##### UNMANNED AERIAL SYSTEM

##### Standard Operating Procedures

The following procedures are intended to promote the safe, efficient, and lawful operation of Vincennes Township Fire District’s Unmanned Aircraft System (UAS).

**Definitions:**

**Pilot in Command**: The PIC is the sole person responsible for the safety and operation of the UAS during a mission or training.

Pilot in Command responsibilities

* + - * + Have an understanding of, and comply with, FAA regulations applicable to the airspace where the UAS will operate
        + Have an understanding of, and comply with, the manufacture’s user manual
        + Maintain proficiency on each of the airframes in the UAS program

**Visual Observer**: The VO is crucial in ensuring the UAS operates in a safe manner.

Visual Observer responsibilities

* + - * + The ability to effectively communicate with the PIC, the IC, and manned aircraft (if applicable) via radio or face-to-face (whichever is most appropriate)
        + Have an understanding of, and comply with, regulations concerning right of way rules, operating near other aircraft, careless operation, etc.
* Knowledge of, and ability to use, UAS support equipment (camera, charging station, etc.)

##### Safety Awareness

In regards to safety, all pilots and visual observers are responsible for the following:

* Ensure all flight personnel understand applicable regulatory requirements, standards, and organizational safety policies and procedures
* Observe and control safety systems by monitoring all operations
* Review standards and practices of departmental personnel as they impact operational safety
* Communicate all reported safety related problems and the corrective action(s) taken. If there were any in-flight problems, lessons learned, and the proper procedures for handling the problem should be shared and discussed

**Training**

**Pilot Training**

A member is authorized to conduct flight operations as the PIC when the following criteria has been met

* Completed VO training and UAS Training
* Training hours on each airframe

##### VO Training

Following the completion of the required training approved by the Fire Department, authorized personnel may serve in the role of Visual Observer.

##### Recurrent Training

All members shall maintain proficiency in their pilot/VO abilities.

**Operations**

* A minimum of one pilot and one observer are required for all flights.
* No pilot may act as a PIC for more than 10 hours in any 24-hour period.
* Requests for deployment can be made at any time during the day or night.
* Requests for deployment will be prioritized in a manner that has life safety as the main objective.
* The pilot is ultimately responsible for the UAS operation and their authority is absolute.

No member of Vincennes Township Fire District (or other entity), regardless of rank, may order a pilot to:

* Accept a mission
* Fly outside of FAA, COA, or manufacturer’s parameters
* Violate any rules or regulations that the PIC feels would put first responders, members of the public, or the flight team at a greater risk than is normally assumed with flight operation
* Should the pilot decline a mission, the pilot must make a written declaration outlining the reason(s) why the mission was not accepted and submit to the Fire Chief.

##### Pre-flight Checks

* Before launch, a thorough pre-flight inspection must be completed by the designated PIC and VO.
* The pre-flight checklist will be utilized to the fullest extent.
* A pre-flight checklist can be located in the back of this policy.

##### Weather

Before launch, a thorough check of the weather will be conducted and all members of the flight team will be made aware of the findings.

##### Post-flight Checks

* After landing, a thorough post-flight inspection must be completed by the designated PIC and VO.
* The post-flight checklist that will be utilized to the fullest extent.

##### Documentation

A flight log form will be completed following every mission or training exercise.

**UAV Preflight Check List**

* \_\_Check General Condition of UAV for Damage
* \_\_Check Props
* \_\_UAV Batteries Charged
* \_\_Insert UAV Battery
* \_\_Tablet Batteries Charged
* \_\_Insert and Connect Tablet
* \_\_Transmitter Batteries Charged
* \_\_Total Battery Reserve Time Noted
* \_\_Camera Selected and Installed
* \_\_Camera Settings Adjusted
* \_\_SD Card Inserted
* \_\_UAV On Level Ground Away from Metal
* \_\_Good Power Up
* \_\_Good Connectivity Between All Devices
* \_\_Latest Firmware Updated
* \_\_Controller / IMU Calibration
* \_\_Gimbal Test
* \_\_Picture Test
* \_\_Film / Video Test
* \_\_Controller Stick Test
* \_\_VO

**In-Flight Checks:**

* \_\_Update Home Point
* \_\_Take Off
* \_\_Hold Hover for 10 Seconds
* \_\_360 L / R
* \_\_Forward / Backward 10 Feet
* \_\_Up Down 10 Feet
* \_\_All Systems Go
* \_\_Cleared for Flight
* \_\_Reassess All Systems Every 3-5 Minutes

**Post Flight Checks:**

* \_\_Power Down UAV
* \_\_Power Down Transmitter
* \_\_Check UAV for Damage
* \_\_Check Photos or Videos
* \_\_Upload or Transfer Data
* \_\_Log Flight
* \_\_Charge UAV and Remote Batteries
* \_\_Store UAV for next Mission
* \_\_Complete Flight Log

**Go/No-Go Checklist**

1. **Aircraft**
   * Pre-Flight Checklist complete
2. **Mission parameters**
   * Qualified PIC at controls
   * All persons briefed and assignments known/discussed
   * Direct communication with IC and VO
   * Direct communication with local airspace controllers/aircraft (if needed)
3. **Weather**
   * Current and future weather conditions known/discussed
4. **Location**
   * Airspace restrictions known/discussed
   * NOTAMs and TFRs known/discussed
   * Primary and secondary landing/safety zones known

\*\*Flight operations may not commence until all items are checked and/or mitigated.