
Unmanned Aircraft System (UAS)

339.1 PURPOSE AND SCOPE

The mission of the Irvine Police Unmanned Aircraft System (UAS) is to assist police personnel in enhancing public safety while protecting the rights and privacy of the general public.

Department personnel shall make every effort to avoid invading a person's reasonable expectation of privacy when operating a UAS. When operating a UAS, the Irvine Police Department will abide by all Federal Aviation Administration (FAA) regulations for flight and will obtain the proper authorization for flight. Additionally, the need, availability and use of the UAS will not supersede the issuance of a warrant when otherwise required.

Managers, supervisors, operators and visual observers involved in the deployment of a UAS will consider the protection of individuals' civil rights and reasonable expectation of privacy as a key component of any decision made to deploy the UAS. UAS Remote Pilot in Command, Pilots and Visual Observers will ensure operations of the UAS intrude as little as possible upon those who live, work and visit the City of Irvine.

339.2 POLICY

To accomplish this primary goal, the Irvine Police Department will adhere to the following:

Authorized use of Department UAS include:

1. Aerial photography and video for:
 - (a) Static crime scenes or traffic collision investigations for evidence collection purposes.
 - (b) Social media, marketing materials and publications for public relations purposes.
2. Natural disaster evaluation and response.
3. Searches for missing persons, suspects or articles (such as weapons) within established police perimeters or search zones when deployment is intended to enhance the safety of officers, suspects, victims or the community at large.
4. Enhancement of animal and officer safety by mapping and identifying wildlife paths of travel in unpopulated areas.
5. Roof checks in response to burglar alarms or calls for service, where access is difficult, and when deployment is intended to enhance the safety of officers, suspects, victims or the community at large.
6. Deployment in preparation for, and during SWAT operations, serving a search or arrest warrant, conducting a parole or probation search, and for investigations requiring an operational plan when deployment is intended to enhance the safety of officers, suspects, victims or the community at large.
7. Deployment at the request of the Orange County Fire Authority (OCFA) to monitor open space or active fires or other hazards and disasters.

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8. Training in an environment closed to the public.

When the drone is being flown pursuant to any authorized use above, the onboard cameras will be turned to face away from occupied structures as feasible or the recording function will be turned off to minimize inadvertent video or still images of uninvolved persons. Contact with subjects directly involved in the deployment (suspects, missing/lost persons) shall be recorded whenever possible to document interaction with police personnel. Every effort should be made to record detentions and arrests without jeopardizing safety. However, it is recognized that under certain exigent circumstances threatening public or officer safety, the aforementioned efforts may not always be possible or appropriate. In those instances where the recording feature is not activated due to reasonable mitigating factors, the drone operator shall activate the recording feature as soon as the event stabilizes and it is practical to do so.

Unauthorized use of Department UAS include:

1. Surveillance of any person or persons who are not suspects in an active criminal investigation.
2. Monitoring, photographing or videoing lawful protests, demonstrations, rallies, marches or other expressions of free speech.
3. Routine usage of UAS by police personnel for searches or area checks when less intrusive methods are available and can be achieved without compromising public safety.
4. Following suspects who are evading law enforcement in a moving vehicle.
5. When use of the UAS would not enhance the safety of officers, suspects, or victims, or the community at large in preparing for and during SWAT operations, the service of search warrants, conducting parole or probation searches, or for investigations requiring an Operational Plan.
6. Traffic enforcement purposes (i.e., drone will not be used to covertly monitor intersections for traffic violations or pace vehicles to calculate speed).
7. Boxing-in, or blocking the path of any person not actively involved as a suspect in an active criminal investigation, who could be legally detained.
8. Arming any drone with any form of lethal or less-lethal weapon.

Notwithstanding the uses or restrictions above, the Chief of Police or his or her designee must approve any other use.

339.2.1 DEFINITIONS

1. Federal Aviation Administration (FAA). The national aviation authority of the United States, with powers to regulate all the aspects of aviation in the U.S.
2. An Unmanned Aircraft System (UAS) is an unmanned aircraft and the equipment necessary for the safe and efficient operation of the aircraft. An unmanned aircraft is a component of a UAS. It is defined by statute as an aircraft that is operated without the possibility of direct human intervention from within or on the aircraft (Public Law 112-95, Section 331(8)).

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3. UAS Pilot is the person who is piloting (physically) the flight of the UAS.
4. UAS Team is the team of authorized personnel associated with operation of Unmanned Aircraft Systems.
5. UAS Visual Observers (VOs) are ground-based observers who assist with operations and will assist the remote pilot in command (RPIC) to utilize the “see and avoid” technique by scanning the area for air traffic or possible hazards.
6. Remote Pilot in Command (RPIC) is the person who is ultimately responsible for the safe operation of the UAS and the public’s safety during the flight whether physically piloting the UAS or monitoring another authorized pilot.

339.3 MANAGEMENT / SUPERVISION OF UNMANNED AIRCRAFT SYSTEM (UAS)

The Department Operations Commander, or his/her designee, shall serve as the UAS Team’s supervisor and is responsible for the overall management of the team. Given the technical nature of aviation, the UAS Team’s supervisor may, at his or her discretion, assign responsibility for UAS operations to a Team Leader with the necessary knowledge, skills and abilities to safely and effectively manage the day-to-day operation of the UAS Team.

In consultation with the UAS Team Leader, the deployment of a UAS shall only be for authorized missions and by the approval authority depicted in the below matrix:

Authorized UAS Missions	Approval Authority	Deployment Guideline
Photography for social media, Department publications and branding	Command Staff	Static
Natural disaster evaluation and response	Command Staff	Dynamic
Mapping crime scenes and traffic collision investigations	Sergeant or above	Static
Search for missing person(s)	Sergeant or above	Dynamic
Animal Services mapping and location of wildlife paths of travel in unpopulated areas	Command Staff	Static
Deployment during Special Weapons and Tactics (SWAT) operations or high-risk warrant service	Command Staff	Dynamic
Training	Sergeant or above	Static
Roof checks in response to burglar alarm calls for service	Sergeant or above	Static
Searches for suspects or articles such as weapons within established police perimeters	Sergeant or above	Dynamic

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Any other use	Chief of Police or his/her designee	As Directed
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339.4 DEPLOYMENT GUIDELINE

Static

A static situation is one in which the UAS could be deployed in an environment controlled by members of the Irvine Police Department (IPD) and in a manner that is relatively non-intrusive to the general public, yet provides a benefit and value to IPD and its mission. A static situation must meet the following requirements:

1. The area under the airspace where the UAS is operating is clear of persons who are not directly participating in the operation of the UAS unless they are in a stationary vehicle or structure that can provide reasonable protection from a falling UAS (FAA Part 107.39).
2. Steps must be taken to exclude non-participatory persons from entering the area under the UAS operation.
3. The incident that precipitated the UAS deployment is not an in-progress crime or a search for a person (suspect or otherwise).
4. Deployment of the UAS in a static situation would require at least two personnel:
 - (a) Remote Pilot in Command (RPIC)
 - (b) Visual Observer (VO)
 - (c) Additional personnel may be required based on the evaluation of the operation by the RPIC (such as a cover officer for the UAS team).

Dynamic

A dynamic situation is one in which the drone could be deployed in a less than stable or volatile situation. The area under the UAS may not be completely secured by IPD personnel and, therefore, may require flying over persons or under rapidly changing conditions. These may include situations that involve imminent threat to life or great bodily injury. A dynamic situation will require increased situational awareness and coordination with the UAS Team members and the Incident Commander. A dynamic situation is any situation that does not meet the definition of a static situation. Examples of a dynamic situation include, but are not limited to:

1. Any incident involving a SWAT callout, or SWAT/Crisis Negotiation Team (CNT) involvement.
2. Any incident involving the use of a UAS for Search and Rescue (SAR).

Personnel guidelines for deployment of the UAS in a dynamic situation:

1. As in a static situation, there must be at least two team members, a RPIC and a VO, assigned to the operation.
2. Due to the volatile and changing nature of a dynamic situation, it is very likely that more personnel will be required to safely and effectively execute the mission.

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3. Additional considerations:
 - (a) Additional VOs may be needed due to buildings and other obstructions.
 - (b) Cover officer(s) to ensure the safety of the operation within the context of the specific incident and security of the UAS Team.
 - (c) It may be preferable to locate the UAS Landing Zone/Base of Operation away from the Command Post.
 - (d) Reliable method of communication between RPIC and VOs.
 - (e) A dedicated VO to operate the camera on the UAS.

339.5 UAS TEAM LEADER

The UAS Team Leader is responsible for the following:

1. Ensuring all UAS Team members understand applicable regulatory requirements, standards, and organizational safety policies and procedures.
2. Observe and control safety systems through monitoring and supervision of UAS Pilots and Visual Observers.
3. Measure RPIC and VO performance and compliance with organizational goals, objectives and regulatory requirements.
4. Review the standards and practices of agency personnel as they impact flight safety.
5. Ensure that RPICs, Pilots and VOs receive the proper training to fulfill the duties of their respective roles.
6. Act as the Flight Safety Officer or designate a member of the UAS Team to fulfill the role of the Flight Safety Officer. The Flight Safety Officer will provide the UAS Team with up-to-date safety information, conduct training session debriefs, identify safety-related concerns and corrective actions, and reinforce that safety is the responsibility of all members of the UAS Team.

339.6 UAS PILOTS AND VISUAL OBSERVERS

UAS Team must acquire a valid FAA Part 107 Certification within 120 days of joining the UAS Team. On any given mission, a UAS team member may be called upon to perform the duties of either a UAS Pilot or a UAS Visual Observer. UAS Team members must maintain proficiency in the operational standards of both positions. The Chief of Police is responsible for determining the number of certified personnel necessary to best serve the Department's needs.

The primary duty of a UAS Pilot is to operate the drone in a safe and effective manner in accordance with FAA regulations and Department procedures. Pilots must remain knowledgeable of all of the above guidelines at all times.

The primary duty of a VO is to coordinate operations between the UAS and ground personnel. The VO will also identify risks to police personnel, the public and property, including the drone, and take immediate steps to coordinate with the RPIC to mitigate or avoid those risks.

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In order to fly a mission (other than flights required for training or currency), pilots must have completed three (3) currency events within the previous 90 days. Currency events include landings, takeoffs and simulator flights.

339.7 UAS FLIGHT CREW RESPONSIBILITIES AND COORDINATION

339.7.1 UAS REMOTE PILOT IN COMMAND RESPONSIBILITY

1. The UAS Remote Pilot in Command, in conjunction with the approving authority, is directly responsible for and is the final authority over the operation of the UAS.
2. UAS Pilots and Remote Pilots in Command have the absolute authority to reject a flight due to weather, aircraft limitations or physical conditions. No member of the Irvine Police Department, regardless of rank, can order a UAS Pilot to conduct a flight when, in the opinion of the Pilot, it would be too unsafe to do so.
3. UAS Pilots are responsible for compliance with FAA regulations and the Irvine Police Department UAS Policy.
4. Pilots shall communicate as warranted with Air Traffic Control (ATC) and other aircraft. When under the control of ATC, the Pilot will not monitor law enforcement radio communications.
5. Pilots shall be responsive to the requests of the UAS Visual Observer in order to accomplish the mission.
6. Pilots shall be responsible for documentation for mission training and updating of flight books.

339.7.2 UAS VISUAL OBSERVER RESPONSIBILITY

1. See and avoid any obstacle that will reduce safety during the mission or training.
2. UAS Visual Observers are responsible for the law enforcement aspect of the deployment.
3. Operate any attachments to the drone, allowing the UAS Pilot to maintain complete focus on the operation of the drone.
4. Remain alert for suspicious persons or activities on the ground and coordinate response by ground units. UAS Visual Observers shall monitor radio updates.
5. Assist the UAS Pilot to achieve safe operation of the drone.

339.7.3 UAS FLIGHT CREW COORDINATION

1. The UAS Pilot and UAS Visual Observer will work closely to form the crew that will ultimately accomplish mission objectives.
2. The UAS Pilot and UAS Visual Observer are the custodians of evidence. In this capacity, they are responsible for the safeguarding and proper processing of any evidence including, but not limited to, digital imagery to include still and video images.

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3. In the interest of safety, both the UAS Pilot and Visual Observer must be comfortable with any decision made while working as a crew. This begins when deciding whether to accept the mission and continues throughout the mission.
4. Every UAS crew member has an obligation to communicate any concerns to the UAS Team Leader, Remote Pilot in Command or UAS supervisor prior to flight.
5. UAS Visual Observers have the right, as well as the responsibility, to question the UAS Pilot whenever they do not understand something, or are uncomfortable with certain procedures, weather, mission parameters, etc.

339.8 PREFLIGHT AND FLIGHT PROCEDURES

339.8.1 PREFLIGHT PROCEDURE

Preflight procedures will be conducted prior to each flight mission and will be done in accordance with the checklist prepared by the Irvine Police Department UAS Team Leader and in accordance with the manufacturer's recommendations. Any issues found during the preflight procedures should be documented in the UAS log and it will be the decision of the UAS Pilot to determine if the issue will alter the safe flight and operation of the drone.

339.8.2 LAUNCH PROCEDURES

1. Prior to the launch of the UAS, the Pilot is responsible for ensuring the checklist is completed and the aircraft ground station is safe to operate.
2. The UAS Pilot will communicate with the Visual Observer to confirm the area is visibly clear of any low-flying air traffic, hazardous obstacles or safety hazards prior to takeoff.
3. As warranted, the UAS Pilot is responsible for notifying the John Wayne Air Traffic Control Tower (or other appropriate FAA facility), in accordance with the rules and guidelines set forth by the FAA.

339.9 POSTFLIGHT AND FLIGHT PROCEDURES

339.9.1 POST LAUNCH

1. Although the drone can fly autonomously, the UAS Pilot and Visual Observer will monitor the aircraft, base station and payload systems to ensure the drone is flying as designed and maintains the proper altitude.
2. After takeoff, UAS crew members shall perform tasks according to their job assignment, while communicating clearly and effectively to monitor the drone as it climbs to the desired mission altitude.

339.9.2 LANDING PROCEDURES

1. The Pilot will determine if the objectives of the mission are complete or if the mission is too unsafe to continue prior to landing the aircraft.
2. The Pilot will confirm with the Visual Observer as necessary that the flight path to the "return home" location is clear prior to giving the command for the UAS to "return home."

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3. The Visual Observer will monitor the aircraft as it is landing to ensure a proper landing. If the aircraft is not landing as desired or commanded, the VO will notify the Pilot, who will determine whether to abort the landing.
4. As warranted, it will be the responsibility of the RPIC to ensure contact with the John Wayne Air Traffic Control Tower or proper tower in accordance with FAA guidelines to advise completion of the mission.

339.10 UAS COLLISIONS

1. If a collision occurs during the operation of the UAS and results in serious injury to any person, any loss of consciousness, or if it causes damage to any property (other than the UAS) in excess of \$500 to repair or replace the property, notification shall be made to the Flight Standards District Office located in Long Beach within 10 days, per FAA guidelines.
 - (a) Flight Standards District Office for Orange County https://www.faa.gov/about/office_org/field_offices/fsdo/lgb/
 1. Long Beach Flight Standards District Office (562) 420-1755 - Office Address: 5001 Airport Plaza Drive, Long Beach, CA 90815
2. While at the scene, the Remote Pilot in Command shall notify the UAS supervisor or the Incident Commander, who shall respond to photograph or direct CSI to photograph the collision scene and any resulting injuries or property damage. The Remote Pilot in Command shall be responsible for completing an Incident Report to the UAS Supervisor describing the incident and damage. If the collision results in less than \$500 in damage, or the only damage is to the UAS, an Incident Report shall be completed by the Pilot and notification to the UAS Supervisor shall be made. In either case, the UAS Supervisor shall conduct or direct a review of the collision and determine if the collision could have been prevented through maintenance, training, etc., and ensure all necessary paperwork has been submitted. As warranted, the UAS Supervisor should contact the City's Risk Management Administrator.

339.11 MAINTENANCE

A properly maintained UAS is essential to its safe operation. Compliance with the preflight checklist, postflight inspection and the immediate repair of mechanical problems will ensure the availability and safety of the Department's UAS.

The UAS Team Leader will designate a UAS Maintenance Officer who will coordinate maintenance for the UAS. This assignment can be in addition to other duties of a team member or someone outside the UAS Team. If possible, maintenance will be scheduled when it will have the least impact on operations. The Maintenance Officer shall notify the UAS Supervisor and UAS Team Leader of the operational status of the UAS. The Maintenance Officer shall be responsible for keeping the UAS maintenance record updated.

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339.12 TRAINING

1. All members within the UAS Team who will act as a UAS Pilots, RPICs or VOs, shall be trained and will maintain proficiency in their pilot/observer abilities. Each UAS Team Member shall be a certified Part 107 operator in accordance with FAA requirements and standards within 120 days of joining the team. The UAS Pilot will stay proficient in the job function by participating in monthly scheduled Department training sessions. During these training sessions, the UAS Pilot will be required to fly a qualification course with a passing score. All members of the UAS Team will maintain proficiency by participating in monthly training. The training will include a qualification course and skills-based exercises consistent with Public Safety deployment scenarios. A UAS Pilot who does not have any documented training or flight time within a span of 90 days (due to vacation, court appearance, etc.) will have to show proficiency prior to any deployment, and the Supervisor or Team Leader may suspend his/her duties until the pilot has had updated training and completed a qualification course. The UAS Pilot can also utilize a simulator program (if available and with approval) to stay proficient if there are scheduling issues or a lack of flight training due to weather.
2. Data Retention: With the exception of training and demonstration purposes, when the UAS is utilized to capture video or still images the recordings shall be reviewed for evidentiary value. Any items of evidentiary value shall be downloaded and booked as evidence under the related case number. Audio and/or images captured by a UAS and booked as evidence shall be retained in accordance with Irvine Police Department property and evidence policy 8.02.
3. Documentation: The UAS Remote Pilot in Command or an involved crew member shall document all flights on a UAS Utilization Form. The documentation shall, at minimum, include:
 - (a) All flight times, hours and locations (flight path if available)
 - (b) Reason for the flight
 - (c) Roles of the personnel and name of approving supervisor
 - (d) Any additional relevant information to the mission
4. Statistics: The UAS Team Leader should submit statistics to the UAS Commander for review each month. These reports should include:
 - (a) Number of flights
 - (b) Personnel involved
 - (c) Total flight time
 - (d) Any maintenance completed
 - (e) The number of flights resulting in the collection and retention of data and any additional relevant information regarding missions preformed
 - (f) Training exercises

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339.13 STORAGE

UAS and associated equipment shall be stored in a secured location within the Irvine Police Department or approved offsite location and UAS shall not be operated for personal use.