA.
- (b) Outside of Pierce County when operated under Emergency COA or in accordance with Part 107.

605.4 PROGRAM COORDINATOR

The Chief of Police will appoint a program coordinator who will be responsible for the management of the UAS program. The program coordinator will ensure that policies and procedures conform to current laws, regulations and best practices and will have the following additional responsibilities:

- Coordinating the FAA Certificate of Waiver or Authorization (COA) application process and ensuring that the COA is current.
- Ensuring that all authorized operators and required observers have completed all required FAA and department-approved training in the operation, applicable laws, policies and procedures regarding use of the UAS.
- Develops and maintain local protocols for the UAS operations in NAS (National Air Space).
- Developing uniform protocol for submission and evaluation of requests to deploy a UAS, including urgent requests made during ongoing or emerging incidents. Deployment of a UAS shall require written authorization of the Chief of Police or the authorized designee, depending on the type of mission.
- Developing protocol for conducting criminal investigations involving a UAS, including documentation of time spent monitoring a subject.
- Implementing a system for public notification of UAS deployment.
- Developing an operational protocol governing the deployment and operation of a UAS including, but not limited to, safety oversight, use of visual observers, establishment of lost link procedures and secure communication with air traffic control facilities.
- Developing a protocol for fully documenting all missions.
- Developing a UAS inspection, maintenance and record-keeping protocol to ensure continuing airworthiness of a UAS, up to and including its overhaul or life limits.

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- Developing protocols to ensure that all data intended to be used as evidence are accessed, maintained, stored and retrieved in a manner that ensures its integrity as evidence, including strict adherence to chain of custody requirements. Electronic trails, including encryption, authenticity certificates and date and time stamping, shall be used as appropriate to preserve individual rights and to ensure the authenticity and maintenance of a secure evidentiary chain of custody.
- Maintains records relating to the Department UAS pilot training and maintenance program.
- Developing protocols that ensure retention and purge periods are maintained in accordance with established records retention schedules.
- Facilitating law enforcement access to images and data captured by the UAS.
- Recommending program enhancements, particularly regarding safety and information security.
- Ensuring that established protocols are followed by monitoring and providing periodic reports on the program to the Chief of Police.

605.5 REMOTE PILOT

- Upon selection, Remote Pilot will complete the OPD UAS training which consists of ground school and practical flight training sessions.
- The OPD Remote Pilot will obtain their FAA Remote Pilot license with small UAS rating.
- Upon the issuance of FAA Remote Pilot license, the remote pilot must submit a copy of the remote pilot license to the Program Coordinator for the purpose of record keeping.
- Conduct preflight inspection checklist, to include specific aircraft and control station systems checks, to ensure the UAS is in the conditions for safe operation.
- Remote Pilot will adhere to laws, rules, protocols and the Department policy. The remote pilot may deviate from these requirements only in response to an in-flight emergency.
- It is the RPIC responsibility to maintain uninterrupted communication with the air traffic controller by radio or phone to ensure the safety of the UAS operation.
- (RPIC) Must report any UAS accidents to the FAA in accordance with the rules of Part 107 or COA.

605.5.1 FLIGHT / OPERATIONAL RULES

- All flights will be approved by a Division Commander or the Chief of Police.
- All flights will be documented in the flight log noting the reason for the flight, flight length, general location, and approving supervisor,
- The Program Coordinator will develop a monthly report of the flight log information for posting to the City's website or social media.

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- The flight log will be periodically reviewed by the Division Commander to ensure compliance with department policy and applicable laws and regulations.
- Where there are specific and articulable grounds to believe the UAS will collect evidence of criminal wrongdoing and if the UAS will intrude upon reasonable expectations of privacy, the Department will secure a search warrant prior to conducting the flight, unless exigent circumstances exist.
- The persons involved in operating UAS will adhere to all laws and regulations relating to the operation of UAS unless specific rules were waived by the FAA via the COA issued to the Orting Police Department.
- The RPIC and/or UAS operators will not operate in a careless or reckless manner.
- Prior to launching the UAV the RPIC will specifically declare and document if it is being flown under FAA Part 107 or the COA.
- The primary authority will be the COA however discretion is given to the RPIC to operate under Part 107 should circumstances dictate.

605.6 USE OF UAS

Only authorized operators who have completed the required training shall be permitted to operate the UAS.

Use of vision enhancement technology (e.g., thermal and other imaging equipment not generally available to the public) is permissible in viewing areas only where there is no protectable privacy interest or when in compliance with a search warrant or court order. Live-feed viewing, recording, storing, and viewing of recorded images will be done in compliance with the law and applicable Department policies in support of the Department philosophy noted. In all other instances, legal counsel should be consulted.

The Orting Police Department may use FLIR to support various missions such as but not limited to: search and rescue, apprehension of dangerous subjects or wildlife, surveillance of open fields; especially the City Parks, which are closed after dusk.

UAS operations should not be flown over populated areas without FAA approval.

605.6.1 TRAINING AREA

Training flights of the UAS will be conducted in the air space directly above the lateral boundaries of property owned by the City of Orting or in the designated area of Fort Steilacoom Park. The training area may be extended to other areas of Gratzner Park or as long as the training doesn't pose unnecessary risk to the public. Officers conducting training will consider the time of day and time of week when conducting training outside of (the) designated training area.

UAS training is permitted in the air space directly above the lateral boundaries of property not owned by the City of Orting as long as the owner(s) or the agents of the owner(s) of the property grant permission.

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605.7 PROHIBITED USE

The UAS video surveillance equipment shall not be used:

- To conduct random surveillance activities.
- To target a person based solely on actual or perceived characteristics such as race, ethnicity, national origin, religion, sex, sexual orientation, gender identity or expression, economic status, age, cultural group, or disability.
- To harass, intimidate, or discriminate against any individual or group.
- To conduct personal business of any type.

The UAS shall not be weaponized.

605.8 RETENTION OF UAS DATA

Data collected by the UAS shall be retained as provided in the established records retention schedule per Washington State WAC and RCW.

Data shall not be disseminated outside of the Police Department unless dissemination is required by law or fulfills an authorized purpose and complies with our Department policy.

Collection, use, dissemination or retention of UAS-recorded data should not be based solely on individual characteristics (e.g. race, ethnicity, national origin, sexual orientation, gender identity, religion, age or gender) which is a violation of the law.

Collection, use, dissemination or retention of UAS-recorded data shall comply with the Privacy Act of 1974 (5 U.S.C. 552a), when applicable.

Identified Incident: Recordings, created by the law enforcement agency using mobile recording devices, and whether manually or automatically triggered, that are known to have captured a unique or unusual action from which litigation or criminal prosecution is expected or likely to result.

This data must be retained until matter is resolved and until exhausting of appeals process then destroy.

No Identified Incidents: Data shall be retained for 90 days and then destroyed.

Departmental request for a UAS video, including requests from the Office of the Attorney General, Pierce County Prosecutors Office or City Attorney's Office, shall be forwarded as a written request via e-mail, to the Property Unit, with sufficient information to locate the UAS video.

Non-Departmental Requests for a UAS video shall be accepted and processed in accordance with Federal, State, and local laws, and departmental policy (discovery, media inquiries, subpoenas, Public Records Act requests, etc.).

605.8.1 MONTHLY REPORTING

For transparency purposes, a report on all UAS missions will be posted on the City of Orting website on a monthly basis. This monthly report will contain the number, type, and location of any UAS missions.

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605.8.2 COMPLAINTS

Any complaints by a citizen regarding privacy, civil rights, civil liberties and the use of the UAS will be handled in accordance with our normal Department complaint procedures, as outlined in the Personnel Complaints policy.

605.9 CONCEPT OF OPERATION (CONOP)

605.9.1 SENSITIVE FACILITY USE INSTRUCTIONS

Recommended CONOP for use of DJI Matrice 1 UAS at sensitive facilities:

- Remove the SD card that is glued onto the main flight controller PCB. This card stores flight telemetry but is not required for flight operations. This procedure is tricky but can be performed with simple hand tools and only needs to be done once per aircraft
- Identify a tablet for use with DJI UAS operations, which does not have a cellular radio equipped.

Use only this tablet to connect to the UAS

- **Always** keep the tablet in airplane mode with Wi-Fi explicitly turned off with the one exception of needing to update the DJI GO app or the remote controller firmware (see below)
- If the DJI GO app needs to be updated on the tablet, perform the following steps:
 - Factory reset the tablet, destroying any possibly sensitive data onboard
 - Ensure that the tablet is disconnected from the UAS
 - Turn on Wi-Fi and download the latest DJI GO app to the tablet
 - Turn off Wi-Fi before connecting the tablet to the remote controller or powering on the UAS
- If the remote controller firmware needs to be updated, first follow the instructions above for factory resetting the tablet and downloading the latest DJI GO app. Once this is complete, perform the following steps:
 - Ensure that the UAS aircraft is off
 - Turn the tablet's Wi-Fi back on
 - Connect the tablet to the remote controller via USB
 - Within the DJI GO app, go to Camera View > System Status bar > Overall Status. Tap "Download the firmware update package" to download the firmware. If the option exists to turn off Wi-Fi before starting the actual update, do so. The status LED on the remote controller will blink green when the update is complete
 - Turn Wi-Fi back off
- After **every** flight campaign, remove the flight imagery SD card from the camera, empty it, then factory-reset the tablet, re-download, and install the DJI GO app.

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Following these recommendations ensures the aircraft is never connected to a network-enabled device and that any sensitive data that ends up on the tablet is wiped before network connectivity is established. The possibilities for circumventing these security measures are unlikely:

- Data could be stored in the remote controller and made available during a remote controller firmware update (which requires the tablet to be connected to the network and the remote controller simultaneously). A hardware/firmware reverse engineering of the remote controller and DJI GO app would determine if this were possible.
- The processor or file system in the SD cards used to transport data between the UAS and networked computers could be co-opted to exploit vulnerabilities in the computers and allow data transmission via the computer's network connection. This is exceedingly unlikely but a full hardware/firmware reverse engineering of the UAS aircraft would determine if such an attack were possible.