**WOODWAY PUBLIC SAFETY DEPARTMENT KHALIL EL-HALABI**

**PUBLIC SAFETY DIRECTOR**

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| **GENERAL ORDERS** | | **EFFECTIVE DATE**  08/29/2023 | | | **ORDER NUMBER**  **GO 25-16** | |
| **SECTION**  **EFFECTED ALL** | **AMENDS/SUPPLEMENTS**  **ALL CONFLICTING** | | **DISTRIBUTION**  **GENERAL** | **FILING CODE**  **G.O.** | | **PAGE**  **1 OF 6** |
| **SUBJECT:**  UNMANNED AIRCRAFT SYSTEM (UAS) | | | | | | |
| **PURPOSE:**  TO ESTABLISH THE AUTHORIZED USE AND OPERATIONAL GUIDELINES FOR UNMANNED AIRCRAFT SYSTEMS (UAS) | | | | | | |

1. DEFINITIONS

Aircraft: A device that is used or intended to be used for flight in the air. This includes UAS.

Airworthiness Statement: The Airworthiness of the UAS is self-certified by the Remote Pilot in Command through a preflight inspection prior to flight.

UAS Program Coordinator: The individual responsible for assisting in the tactical and administrative functions related to the UAS program, including maintaining a current list of all certified crew members to include Remote Pilots and Visual Observers. The Program Coordinator is responsible for maintaining the training records for crew members and compliance with Texas Government Code 423 reporting requirements. The Program Coordinator is also responsible for the condition, maintenance, and flight records of the UAS and its associated equipment.

Remote Pilot in Command (RPIC): The mission commander with on-site authority for the UAS. The individual solely responsible for the overall flight operations for a specific mission. The Officer may also act as either Remote Pilot or Visual Observer. Regardless, the Officer may not delegate their responsibility. A RPIC may only operate one UAS at a time. Each UAS in use shall have its own RPIC assigned. All RPICs shall be licensed through 14 CFR 107. The RPIC shall be held responsible for all aspects of the mission regarding UAS operation.

Unmanned Aircraft System (UAS): UAS is the unmanned aircraft system and all of the associated support equipment, control station, data links, telemetry, communications, and navigation equipment, etc., necessary to operate the unmanned aircraft. The aircraft’s flight is controlled either autonomously by hardware within the UAS or under the remote control of a Remote Pilot on the ground or in another ground vehicle. For purposes of this program, the 14 CFR 107 compliant UAS shall weigh less than 55 pounds fully loaded with a maximum groundspeed of less than 100 mph.

Visual Flight Rules (VFR): All flights with the UAS shall be conducted under VFR conditions and at an altitude below 400’ AGL. VFR is established as a 3 mile visibility and a cloud ceiling of 1,000 feet for day operations and a 5 mile visibility and a cloud ceiling of 2,000 feet for night operations.

Visual Observer: The individual(s) trained to maintain the line-of-sight and 360 degree hazard awareness around the UAS at all times and assist the RPIC in carrying out all duties required for the safe operation of the UAS. Visual Observers may be formally trained and certified for special operations (formal training is required for night operations), or they may be chosen and properly briefed by the RPIC (day operations only).

1. POLICY

The Unmanned Aircraft System (UAS) is a tool to assist the Woodway Public Safety Department and any other departments that request mutual-aid in public safety applications such as search and rescue, fire responses, accident investigation, and crime scene mapping. The Unmanned Aircraft Systems used by the Woodway Public Safety Department are for observation purposes only and are not armed.

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1. GUIDELINES
2. Qualifications and Training
3. All first responder pilots must receive their qualification by successfully completing an approved training course on UAS operations. Within 1 year of completing this training, the UAS pilot should complete the FAA (Federal Aviation Administration) commercial UAS license Part 107 test.
4. To remain proficient, pilots will log a minimum of 15 hours of day flight time and 3 hours of night flight time annually and show a working knowledge of maintenance of the aircraft. All flights will be documented in an approved log book.
5. Duties
6. Pilot in Command (PIC) – The PIC will function as the team leader and operator of the UAS. The PIC is solely responsible for piloting the UAS in flight. Additionally, the PIC will be responsible for the assembly, flight preparation, and post flight storage of the UAS.
7. Observer – The observer will maintain a visual observation of the UAS while it is in flight and alert the PIC of any conditions (obstructions, terrain, structures, air traffic, weather, etc.), which may affect the safety of the flight. Additionally, the observer will be responsible for all aviation related communications required by Federal Aviation Regulations (FARS) 91.3. To accomplish this effectively, the observer should be in close proximity to the PIC to ensure instant relaying of information. Additional observers may be necessary.
8. Call-out Procedures
9. The UAS may be called for numerous purposes for applications that require the use of aerial footage.
10. Call outs may include but are not limited to: search and rescue of persons, fires or potential fire hazards, major accidents, hazardous material incidents, SWAT operations, assistance with narcotic operations, or other patrol functions.
11. Safety of Operations
12. The safety of UAS operations is the responsibility of the entire team.
13. Except as required by the mission, all UAS team members will ensure no persons are in the vicinity of the UAS during operations.
14. Except for the purposes of training, only agency personnel who meet the requirements set forth in Section III-A.
15. UAS members will comply with UAS operator manual, warnings, limitations, placards, or checklists at all times.
16. The PIC is authorized to evaluate, accept or decline any mission or portion thereof for the safety of operations.
17. All UAS flights will be conducted in Visual Flight Rules (VFR) conditions.
18. Flights within 5 nautical miles of a controlled airport require notification and clearance by control tower and Low Altitude Authorization and Notification Capability (LAANC).
19. Flight operations should never exceed 400’ above ground level (AGL), unless an emergency dictates this maneuver and it can safely be executed.

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1. The Flight Operations Team (PIC or Observer) are not to be distracted and should not be approached by non-flight relevant personnel during UAS operations.
2. Normal Operations
3. The area selected by the UAS team should be secure if possible. The site selected and utilized should be restricted to the personnel involved in operations.
4. The area should be evaluated for adequate space and clearances in order to assemble, launch, operate, and recover the UAS.
5. Attention should be given to overhead obstacles and obstructions that may pose a risk to the UAS during operations.
6. The area of operations is limited to the incident.
7. UAS Assembly and Use
8. The UAS will be assembled on site by the team according to the manufacturer instructions and guidelines.
9. The observer is required to “double check” the aircraft assembly to confirm that it is assembled properly for flight.
10. Only manufactured approved batteries and charging units will be used. When possible, fully charged batteries will be used. The aircraft will land as soon as practical when low battery alerts are received.
11. Pre-flight
12. A pre-flight check will be completed according to the manufacturer’s checklist.
13. Components should be checked to ensure correct operations and security to the aircraft.
14. If any flight component fails inspection, the UAS is not to be utilized.
15. Flight Operations
16. General
17. In the event of lost link, the UAS must initiate a flight maneuver that ensures landing of the aircraft. In the event that the UAS could potentially enter controlled airspace, the PIC will immediately contact the appropriate ATC facility having jurisdiction over the controlled airspace to advise them of the UAS’s last known altitude, speed, direction of flight and estimated flight time remaining and the proposed action to recover the UAS.
18. The UAS DJI products are preconfigured/programmed in the event of a Lost Link condition to stop forward flight and attempt to regain link to the remote operated by the PIC. If the link is not re-established the UAS programmed to initiate a Return to Home maneuver. If link is not re-established the PIC will also initiate a manual Return to Home function on the UAS’ remote.
19. If the link is reestablished the PIC will take control of the UAS and maneuver the UAS back to the launch location if safe to do so. If link is intermittent the PIC will immediately land the UAS in a safe location.
20. When the UAS is deployed to meet an approved mission task, it shall be recovered within the same general area if possible.

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1. A designated safe area of at least 25 feet shall be maintained during lift off between the UAS and personnel.
2. The UAS should not be flown within unsafe distances to any object or person.
3. Weather – The PIC shall verify the weather conditions in the immediate area of operations. A local source of weather may be utilized, the internet, phone application or may be observed on site. The UAS will not be flown outside the weather minimums identified by the manufacturer. The PIC shall have final determination of risk due to weather and authority over any mission.
4. Hazards to the public – The PIC shall make every effort to ensure that flight operations will not pose any undue risk to the public not directly involved with the effort. The PIC shall have final determination of risk to the public and authority over any launch of the UAS. In all cases, the flying over persons with the UAS will follow FAA regulations.
5. Hazards to property – The PIC shall make every effort to ensure that flight operations will not pose any undue risk to any property in the area involved with the effort. The PIC shall have final determination of risk to the property and authority over launch of the UAS.
6. Hazards to personnel – The PIC shall make every effort to ensure that flight operations will not pose any undue risk to personnel directly involved with the effort. The PIC shall have final determination of risk to the public and authority over any launch of the UAS.
7. Proximity to controlled airspace – Operations inside any controlled airspace shall only be performed with the approval of ATC or if a waiver has been issued by the FAA.
8. Launch and Landing Zones
9. Launch Site Selection
10. Launch site selection shall be driven by safety first and foremost. Selection of launch sites will be considered based upon:
11. Ability to maintain adequate buffer zones between aircraft and personnel. The PIC shall maintain a buffer of at least 25 feet for VTOL aircraft between aircraft operations and all non-essential personnel. A designated individual can be identified as a safety officer to ensure the safety of the launch and recovery area.
12. Environmental Assessment – No launches shall occur until all environmental assessments have been considered. The PIC has the final authority to abort any launch based upon hazards to the environment, themselves, or other personnel in the area.
13. The PIC shall select a launch site that ensures UAS departures are not over populated areas.
14. Landing site and Alternate landing sites
15. Primary Landing site:
16. Typically the primary landing shall be the same as the launch site. The PIC has final authority for any approaches to the primary site and may wave off any approach deemed unsafe.
17. Alternate landing sites:
18. The PIC shall designate at least one alternate landing site. In the event that the primary landing site is deemed unsafe, procedures to utilize the secondary site will be invoked.

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1. Mission Abort sites:
2. The PIC may optionally designate an “abort site” whereby the aircraft may be “dumped” in an emergency situation. The abort site shall be so far removed as to provide absolute minimal risk should the UAS be required to vacate airspace in an emergency. Should the PIC deem it necessary, the UAS may be flown to this site and inserted without regard to the safety of the UAS or flight equipment.
3. Post Flight Procedures
4. A post-flight check of the UAS shall be completed according to the manufacturer recommendations.
5. The PIC shall be responsible for completing the log book following each flight.
6. The UAS batteries should be charged.
7. The UAS should be inspected to include the propellers, motors, fuselage, and all moving parts to ensure they are free from any defects.
8. Emergency Procedures
9. Emergency procedures in the manufacturer’s operations manual shall be followed for all UAS operations.
10. Loss of UAS Flight Control (Lost Link) – The UAS lost link procedures shall be set for 15 seconds to the rally point response which shall automatically cause the UAS to climb to its ceiling altitude and return to and land at the launch site. If positive control of the UAS cannot be maintained and the UAS is leaving the operational area or the UAS poses a risk to life and/or property, the PIC will attempt an engine kill command.
11. Loss of Visual Contact – If visual contact with the UAS is lost, the PIC shall command the aircraft into a hover mode and the observer shall try to re-establish visual contact. If visual contact cannot be re-established within a reasonable amount of time (determined by the PIC) then lost link procedures may be executed, unless the PIC has verified the telemetry data is believed to be accurate.
12. Loss of GPS signal – Should the UAS lose GPS signal during operations, the PIC must immediately command the UAS into manual mode and land as soon as practical. If positive control of the UAS cannot be maintained and the UAS is leaving the operational area or the UAS poses a risk to life and/or property, the PIC will issue an engine kill command. In addition, a member from the flight team shall contact the closest ATC and advise them of the situation with the direction of the flight, altitude, battery remaining, and speed.
13. Loss of UAS power (engine failure) – In the case of failure or crash, the UAS team members will immediately attempt to locate the UAS, assess the scene for injuries, and render first aid as necessary. A crash report including proper notification must be completed as soon as possible.
14. Mission Readiness – In order to ensure mission readiness, the following conditions shall be adhered to:
15. The UAS and related components shall be stored together.
16. Batteries shall be cycles through a charger a minimum of once a month.
17. Incidents and Accidents
18. During an incident/accident, efforts will be focused on: minimizing risk to life, care for the injured, and protection of property.

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1. Accident Notification and Investigation – The RPIC must report to the FAA within 10 days of any operation that results in serious injury, loss of consciousness, or property damage of at least $500 (not including the UAS).
2. Any damage to the UAS or its support system shall be reported immediately to a supervisor. The UAS or its equipment will not be operated if un-airworthy.
3. Privacy – UAS operations shall not infringe upon the rights and liberties of individuals.
4. Audio recording is not permitted without consent from parties involved.
5. Any recording obtained during flight operations other than training mission shall be considered WPSD property and must be stored and maintained for at least 90 days. If the mission becomes part of a call for service and is needed for evidence it shall be kept in the same time frame according to the statute of limitations. At that point, the video and/or photos will be submitted in the same style as evidence is normally submitted with a case.

UPON ENACTMENT, THIS DIRECTIVE WILL RESCIND AND SUPERSEDE ANY AND ALL PREVIOUS DIRECTIVES PERTAINING TO THIS SUBJECT.

APPROVED KHALIL EL-HALABI

PUBLIC SAFETY DIRECTOR

Effective:

Revised: