

Wright County Sheriff's Office
Unmanned Aerial Vehicle (U.A.V.)
Operations and Procedure
Manual



Updated:
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Introduction

The Wright County Sheriff's Office in accordance with Federal Aviation Administration (F.A.A.) regulations and internal policies will be utilizing Unmanned Aerial Vehicles (U.A.V.). The use of these devices is meant to enhance the Sheriff's Office's ability to protect lives and property when other means and resources are not available or are less effective.

The following operating procedures are intended to give the user (operator) of the U.A.V. a guideline to follow for the safe operation of the U.A.V. required training and the adherence to these procedures as well as applicable policies will be expected and demanded of all personnel who operate a U.A.V. for the Wright County Sheriff's Office.

The use of a U.A.V. by the Wright County Sheriff's Office will be primarily for search and rescue and for mapping / documenting outdoor crime and accident scenes. The U.A.V. may also be used for any task that can best be accomplished from the air with due regard to the protections granted to the citizens of Wright County by the Constitution of the United States of America and the State of Minnesota.

The procedures contained in this manual are issued under the authority of the Wright County Sheriff. The manual is not intended to cover all scenarios that Deputies and U.A.V. operators may encounter. The manual is intended to be a supplement to all other Wright County Sheriff's Office policies regarding the use of a U.A.V. Operators of the U.A.V. will also be expected to know and adhere to all F.A.A. regulations, U.A.V. manufacturers' approved procedures, and all other training and regulations deemed necessary by the Wright County Sheriff's Office.

This manual may be changed over time to address changes in regulations, policies, and training in the use of a U.A.V. An annual review of this manual will be completed and any changes to the manual, applicable policies, or procedures will be communicated immediately to all members.

A copy of this manual will be issued to every person having U.A.V. responsibilities.

Personnel

Commanding Officer:

The Unit supervisor (Operations Lieutenant) will serve as the commanding officer of unmanned aviation operations. The commanding officer is responsible for overall management and supervision of the operation. These responsibilities include but are not limited to the following:

- Budget preparation, personnel selection, etc.
- Public relations including addressing concerns or complaints from the public as well as addressing the media.
- Addressing requests for support from other government agencies within or outside of Wright County.
- Approving and scheduling training plans created and maintained by the Operations Supervisor.
- Creation of and maintaining training plans for all members of the U.A.V unit.

The commanding officer may at their discretion, assign responsibility for the operation to any member who has the knowledge, skills, and abilities to safely and effectively manage the operation.

Operations Team Leader:

The Sheriff's Office Administration and/or the Unit Supervisor may assign one U.A.V. team member to act as the Operations Team Leader. This person will be responsible for the following:

- Ensuring all flight operations personnel understand and follow applicable regulatory requirements, standards and organizational safety policies and procedures.
- Observe and control the safety of an operation by supervising and monitoring U.A.V. operators.
- Ensure that all operations are documented properly and that they follow all applicable policies and procedures.

- Ensure that any unsafe actions, policy violations, or procedure violations are documented and immediately reported to the unit's Commanding Officer.
- Designate or identify instructors who will organize proficiency exercises, as well as on-going training for U.A.V. operators and supervisors.

Operators:

To be considered for selection as an operator, applicants must be off of probation status, be in good standing with the Sheriff's Office, and meet all FAA requirements and all other requirements imposed by the Sheriff.

An operator's primary duty is the safe and effective operation of the Sheriff's Office U.A.V. program. Operators will be expected to utilize the U.A.V. in accordance with State and Federal law, manufacturers' approved flight manual, FAA regulations and Sheriff's Office procedures. Operators must remain knowledgeable of all State and Federal laws pertaining to the operation of UAV's, FAA regulations; U.A.V. manufacturers' flight manual and Sheriff's Office policies and procedures.

Operators may be removed from flight status at any time by the Sheriff, or their designee, for reasons including performance, proficiency, etc.

Medical Factors:

Each member shall report to duty rested and emotionally prepared for the tasks at hand. Physical illness, exhaustion, emotional problems, etc. can seriously impair judgement, memory and alertness. The safest rule is not to act as an operational crew member when suffering from any of the above.

A self-assessment of physical condition shall be made by all operation members during pre-launch activities.

No member shall act as an operation member within eight hours after consumption of any alcoholic beverage or while under the influence of alcohol and/or controlled substances.

Training:

The key to continued safe operations is by maintaining a professional level of unmanned aviation competency. The first step in this process is establishing minimum qualifications for selecting U.A.V. members. The second step involves training.

All new members shall receive training in the following prior to serving in an operational capacity:

1. Agency commitment to safety.
2. Agency policies and procedures.
3. State and Federal laws pertaining to the use of the U.A.V.
4. Process for reporting activities with the use of the U.A.V.
5. Applicable emergency procedures.
6. Agency commitment to the public's interest.

Training objectives will vary depending on whether the member is new to unmanned aviation or an existing member. For new members, the focus will be familiarization with the equipment and operational procedures. Existing members will focus on recurrent training, etc. Objectives should challenge the member to increase their competency in the areas of knowledge and skills, necessary to perform at their best.

Training plans shall be maintained in a file and reviewed periodically to ensure progress towards objectives. This shall include the signature of the employee receiving the training.

Initial Training:

Initial training will be conducted to provide new operators with skills sufficient to operate the U.A.V. including specific system training.

New operators need to become familiar with aviation operations, the U.A.V. and its equipment.

Any new member who fails to successfully complete initial training may be subject to removal from the U.A.V. program.

Annual Training:

Regular proficiency flights will be required for each individual operator. Proficiency is defined as being able to consistently demonstrate a level of skill in operating unmanned systems.

Any operator who has not flown an unmanned aircraft of the type operated by the Sheriff's Office for 60 days or longer must successfully complete a proficiency flight prior to acting as an operator in command of the Sheriff's Office U.A.V.

Annual training is not limited to actual operator skills but includes knowledge of all pertinent U.A.V. matters.

Failure to prove proficiency can result in removal from U.A.V. responsibilities.

General Operating Procedures:

Requests for U.A.V. services

Requests received during duty hours will be handled by the on duty team member. If no member is on duty at the time of the request, the patrol supervisor and or the U.A.V. Commanding Officer will be contacted.

Requests during non-duty hours that are not of an immediate nature will be referred to the patrol supervisor.

All requests shall be approved by the UAV Commanding Officer prior to flight.

All U.A.V. flights that require a search warrant will not be conducted until required court authorization is obtained. When a search warrant is required the search warrant application shall be completed by the requesting personnel or supervisor with the assistance of a U.A.V. team member. Search warrants shall be reviewed prior to submittal to a judge by the U.A.V. Commanding Officer or another member of the Sheriff's Office Command Staff.

All U.A.V. flights require a search warrant with the following exemptions

1. During the aftermath of an emergency situation that involves the risk of death or bodily harm to a person.
2. Over a public event where there is a heightened risk to the safety of participants or bystanders.

3. To counter the risk of a terrorist attack by a specific individual or organization if the agency determines that credible intelligence indicates a risk.
4. To prevent the loss of life and property in natural or man-made disasters and to facilitate operational planning, rescue, and recovery operations in the aftermath of these disasters.
5. To conduct a threat assessment in anticipation of a specific event.
6. To collect information from a public area if there is reasonable suspicion of criminal activity.
7. To collect information for crash reconstruction purposes after a serious or deadly collision occurring on a public road.
8. Over a public area for officer training or public relations purposes.
9. For purposes unrelated to law enforcement at the request of a government entity provided that the government entity makes the request in writing to the law enforcement agency and specifies the reason for the request and proposed period of use.

Mission Priorities

Given the limited number of U.A.V. personnel available, it is necessary to prioritize calls for service.

In general, calls are prioritized as follows:

1. In progress calls involving a threat to the safety of any person.
2. Search and rescue
3. Crime scene reconstruction operations
4. Motor Vehicle crash reconstruction operations
5. Searches for fleeing criminal suspects
6. Requests to support other government agencies

(There may be many other types of requests and their priority will be assessed by patrol supervisors and the U.A.V. Operations Commander)

Flights Leaving the County

Planned U.A.V. operations leaving the jurisdictional boundaries of Wright County need specific approval of the Sheriff or their designee and may require specific FAA authorization.

Flight Crew Responsibilities

The flight crew will be made up of the following:

1. Pilot in charge (PIC)
2. Sensor operator/observer (S/O)
3. Observers

The Pilot in charge is directly responsible for and is the final authority over the operation of the U.A.V. They have absolute authority to reject a flight based on weather, aircraft limitations, physical condition, etc. No member of the Sheriff's Office, regardless of rank, can order an operator to make a flight when, in the opinion of the Pilot in charge it cannot be done safely.

PIC's are responsible for compliance with this manual and FAA regulations.

PIC's or their designees, shall handle radio communications with air traffic control or other aircrafts when needed.

The PIC is responsible for the overall operation of the U.A.V. this includes unpacking and re-packing the U.A.V. and ensuring all items are returned to their proper place and that all batteries are charged.

The Sensor operator/observer is responsible for the law enforcement aspect of the mission and must be a member of the U.A.V. team.

The S/O shall operate the payload (camera system) and handle communications between ground units and U.A.V. members.

The S/O shall remain alert for persons or activities on the ground and coordinate any needed response by ground units.

The S/O will avoid any unnecessary communications with the PIC during take off and landing.

The PIC and S/O will work together to form the crew, which will ultimately accomplish mission objectives.

In the interest of safety, both the PIC and S/O must be comfortable with any decision made while working as a crew. If there is genuine concern on the part of either the PIC or S/O, the mission should not be accepted or should be terminated.

Concern on the part of either crew member should be immediately expressed to the other members. Communication is primary. Many times, reservations about something can be put to rest with a simple explanation.

THE CREW CONCEPT AND OPEN COMMUNICATION WILL HELP ACHIEVE SAFE OPERATIONS.

Observers are to assist the PIC with situational awareness of the airspace and can be designated as any member of the Sheriff's Office by the PIC on scene.

Flight Time Limitations and Rest Requirements:

During any 24 hour time period, the total flight time of any PIC may not exceed 8 hours. A PIC flight time may exceed the flight time limits if the assigned flight time occurs during a regularly assigned duty period of no more than 14 hours and:

- Each flight assignment must provide for at least 8 consecutive hours of rest during the 24 hour period that precedes the planned end of the agency flight.

Preflight Actions:

Thorough preflight planning and inspections are critical to safe operations and shall be done before any approved operation.

Prior to any flight, including training and mission flights, a NOTAM (Notice to Air Men) will be issued in accordance with the Certificate of Authorization issues by the FAA. The NOTAM can be issued through any of the FAA approved portals.

No NOTAM need be issued for a maintenance test flights that will be less than 15 feet AGL and less than 5 minutes in length. A maintenance test flight is for testing a recently repaired or calibrated UAV to ensure the repair or calibration was completed successfully

Physical Assessment:

- Preflight assessment of the crew making a self-assessment of their physical condition. If unable to perform duties, the crew member will decline such activity.

Inspections:

- The PIC shall conduct a thorough preflight inspection of the U.A.V. in accordance with the instructions contained in the U.A.V. aircraft flight manual.
- The PIC shall utilize a checklist for preflight inspections. This checklist shall be maintained for every operation.
- The S/O shall do a preflight inspection of the payload (camera system) to make sure all components are operating correctly.
- The PIC shall gather information on the weather. The PIC will ensure that he/she gathers enough information for the area weather for the entire operation. If at any time the PIC or any member of the U.A.V. team determine that the weather conditions are not safe for the mission, the mission shall be postponed until conditions are safe for the operation of the U.A.V.
- The PIC and/or U.A.V. team members shall do a cursory inspection of the flight area to ensure there are no high power utility lines, sub stations, or other external factors that could disrupt the function of the U.A.V. during the mission.
- The PIC and S/O will conduct a thorough post flight inspection immediately after the completion of the mission to ascertain if any damage was sustained during operation. If necessary repairs are needed the U.A.V. will be serviced immediately so that it is available for the next operation.

Documentation:

All U.A.V. flights will be logged in a U.A.V. flight log.

Subsequent reports as needed will be linked to any active ICR for the situation. For example, if a flight is needed to document a motor vehicle crash a U.A.V. report shall be started and linked to the original motor vehicle crash report.

All U.A.V. flights will require a report connected to a unique case number and will provide a factual basis for the use of the U.A.V. The report will also document the

applicable exception of a search warrant unless a search warrant was obtained. In cases where a search warrant was obtained a copy of the warrant shall be attached to the report.

All flights will be recorded. (Video will be running during all flights). Training flight recordings can be stored in a training folder. All mission flight recordings will be placed into evidence under the respective ICR created for the mission.

Any crashes or accidents either during training or mission flights will be documented with an ICR including reports from all personnel involved or in the area during the crash. All video and flight data will be downloaded and stored under the respective ICR.

All recordings will be logged under the appropriate case number and retained per the Sheriff's Office retention schedule.

Flight logs will be maintained on file for a period of at least one year.

Emergency Response Plan:

During U.A.V. operations, emergency situations may develop at any time. The primary concern in such incidents is the prevention of injury to persons on the ground and or other users of the airspace. Secondary concerns include protection of property and the U.A.V.

If at any time during the operation of the U.A.V. there appears to be a malfunction or there is an unexpected loss of visual sight, or video feed, the U.A.V. shall be brought back to its launch site, inspected, and restarted. If malfunctions continue after secondary inspection the flight shall be cancelled. The cancelation of a flight can be made by any member of the U.A.V. team at any time.

For an U.A.V. accident with personal injury and or significant property damage, the crew shall do the following:

- Immediately notify dispatch and request assistance. Provide as much information as possible about the extent of the injuries or damage.
- Provide information to Air Traffic Control, if necessary.
- Render first aid to the injured.

- Request notification of the U.A.V. commanding officer who will notify the Sheriff and or his/her designee.
- The U.A.V. commanding officer will respond to the scene of any personal injury accident or major property damage accidents to coordinate accident investigation efforts.
- Request the FAA and NTSB be notified, if necessary.
- Survey the damage to the U.A.V. and other property.
- Submit a detailed written report to the Sheriff about the incident.

All members of the U.A.V. team shall receive basic first aid training and shall carry with them a Department issued first aid kit.

Miscellaneous:

Personal use of the Sheriff's Office U.A.V. is prohibited

U.A.V. shall be operated within line of sight at all times.

U.A.V. use during severe weather conditions such as thunderstorms, extreme wind, snow, extreme cold, etc. is prohibited.

The maximum altitude for operations is 400 feet.

If a PIC and S/O are not available or are unable to continue a mission the flight shall be terminated as soon as practical.

The PIC under no circumstances will leave any unauthorized person in charge of the U.A.V.

Maintenance:

Compliance with the U.A.V. manufacturer's scheduled maintenance, preflight inspections and immediate repair of mechanical problems ensure the availability and safety of the U.A.V.

- The Operations Supervisor will coordinate the maintenance of the Sheriff's Office U.A.V.
- If possible maintenance will be scheduled when it will have the least impact on operations.
- The Operations Supervisor will maintain the U.A.V.

- The Operations Supervisor will work with the Commanding Officer to prepare the annual budget request for maintenance related needs. To accomplish this it will be necessary to accurately project, which parts or components will need to be replaced. It will also be necessary to document which systems will require certification, inspections, etc.