VISUAL LINE OF SIGHT STANDARD OPERATING PROCEDURE

GLOBAL AEROSPACE

SM4

MANUAL DISCLAIMER

This Visual Line of Sight Standard Operating Procedure Manual (the Manual) outlines general operating procedures for an Unmanned Aircraft System (UAS). It is not intended for use with any specific UAS, operation or industry.

This sample of an operating procedure manual was prepared by the Unmanned Safety Institute (USI), a professional training organization for UAS operators and proponents focused on improving safety in UAS operations through the adoption and modification of time honored aviation safety and training practices.

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The Manual should be reviewed by your organization for compliance with federal, state and local laws and regulations, as well as the operating manual provided by the manufacturer of the UAS you operate, and modified to suit your industry, the intended UAS operation and your company’s safety and business practices. The maintenance of safe premises, operation and equipment, and the avoidance of unsafe conditions and practices, as well as compliance with any and all laws and regulations are the sole legal responsibility of the policyholder.

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Abbreviations and Acronyms

AD – Airworthiness Directive

ATC – Air Traffic Control

CTAF – Common Traffic Advisory Frequent

FAA – Federal Aviation Administration

FTF – Functional Test Flight

GPS – Global Positioning System

LAA – Local Airport Advisory

LR – Launch and Recovery

MEL – Minimum Equipment List

METAR – Meteorological Aerodrome Report

MX – Maintenance

NM – Nautical Mile

NUAF – New UAS Acceptance Flight

OEM – Original Equipment Manufacturer

OIC – Operator in Command

PPE – Personal Protective Equipment

RC – Remote Control

RTL – Return to Launch

SMS – Safety Management System

TAF – Terminal Aerodrome Forecast

UAS – Unmanned Aircraft System

VO – Visual Observer

Definitions

Caution – an operating procedure, practice, or condition, etc. if not strictly observed, may cause damage to the aircraft.

Flight Cycles – an alternative measurement for small UAS flight experience (normally measured in flight hours). A flight cycle consists of system setup, launch, and operational flight in excess of 10 minutes, recovery and system stowing.

Flight Hours – a measurement of system usage or Operator experience considered the time from power on/engine start to power down/engine shutdown.

Nautical Mile – a unit of distance that is one minute of arc along the meridian or 1852 meters (6000 feet).

Note – an operating procedure, practice, or condition, etc., which is essential to emphasize.

Should – used to express expectations and guidance that is not mandatory but expected.

Unmanned Aircraft System – a device used or intended to be used for flight in the air that has no onboard pilot (operator) and its associated elements related to safe operations, which may include CSs (ground, ship, or air-based), control links, support equipment, payloads, and launch/recovery equipment.

Warning – an operating procedure, practice, or condition, etc., which may result in injury or death if not carefully observed or followed.

Will – used to express an imperative command that is mandatory.

1. General Operating Rules

All Unmanned Aircraft System (UAS) operations will be conducted in accordance with all applicable FAR, local and national laws, manufacturers' manuals/limitations and this Manual. Aircraft will be operated in an airworthy condition at all times. Safe use of UAS technology is the primary objective of the company. In excess of statutory flight rules, company UAS operators will only fly their UAS under the following conditions:

1. During the time defined as day and twilight (30 minutes prior to sunrise to 30 minutes after sunset)
2. Visual line of sight of the operator (able to determine direction of flight with the unaided eye)
3. Below 400 feet AGL (above the ground level)
4. Avoid direct over flight of people, vessels, or structures
5. Greater than 5 nautical miles (30,000 feet) from an airfield without coordination with Air Traffic Control (ATC) facility
6. No UAS crew may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

2. Privacy

UAS technology is considered controversial by some. It is therefore important to use UAS in an ethical and safe manner. The company has issued a detailed policy on privacy, however as UAS operators you are the company's representative and should be familiar with the details of the privacy policy and follow the following steps:

1. Take precautions not to film, image, or encroach on the personal space of individuals when there is a reasonable expectation of privacy.
2. For imaging operations on private land, obtain a written consent from the land owner and all persons present on the property.
3. For imaging operations on public lands, post signage indicating that aerial photography or imaging is taking place. When reasonable obtain written consent from all persons present.
4. In all cases discard and do not distribute, publish, or transfer images captured with a UAS that clearly show people that have not consented to having their likeness captured.
5. UAS raw data files (individual images) will be reviewed prior to processing and dissemination. Any files showing individuals will be destroyed. For aerial applications that record video the UAS crew will review the entire video and obtain written consent for any individuals clearly identified or destroy that portion of the video.
6. UAS crews will keep digital copies of consent forms with the raw data files.

3. Safety Culture

It is the goal of [company] to eliminate hazards and accidents through a process of continuous assessment, vigilance, and adaptation. By identifying and eliminating hazards the company can reduce or prevent injuries and damage to property and/or equipment.

[Company] dedicated safety staff will collect and disseminate important safety data to all crews and flight operations staff. The safety manager will use the Safety Management System (SMS) to create a safe work and flight environment. Safety is our number one priority and all UAS crews will undergo initial safety training prior to performing flight duties. As part of our safety culture we are committed to:

1. Identifying hazards
2. Reporting incidents and accidents
3. Learning from all incidents and accidents
4. Appropriately resourcing safety related activities
5. Improving the safety of our crews and equipment

4. Flight Administration

1. Professionalism

All company employees are to present themselves in a professional manner, reflecting the values of their company and the greater UAS community of aviators. Professionalism is embodied in both the way employees conduct operations as well as in the way they interact with customers and members of the public.

To this end:

1. Crews will dress in accordance with the company dress code or uniform.
2. Crew will report to the job site or staging area on time (see reporting time) ready to fly. Aircrew readiness is an important part of safety and individuals should be well rested (8 hours of uninterrupted sleep), free from the effects of medication or alcohol (at least eight hours), in a mental and emotional state required to perform their duties. All UAS crews will use the go/no go checklist to determine readiness for duty.
3. Crews will report to the launch site 15 minutes prior to the scheduled reporting time. Reporting times will be set with sufficient time for preflight preparation.
4. Crew duty time will be considered from crew show (for any work related activity or event) to equipment “tear down” and stowing. In no circumstance will this crew duty time be longer than 12 hours.

2. Organizational Structure

The [company] unmanned aviation department has established a chain of authority and accountability for day to day UAS flight operations.

Director of Flight Operations

The Director of Flight Operations is responsible for the training, staffing, scheduling, and supervision of the UAS crews. The Director of Flight Operations is responsible for the efficient operation of the UAS fleet. The UAS Operator in Command and crew will report directly to the Director of Flight Operations.

Safety Manager

The [company] has designated a Safety Manager who acts independently from the chain of authority. The Safety Manager is responsible for performing risk assessments for new areas or types of operations, collecting safety data, investigating accidents, as well as developing and administering safety training to UAS crews. In the event of a safety accident or incident the Safety Manager will oversee the emergency response and notify the director of flight operations of the status of response effort. UAS crews will not openly discuss any particulars of an accident or incident with anyone other than the Safety Manager, the FAA, or law enforcement/public safety officials.

3. Crew Complement

Each UAS, consisting of an air vehicle, a control station, and all associated equipment necessary for safe operation will have the minimum crew complement of one operator in command (OIC) and one visual observer; although some operations may require several observers, and supplemental crew members such as relief operators and payload specialists.

1. The OIC will be responsible for the safe execution of the operation and therefore is given authority to make go/no go, air vehicle recall decisions. Additionally, the OIC can implement risk mitigation strategies based on real time changes and on-site conditions. The OIC can release supplemental crew members from their duties or ground a UAS due to lack of airworthiness. The OIC is accountable to the company.
2. Visual observers are responsible for assisting the OIC in the set up and tear down of UAS equipment, reading checklists, providing safety oversight, and alerting the OIC of potential hazards to include but not limited to low flying aircraft.

4. Crew Qualification

All company UAS crews will be appropriately trained and qualified in the UAS they operate. Refer to the company training manual for guidance on initial qualification and recurrent training. In addition to training, UAS operators must be current and proficient for flight operations.

1. All UAS OICs will be both tested annually in the type of UAS being flown and must demonstrate proficiency in the safe manipulation of controls, programming of the autopilot (if able), and accurate execution of procedures.
2. No UAS OIC will operate a company UAS 'for hire' until they have completed 100 flight cycles in the UAS type at a training facility or appropriate test site (reference training manual).
3. All OICs need to document recent operational experience in UAS being operated or an FAA certified simulator; at a minimum, 3 Launch and Recoveries in the previous 90 days.
4. All UAS crew members will have demonstrated medical readiness to operate a UAS by being evaluated in the areas of vision, hearing, mental readiness, and a review of the operator's medical history.

5. Automation Policy

All UAS have automation to assist the crew in performing the operation. UAS operators should utilize autonomy to the maximum extent possible. Systems capable of autonomous take-off and landing should be operated in such mode (except for training and proficiency flights). The OIC will make it known what mode of control is being employed.

6. Aircraft Markings

UAS registered with the civil aviation authority should be clearly labeled with the registration number (N-Number in the US) in accordance with current regulation. For systems not registered, all core components of the UAS will be clearly labeled with the company (agency) name and a unique identification number.

In addition to unique identification, all UAS should be marked with high contrast markings, decals, paint, or lighting to maximize aircraft visibility.

Required Documentation

Airworthiness Statements

Each component of a UAS should have established airworthy requirements that cover minimum installed equipment, approved supplemental payloads, physical condition of the equipment as well as limitations and hazards associated with the equipment. If the UAS has received airworthiness certification from civil aviation authority or approved delegate, these certificates should be displayed within the control station or be accessible on site.

For UAS without certification, a statement of airworthiness should be posted and accessible on site. These statements should include:

1. All notes, cautions, and warnings associated with operation of the UAS;
2. All operating limitations, and
3. Configuration and installation details

Flight Manual and Checklists

UAS crews will carry a current copy of the UAS flight manual in traditional paper form or digital as part of an electronic flight bag. All UAS crews will operate the system in accordance with the operational limits stated in the flight manual. UAS crews will use checklists provided by the manufacturer or developed specifically for the type and configuration of UAS being used in operations.

The company checklist philosophy is to use a “call–do–respond” method in which OICs will be directed by a non-flying crew member (VO) on each step of the checklist. The OIC will complete the step (“do”) and then respond to the non-flying member that the checklist item is complete.

Flight and Maintenance Logs

It is the responsibility of maintenance personnel or the OIC (if maintenance is unavailable) to keep up to date maintenance logs, including recording the date, part, serial number, and condition.

The OIC will keep accurate flight logs detailing the number of flight hours, date, and location of every flight. The OIC will sign (digitally) that these times are truthful and accurate.

Flight and Operations Planning

Company crews will NOT fly any UAS without properly planning for each flight. For operations requiring several flights within the same day crews must plan for the operation and make conservative judgments based on changing conditions.

1. The OIC will gather weather data prior to flight (within 24 hours of operations) from traditional weather sources (METAR, TAFs) in the vicinity of the operational area.
2. The OIC will need to view the Federal Aviation Administration's Notices to Airman (NOTAM) to ensure the absence of flight activity that could interfere or pose a danger to UAS operations (and vice versa).
3. The OIC will need to identity all types of airspace within a 5 nautical mile radius from the UAS operational site. If the OIC identifies an airport within the 5 nautical mile radius they must contact the local air traffic control facility prior to flight.
4. The OIC will need to identify all non-standard aircraft and air vehicle operations within a five nautical mile radius of the UAS operational site. These non-standard operations include, but are not limited to: aerial advertisement, aerial spray, military training/low level areas, moored and free balloons, rockets, gliders and ultralight activity. If the OIC identifies this type of activity contact must be made with the operator to coordinate a segregation procedure.
5. In addition to abiding by all federal laws, UAS operators must check local and state laws pertaining to UAS use and comply as directed.

Site Preparation

UAS technology should not be used without conducting a site survey and in some cases preparing the site for operations. A physical site visit is required prior to flight. During the site visit the OIC or an appropriately trained coordinator (same level of qualification as the OIC) will at a minimum:

1. Check the property for obstructions and obstacles such as trees, towers, and buildings.
2. Determine the ability of the UAS crew to restrict public/spectator access to the area under the planned flight route.
3. Identify both primary and alternative launch and recovery sites on the property that will limit risks.
4. Identify industry hazards (firing, gas venting, radio or high voltage) recreational activities, and proximity of dwellings on adjacent properties.
5. Obtain permission from the land owner and the owner of adjacent properties to overfly.

Waypoint Controlled Operations

Independent of the level of automation provided by the system or ease of use, the OIC is responsible for planning and double checking computer calculated waypoint flight plans. OICs will select waypoints for semi-autonomous navigation that:

1. Account for forecasted or observed winds, maximizing turns into the prevailing wind and minimizing flight paths that will require crosswind control.
2. Guarantee minimum separation distances from persons, vessels, and structures.
3. Use sound energy management principles to ensure a UAS can return to the launch location with the required energy reserve.
4. Are placed at a sufficient distance from the launch and recovery site to allow for system specific climb out and let down profiles.
5. Are placed clear of the loss of control link salvo area (if applicable).
6. Meet the operational needs.

Stabilized (GPS Hold) Only Operations

For UAS using stabilized hold (Air Vehicle will maintain lateral and horizontal position aided by technology such as Global Positioning System), operators will need to plan for these type operations. At a minimum the OIC will:

1. Account for forecasted or observed winds, placing the system 150 feet downwind of structures, non-crew members and/or vehicles.
2. Guarantee minimum horizontal and vertical separation distances from persons, vehicles, and structures.
3. Use sound energy management principles to ensure a UAS can return to the launch location with the required energy reserve.
4. Predetermine altitude for engaging stabilized hold.
5. Have cleared the Return to Launch area (if applicable) in case of loss of control link.

Control (Data Link) Frequency

The integrity of the UAS' data link is essential to safe flight operations. OICs will consider the data link during the planning phase and:

1. Allocate frequencies that will not interfere or "crowd out" other vehicles (if applicable).
2. Conduct a sweep of the spectrum that includes the intended active frequency (if equipment available) and verify reliable link is established prior to aerial operations.

3. Plan for power settings appropriate for the type of operation, environment, and license.
4. Attempt to minimize data link interference.

In addition to planning for the safe and effective use of the data link, OICs will need to prepare for a loss of data link contingency:

1. Review loss of link procedures in the Flight Manual.
2. Select loss link flight profiles that DO NOT overfly people, structures, or vehicles.
3. Plan to clear the area under the Return to Launch (RTL) or System Salvo areas.

Launch and Recovery Planning

Launch Planning

The OIC will use performance data and guidance provided in the Flight Manual to select a launch direction and area that:

1. Is free of people, structures, vehicles, and obstacles.
2. Will ensure vertical clearance during the launch and ascent.
3. Accounts for winds and mechanical forces.

Recovery Planning

The OIC will use performance data and guidance provided in the Flight Manual to select a recovery direction and area that:

1. Is free of people, structures, vehicles, and obstacles.
2. Will ensure vertical clearance during the descent and transition to recover ascent.
3. Accounts for winds and mechanical forces.
4. Has enough room to “go around” and climb in the opposite direction (if applicable).

Preflight Decision Making

UAS personnel are expected to utilize sound, conservative judgment in their approach to their duties and avoid any undue risk. Hazardous attitudes, poor airmanship, routine lack of readiness, or any actions that violate the privacy and/or rights of individuals will be grounds for immediate dismissal.

The Safety Manager will use the Safety Risk Management (SRM) process outlined in the Safety Manual which includes; assessing risks, developing alternatives and mitigation strategies, and choosing appropriate course of actions. The OIC will use a similar strategy to make a go or no-go decision on the day of the flight by using the Operational Risk Management matrix (on the next page).

On the day of the flight, the OIC will gather data about the crew, aircraft, environment, and nature of the operation. OICs will:

1. Review each identified hazard by row and circle the scenario that most closely matches the current situation.
2. Use the worst case weather, crew condition, mission details, etc. to fill out the matrix.
3. Tally the number of circles for each column (green, yellow, red).
4. Five or more in the yellow moderate risk column will require a change of plans and notifying a supervisor (off site) for approval.
5. Any circled items in the far right should be considered a “no-go” situation and the operation should be cancelled.

Circle the description that closest resembles your situation, then follow instructions at the bottom of the page			
Factor	**Low Risk**	**Moderate Risk**	**High Risk**
People			
Illness	Clean bill of health, no signs of illness	Common cold, under the weather, allergies, coughing	Very sick, eyes watering, flu-like symptoms, loss of balance, feeling spacey
Alcohol, drugs, or medication use	No alcohol, prescription drugs in the past 12 hours, free from all effects	Feeling dizzy or have a headache, sluggish and/or tired	Feeling the effects of drugs or alcohol, visibly hung-over, have consumed alcohol or drugs in the past 12 hours
Outside physiological stressors	No outside pressure	Significant other is pregnant (less than 7 months), having problems with significant other, and/or work stress is high	Significant other is greater than 7 months pregnant, just had a fight with significant other or coworker, just received bad news
Proper rest	Eight hours of uninterrupted sleep, well rested and energetic	Less than seven hours of uninterrupted sleep, showing physical signs of fatigue like yawning	Little to no sleep, showing physical signs of exhaustion, nodding off or having trouble keeping eyes open
Currency and proficiency	Above 100 FC*. Flown in the last 30 days, familiar with operation type	Less than 100 FC*. Flown in the last 60 days but not in the last 30 days, training flight or low proficiency at operation type	Less than 25 FC* , or flying alone without a flight in the last 61-90 days, unfamiliar with operation
Operational			
Mode of communications	Use voice (if less than 100 meters) or dedicated intercom system for crew to crew, Use an aviation radio for crew to ATC or Aircraft	Use voice (if greater than 100 meters but less than 500 meters) or hand held radios system for crew to crew, Use an aviation radio for crew to ATC or Aircraft	Use voice (if over than 500 meters) or cell phones for crew to crew, No way of contacting ATC or conflict Aircraft
Planning Time	Complete site survey, and more than two hours of planning and preflight time	Complete site survey, and less than two hours of planning and preflight time	no site survey, and less than two hours of planning and preflight time
Scale and complexity	1 take off and recovery, single air vehicle	2-4 takeoff and recoveries per day, single air vehicle in proximity of other UAS with frequency management plan	5 or more takeoff and recoveries per day, Several air vehicles without a frequency and airspace management plan
Mission duration	Under 2 hours	2-6 hours	>6 hours
System automation	Fully autonomous (autopilot controls all aspects of flight)	Full manual (but operator is experienced in manual 200 FC* or remote control)	Full manual (inexperienced operator, less than 200 FC*) or switching modes of control
Ground operations	Improved surface and area has been cleared of foreign object debris and obstacles (100x aircraft width)	Unimproved surface but foreign object debris has been cleared (50x aircraft width), first time operation at site	Unable to control people's access to the launch are recovery site, site cleared only 10x aircraft width or less
Launch and Recovery	No additional launch or recovery equipment required	Systems requires a launcher, is hand tossed, or needs a recovery area	Launch and or recovery off of a structure or vehicle (needs contingency plan)
Navigation	Auto generated waypoints, overflight of land only, or launch and GPS hold only	Mixed method, overflight or property and/or water, transition <5 min	Manual waypoint entry, overflight of people or roads, transition >5 min
Mission delay complexity	Simple and familiar with operation	Complex operation but familiar, or not familiar but simple operation	Not familiar and complex
System			
Lost data link	Dedicated frequency outside of ISM band, data link security, no detected interference, and no observed lost link events during previous flights in the operating area	Shared frequency, ISM band, or self-selecting frequency, detect interference in data link band; or new to the operating area and unable to scan frequency	Have observed lost link events due to interference or unknown origin at the operation area
Maintenance and status	Aircraft is mission ready with no new critical components	Aircraft has critical components with less than two hours of flight time or within two hours of Time Between Overhaul (TBO), MTBF, or replacement	New aircraft checkout, new equipment checkout, or equipment is past a service interval and maintenance is required
Environment			
Terrain and obstacles	Flat terrain, clear of obstacles, towers, structures and or spectators	Moderate terrain or few buildings or towers that must be avoided, areas adjacent to the flight area have obstacles or property that could be a factor, may have onlookers, but contained to a specified area out of harm's way	High topography, several obstacles, antennas and/or structures; areas adjacent to the flight area have tall obstacles or property that pose a risk or need to be flown around, operation is planned in proximity of spectators
Launch elevation	Low elevation (sea level to 1000'). No noticeable loss of performance or difference in energy consumption	Medium elevation (1001' to 3999'), and/or suspect UAS performance may be degraded	High altitude (4000' and above), noticeable loss of UAS performance and/or high energy consumption
Ceiling and visibility	Visibility greater than five miles and clear skies, UAS has aircraft lighting and brightly colored panels visible at one mile	Visibility greater than one mile but less than 5 miles low clouds (1000'), UAS is visible at half of a mile	Visibility less one mile low clouds (below 500'), UAS does not have aircraft lighting or brightly colored panels that are visible at half of a mile
Winds	Winds are well within the manufacturer recommended limits, less than 10 knots for systems without published limits	Forecast wind near or out of manufacturer recommended limits, observed/measured winds at site are within limits but variable (wind gusts)	Actual winds greater than UAS manufacturer recommended limits, unable to set up equipment, requires full defection of controls on equipment test
Temperature	Able to keep crew and equipment between 51 and 79 degrees F, have environmental conditioning available or in-use	Less than 50 degrees or greater than 80 degrees F without environmental conditioning equipment	Less than 32 degrees or greater than 100 degrees F without environmental conditioning equipment
Airspace	Class G, below 400', greater than 10 miles from the closest airport. If in special use airspace - familiar with special instructions	Glass G, below 400', 5 to 10 miles from a public or private airfield, in the proximity of non-traditional aircraft activity (ultralights, balloons, aerial spray aircraft), first time in special use airspace	Class E (C or D), above 400', inside of 5 miles of an airfield, operating adjacent to special use airspace without notifying the controlling authority
*FC= Flight Cycles	If all or almost all items are in this column the risk score is low, proceed as planned	4 or more in this column represents an overall risk of moderate; you may need to change the plan; formulate a strategy to reduce the risk or accept and proceed with caution	Any in this column represents a high risk! You must change the plan! Do not proceed unless you have developed contingencies and risk mitigation plans to reduce or control the risk

Preflight and Ground Operations

After the “go decision” has been made the UAS crew will need to prepare the UAS and LR site for operations. This preflight and ground operations phase has several components outlined in the following paragraphs.

Observed Weather

The OIC will use field weather observation tools to determine the wind intensity and direction of origin. Crews should note that mechanical forces such as tree lines and the orientation of buildings can disrupt the airflow close to the ground and create mechanical wind that differs from the forecasted or observed winds and nearby airfields.

The OIC will scan the sky for cloud formations, precipitation, and/or other weather hazards and make a judgment call on any hazards present.

UAS crews will NOT fly in visible precipitation, with cloud ceilings less than 500 feet, or anytime lightning has been observed within 5 NM of the Launch and Recovery site. If thunder is heard, lightning is close enough to strike crew members.

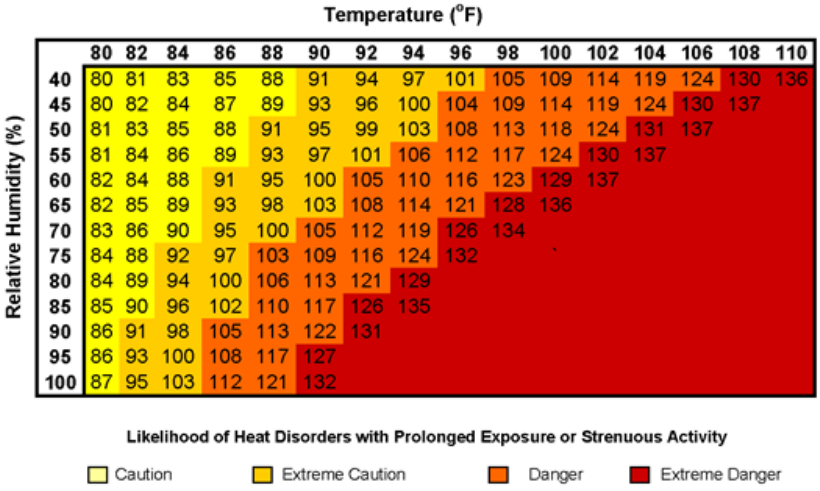
If during flight operations lightning is observed the crew will immediately abort the operation and seek shelter. NO PLACE outside is safe when thunderstorms are in the area. While sheltered, computers and other electrical equipment that put crew members in direct contact with electricity should be avoided. Safe shelter should be maintained until at least 30 minutes after the last sound of thunder is heard.

Exposure hazards

Environmental operating conditions can pose a hazard to the UAS and crew. DO NOT plan flight activities in conditions that are considered dangerous.

Hot Weather Operations

- Be cognizant of the heat index (see NOAA chart). DO NOT conduct flight activities in heat above 103 degrees F.
- Slow down. Reduce, eliminate or reschedule strenuous activities until the coolest time of the day.
- Wear a brimmed hat as well as lightweight, light-colored clothing to reflect heat and sunlight.
- Drink plenty of water, non-alcoholic and decaffeinated fluids. Drink water every 15 minutes, even if you are not thirsty.
- During excessive heat periods, spend more time in air-conditioned places. If air-conditioning is not available, rest in the shade to cool down.
- Don't get too much sun. Sunburn reduces your body's ability to dissipate heat.
- Keep an eye on fellow crew members.



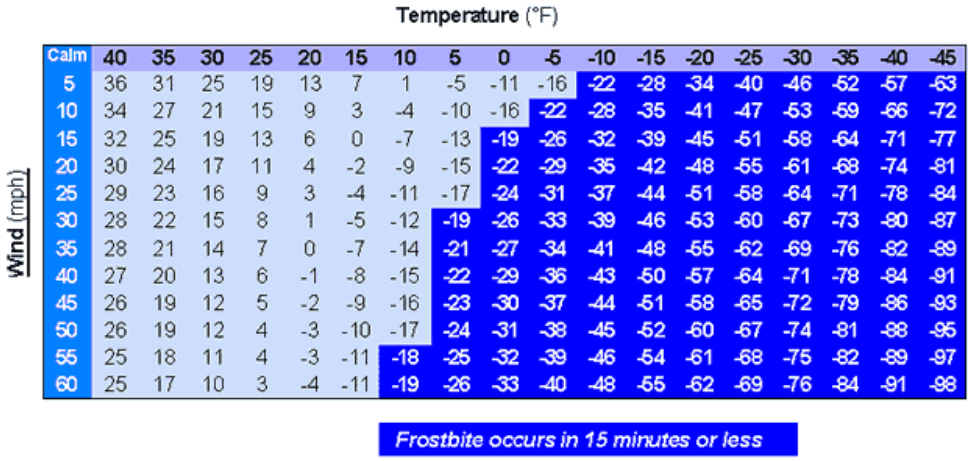
Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Cold Weather Operations

Prolonged exposure to freezing or cold temperatures may cause serious health problems such as trench foot, frostbite and hypothermia.

1. Immediately abort the operation and seek emergency help if you observe uncontrolled shivering, slurred speech, clumsy movements, fatigue and confused behavior in either yourself or crew members.
2. Wear clothing for cold, wet and windy conditions, including layers that can be adjusted to changing conditions.
3. Schedule flights during the warmest part of the day.
4. Take shelter to reduce exposure to wind.
5. Do not drink alcoholic or caffeinated beverages; drink warm beverages instead.
6. Be cognizant of the heat index (see NWS chart). DO NOT conduct flight activities in temperatures below 15 degrees F.

Note: Cold temperatures significantly decrease the useful life of batteries



Wind (mph)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite occurs in 15 minutes or less

Personal Protective Equipment

UAS crews will wear the appropriate Personal Protective Equipment (PPE) during selected phases of operation. During system setup, ground operations, and servicing, all crews within the safety zone will wear:

1. Company issued [safety vests] to clearly delineate operation essential from non-operation essential personnel.
2. Safety glasses to protect the eyes from moving objects, earth and soil, and/or hazardous materials.
3. Gloves while moving large equipment, staking guywires, setting up launch and recovery equipment.
4. Closed toe shoes or boots.

During launch and recover/ flight phase all crews operating within the safety zone will wear:

1. Company issued [safety vests] to clearly delineate operation essential from non-operation essential personnel.
2. Safety glasses to protect the eyes from moving objects, earth and soil, and/or hazardous materials.
3. Helmets or hard hats.
4. Closed toe shoes or boots.

System Setup

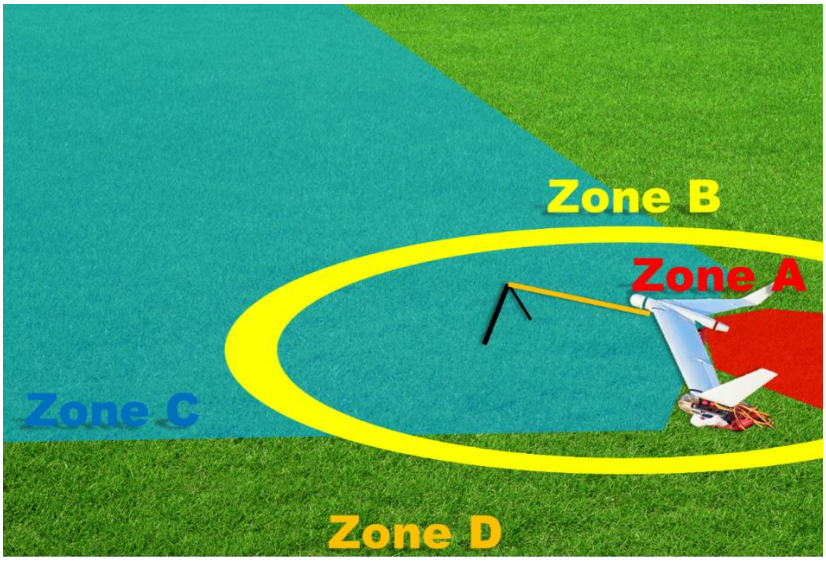
To ensure safety the UAS and all associated/support equipment will be set up in accordance with the flight manual. In the interest of safety, UAS crews should:

1. Wear Personal Protective Equipment.
2. Ensure all wires and cables are clearly marked and protected (if able).
3. System components are not “armed” during set up.
4. Visually inspect each component during set up.

Safety Zones

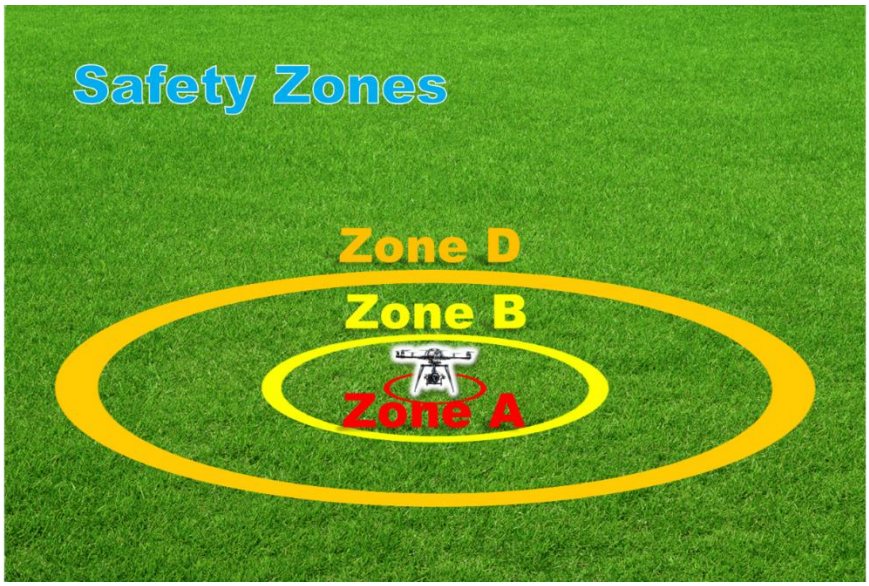
Safety zones are areas on the ground relative to the UAS that have associated hazards, i.e. an area around the rotor blades. Establishing safety zones will reduce the risk of injury to crew members and bystanders. Safety zones should be clearly marked with cones, placards, or paint.

For catapult and hand launch systems:



1. Zone A is the area directly around the control surfaces/mechanisms, propellers and moving parts of the launch and recovery system.
2. Zone B is the surface area under the launch and recovery area.
3. Zone C is the surface area under the departure and arrival sectors equal to twice the planned altitude.
4. Zone D is the surface area directly under the operation flight path plus a buffer equal to the planned altitude.

For vertical launch systems (rotor):



Zone A is the area directly around the rotor blades.

1. Zone B is the surface area under the launch and recovery area 10 times the rotor diameter.
2. Zone C Not used for rotorcraft.
3. Zone D is the surface area directly under the operation flight path plus a buffer equal to the planned altitude.

Final Preflight Inspection and Airworthiness Determination

The final responsibility for determining airworthiness of the UAS rests with the OIC. In addition to completing a pre-flight inspection, the OIC shall thoroughly review the UAS Maintenance Log. The OIC will combine information obtained during the preflight inspection with the maintenance history to determine whether the UAS is in an airworthy condition. These responsibilities include but are not limited to ensuring:

1. Compliance with all applicable Airworthiness Directives (AD) and mandatory service bulletins.
2. That the planned flight or series of flights will not exceed any maintenance requirements such as inspections, overhauls, or part changes.
3. That all maintenance discrepancies have been corrected or deferred in accordance with the MEL.
4. That the deferred items do not render the aircraft unsuitable for the planned flight or series of flights.
5. That all required equipment is installed and documents are accessible on site.

Crew Briefing

Crew briefings are an essential part of an effective team. The OIC will perform the crew briefing just prior to calling for the pre-flight checklist. OICs will cover the following information as part of their crew briefing:

1. Explain the operational intent or objectives of the flight.
2. Weather or hazards associated with the flight (to include risk score).
3. Assign crew duties and responsibilities for launch and recovery of the UAS.
4. Stress the importance of maintaining vigilance when scouting for hazards.
5. Explain what to do in the event of a loss of situation awareness.
6. Detail the max altitude for the operation.
7. Detail any additional “Call outs” desired from the crew.
8. Explain crew member’s roles and responsibilities in the event of an emergency.
9. Locate possible evacuation routes in case of a disaster and establish a rally point.
10. Reinforce the ability for anyone to call for an abort or to stop an operation because of an unsafe condition.

Pre-Flight System Check

The OIC will accomplish the pre-flight system check in accordance with the UAS’ Flight Manual. It is required that the OIC:

1. Check ground control software is up to date and in working order.
2. Conduct a spectrum sweep on the operating frequency to determine noise and/or interference.
3. Establish and ensure the data link is working.
4. Connect the power supply (if applicable) and note the time.
5. Ensure the system’s power supply is adequate.
6. Program any required fail safes, vertical boundaries, and/or altitude limits.

Establishing a Sterile Area

Prior to launching the UAS the OIC will establish a "sterile" area. This includes limiting communication to only that which is required for the safe execution of the planned operations. Ensure non-essential crew members are clear of the first safety zone. (Zone A), and non-crew members are free from the area of operation (zone D). The OIC will initiate the sterile area protocols by declaring loudly “Clear Prop" or "Clear Rotor” as applicable.

Air Traffic Radio Communications

If operating in the vicinity of an airfield (5 nautical miles or less) or communicating with traditional aircraft always use proper radio procedure as detailed in the Federal Aviation Regulation/ Airman Information Manual.

Launch, Climb out, and Transit

The OIC will arm the system and make a note of the time. The OIC will complete a visual scan of the system and surrounding area prior to initiating the launch. After the OIC and visual observer have completed the scan, the crew will launch the air vehicle in accordance with the Flight Manual. The UAS crew should use standard terminology (see table) during this critical phase of flight.

For catapult launch systems -

	Operator In Command	Visual Observer	Action
Normal Launch	“System armed”		The OIC will arm the UAS
	"Ready for launch"		After the OIC has ensured the launch area is secure
		"Ready"	The visual observer will verify the area is clear and relay the area is safe for launch
	"Launch in 3...2...1...Launch"		The OIC will then actuate the launch mechanism and follow launch checklist or flight manual protocols
Failure to Launch	"Standby Launch"		If the system fails to launch the crew will consider the system armed and hazardous. No crew member will approach the UAS until it has been disarmed, and the system is considered safe
Re iec	“Abort, abort, abort”	“Abort, abort, abort”	If any of the crew members see cause

			to delay or to stop the launch
	"Aborting"		The OIC (unless calling the initial abort) will acknowledge and respond
Climb Out	“Level, *50 feet*”		The OIC will ensure a steady rate of climb to the briefed altitude. Upon reaching the desired altitude the OIC will notify the crew the system is level and at what altitude
		"Clear of obstacles"	If the system is climbing over a set of obstacles the VO will state when clear
	"Copy, clear"		The OIC will acknowledge the VO’s message

For hand launch systems -

	Operator In Command	Visual Observer	Action
Normal Launch	“System armed”		The OIC will arm the UAS
	"Ready for launch"		After the OIC has ensured the launch area is secure
		"Ready"	The visual observer will verify the area is clear and relay the area is safe for launch
	"Launch in 3...2...1...Launch"		The OIC will then throw the aircraft and follow launch checklist or flight manual protocols

Failure to Launch	"Standby Launch"		If the system fails to launch the crew will consider the system armed and hazardous. No crew member will approach the UAS until it has been disarmed, and the system is considered safe
Rejected Launch	“Abort, abort, abort”	“Abort, abort, abort”	If any of the crew members see cause to delay or to stop the launch
	"Aborting"		The OIC (unless calling the initial abort) will acknowledge and respond. The OIC will hold the UAS so that the moving parts are facing away from his or her body
Climb Out	“Level, *50 feet*”		The OIC will ensure a steady rate of climb to the briefed altitude. Upon reaching the desired altitude the OIC will notify the crew the system is level and at what altitude
		"Clear of obstacles"	If the system is climbing over a set of obstacles the VO will state when clear
	"Copy, clear"		The OIC will acknowledge the VO’s message

For vertical launch systems (rotor)-

	Operator In Command	Visual Observer	Action
Normal Launch	“System armed”		The OIC will arm the UAS
	"Ready for launch"		After the OIC has ensured the launch area is secure
		"Ready"	The visual observer will verify the area is clear and relay the area is safe for launch
	"Launch in 3...2...1...Launch"		The OIC will then throw the aircraft and follow launch checklist or flight manual protocols
Failure to launch	"Standby Launch"		If the system fails to launch the crew will consider the system armed and hazardous. No crew member will approach the UAS until it has been disarmed, and is considered safe
Rejected Launch	“Abort, abort, abort”	“Abort, abort, abort”	If any of the crew members see cause to delay or to stop the launch
	"Aborting"		If any of the crew members see cause to delay or stop the launch s/he will reject the launch by calling out "abort" three times. The OIC (unless calling the initial abort) will acknowledge and

			respond with "aborting" and disarm the system
Climb Out	“Level, *50 feet*”		The OIC will ensure a steady rate of climb to the briefed altitude. Upon reaching the desired altitude the OIC will notify the crew the system is level and at what altitude
		"Clear of obstacles"	If the system is climbing over a set of obstacles the VO will state when clear
	"Copy, clear"		The OIC will acknowledge the VO’s message

Operational Delays

Operational Delays (for Systems Flying Waypoints)

For systems with high levels of autonomy, the OIC’s function will be one of systems monitoring rather than system control. This functional difference does not reduce the OIC’s responsibility or the fact that s/he is accountable for the safe execution of the operation. In order to reduce complacency and ensure errors are mitigated during this highly automated phase of flight UAS crews should:

1. Maintain vigilance by actively watching the system’s telemetry as the UAS proceeds from waypoint to waypoint.
2. Verify the system is flying the programmed or desired altitude, heading, and airspeed.
3. Pay close attention to turn points and verify the UAS turns in the correct direction.
4. Keep a watch out for obstacles and other air vehicles that may intersect with the UAS’ flight path.
5. Conduct routine operational checks for energy state and system’s health.

Operational Delays (for Systems Flying Direct Control)

When flying in direct remote control (RC) the OIC will be actively controlling the aircraft and will focus his or her attention on the air vehicle. In order to increase the situation awareness of the operator and reduce errors during this type of flying, the UAS crew should:

1. Utilize visual observers to keep a watch out for obstacles and other air vehicles that may intersect with the UAS' flight path.
2. Ensure no one is near or under the air vehicle during direct control operations.
3. Work as a crew to conduct routine operational checks for energy state and system's health.

Operational Delays in Areas with People, Structures, or Vehicles

UAS crews operating the air vehicle in the vicinity of people, structures, and/or vehicles should exercise extreme caution and mitigate risk by ensuring the air vehicle has minimum separation from all hazards.

Lateral separation (fixed wing):

1. During Launch and Recovery the UAS will be at least 1000 feet down wind of any hazard.
2. Launch and recovery will take place towards an area free of obstacles and hazards.
3. During flight the UAS will come no closer to a hazard than the altitude plus 500 feet on the downwind side (a UAS at 300 feet would get no closer than 800 feet).
4. During flight the UAS will come no closer to a hazard than 2,000 feet on the upwind side.

Lateral separation (rotor):

1. During Launch and Recovery the UAS will be at least 150 feet down wind of any hazard.
2. During flight the UAS will come no closer to a hazard than the altitude plus 50 feet on the downwind side (a UAS at 300 feet would get no closer than 350 feet).
3. During flight the UAS will come no closer to a hazard than 500 feet on the upwind side.

Vertical separation (fixed wing):

1. During climb outs or recoveries the OIC must ensure at least 50 feet of vertical clearance between the air vehicle and any hazard.
2. During operational delays and transitions the OIC must ensure at least 100 feet of vertical clearance between the air vehicle and any hazard.

Vertical separation (rotor):

1. The OIC must ensure at least 50 feet of vertical clearance between the air vehicle and any hazard.

Operational Delays Near Airport

When operating approximately 10 NM in the vicinity of an uncontrolled airport, the OIC should ask ATC if there is any conflicting traffic and monitor the ATC frequency for traffic alerts. If unable to make contact with ATC on an aviation radio, Operators shall broadcast in the blind, their UAS position and intentions on the Common Traffic Advisory Frequency (CTAF) or Local Airport Advisory (LAA).

When operating approximately 5 NM in the vicinity of a controlled airport, the OIC will contact the local ATC facility and inform them of their position and operating parameters to include;

1. Size of UAS
2. Working altitude
3. Position in reference to the airfield
4. Mode of communication

In the event of an air traffic conflict, attempt to make contact with the traffic on tower frequency using an aviation radio.

Minimum Energy/Fuel Reserve

OICs will ensure that no UAS will fail to complete the assigned operational task due to insufficient fuel/energy. To help OICs, the company has established the following minimum fuel energy requirements:

1. RTL with [20%] percentage of energy
2. Plan to land with [10%] percentage of energy

Descent and Recovery

The descent and recovery phase can be the most difficult and hazardous for the UAS and crew. The OIC should notify the crew as to:

1. Any changes or unidentified hazards affecting the recovery.
2. Mode of control during the descent and recovery.
3. Verbalizing beginning of descent.

Autonomous Recovery

The OIC will complete a visual scan of the system and surrounding area prior to initiating the autonomous recovery. UAS crew must maintain vigilance during the autonomous recovery and be ready to manually takeover at any point. It is also important that the UAS crew use standard terminology during the recovery phase (see table).

For vertical recovery and deep stall systems -

	Operator In Command	Visual Observer	Action
Normal Recovery	“Initiating auto-land”		The OIC will turn on the autonomous landing feature
	"Touchdown"		After the system has contacted the ground and will not “bounce” back into the air
Go Around	"Going Around"	"Go Around"	If any crew member sees a reason to abort the landing sequence. The OIC will manually takeover and initiate a climb away from the ground. Once at a safe altitude the UAS crew will discuss the “go around” call and attempt another recovery

For captured recovery systems -

	Operator In Command	Visual Observer	Action
Normal Recovery	“Initiating auto-land”		The OIC will turn on the autonomous landing feature
	"Captured"		After the system has been captured by the net, line, or other UAS capturing

			device
Go Around	"Going Around"	"Go Around"	If any crew member sees a reason to abort the landing sequence. The OIC will manually takeover and initiate a climb away from the ground. Once at a safe altitude the UAS crew will discuss the "go around" call and attempt another recovery

For parachute recovery systems -

	Operator In Command	Visual Observer	Action
Normal Recovery	"In position"	"In position"	When the UAS is in position over the recovery zone the crew member in position to observe the location will call out
	"Popping chute in 3…2..1"		The OIC will initiate the parachute landing feature over the designated recovery area
		"Good chute"	After the system has been captured by the net, line, or other UAS capturing device

Go Around	"Going Around"	"Go Around"	If any crew member sees a reason to abort the landing sequence, the OIC will manually takeover and initiate a climb away from the ground. Once at a safe altitude the UAS crew will discuss the “go around” call and attempt another recovery

Manual Recovery

Many UAS require a manual recovery, where the OIC directly controls the air vehicle until the system is in a configuration and position to be considered recovered. During a manual recovery, the OIC should take into account the following:

1. Control the rate of descent
2. Maintain crew vigilance during approach
3. Plan to go around on every approach
4. Account for winds and crosswind
5. NEVER catch a UAS as a method of recovery!

The UAS crew should use standard terminology during the manual recovery.

For vertical recovery and deep stall systems -

	Operator In Command	Visual Observer	Action
Normal Recovery	“Initiating landing sequence”		The OIC will start the approach to landing
	"Touchdown"		After the system has contacted the ground and will not “bounce” back into the air

Go Around	"Going Around"	"Go Around"	If any crew member sees a reason to abort the landing sequence, the OIC will manually takeover and initiate a climb away from the ground. Once at a safe altitude the UAS crew will discuss the “go around” call and attempt another recovery

Post Flight

Engine Shutdown Checks

The OIC will complete the engine or system shutdown in accordance with the Flight Manual. It is important for maintenance and record keeping to note the time of the system shutdown.

The UAS crew will only approach the air vehicle after the blades or moving parts have stopped and the OIC has taken his or her hands off the controls. The UAS crew should use standard terminology to denote the system is safe (see table).

	Operator In Command	Visual Observer	Action
Shutdown	“Shutting Down”		The OIC will turn off the engine(s) or motor(s)
	“Disarmed”		The OIC will disarm the system
	“Clear, safe to approach”	“Clear”	The OIC will take his or her hands off the control

Post Recovery Procedures

After the air vehicle is safely on the ground and engines/motors are stopped, the OIC will conduct a post flight inspection of the air vehicle noting any discrepancies or wear. If this is the final flight of the day the UAS Crew will:

1. Tear down all support equipment, antennas, control station equipment, etc.
2. Save the data log in a file folder identifiable by the date.
3. Retrieve all payload data or imagery (comply with privacy procedure).
4. Complete the flight time logs [or fill out the field notes sheet and complete the online log when able].
5. Complete any maintenance logs (as required) [or fill out the field notes sheet and complete the online log when able].
6. Follow all safety procedures outlined in the Flight Manual [or supplemental information] for securing UAS components.

Quick Turnaround

For quick turnaround flight (flights in which the air vehicle will be refueled or battery swapped and immediately re-launched) UAS crews should:

1. Reevaluate the conditions based on changes to weather, operating environment, presence of spectators, etc.
2. Comply with all parts of this manual governing ground, flight, and LR operations.
3. Comply with all checklists detailed in the flight manual.
4. Record all servicing actions or minor repairs to the systems.
5. Make a fresh judgment as to the airworthiness of the UAS and crew.

Debrief

OICs should conduct post-flight debriefings after each flight in order to continuously evaluate and improve flight operations, procedures and enhance interpersonal skills. These debriefings should include all crew members of the flight and cover at a minimum:

1. Operational objectives and the crew's ability to meet the objectives.
2. Construct a time line of events.
3. Any incidents, near misses, or violations.
    a. Collect documentation of any accidents, incidents, near miss events or violations of Federal Aviation Regulations and collection of necessary witness statements.
4. Any breakdowns in communication.
5. Review of procedures that are insufficient for the operation.

Emergency or Abnormal Operations

In the event of an emergency situation arising from a system's malfunction, the UAS crew will comply with the appropriate emergency or abnormal procedures prescribed in the Flight Manual.

For emergencies not covered in the flight manual, UAS crews will comply with the Emergency Response Plan.

After any emergency or incident and complying with company guidance the OIC will notify the Safety Manager (within 24 hours) and file a formal report.

Flight Termination

Flight termination is the intentional scuttling of an air vehicle because it posed a real and present hazard to the environment, people, structures, or vehicles. Flight termination can be accomplished by an intentional controlled flight into terrain where less damage will occur, a programmed feature that puts the air vehicle into an unusual attitude or stall to make it crash directly below the current flight path, a landing directly below current flight path, or a return to launch.

Inadvertent flight termination that leads to destruction of the vehicle or property should be reported to the Safety Manager (within 24 hours).

Normal flight termination that leads to destruction of the vehicle or property should be reported to the Safety Manager (within 24 hours).

UAS Maintenance

Crew Responsibilities

Proper maintenance of the UAS and all associated components rests with the maintenance crew. The maintenance crew is responsible for airworthiness of aircraft and equipment maintenance of UAS. As such, the Crew Chief shall maintain a logbook for each aircraft and another logbook for associated UAS equipment. Open discrepancies must be signed off by maintenance prior to aircraft being flown. If maintenance staff is not applicable, the OIC will be responsible for all maintenance tasks. The OIC will be responsible to determine if an aircraft meets the MEL and shall have final say in operational capacity of aircraft as indicated by thorough risk assessment and FAA regulations. Unairworthy components may be flown if aircraft is not in violation of the MEL. The OIC of each flight will be responsible for reporting all maintenance discrepancies or concerns to the maintenance crew for inspection.

Training:

The purpose of maintenance training is to improve the proficiency of equipment operators and mechanics. Recurring annual training must be conducted to refresh safety oriented culture and train best practices for specific applications. Enhancing maintenance practices and procedures encourages UAS longevity and reliability.

Record Keeping:

Logbook table and example of proper logbook entry.

Date	Aircraft Make/Model	Registr. Number	Engine Make/Model	Component	Maintenance Activity	Maintenance Time	
						Engine	Airframe
08/12/16	SenseFly Ebee	N123E	K240 KVA	Payload	**Discrepancy:** Payload bay P# 654321 damaged on landing, New panel cover required.	23.5	60.2
08/13/16					**Action:** Payload bay panel P# 123456 replaced IAW Ebee Tech Manual 1A. Aircraft is airworthy and ready for flight. Signed: *John Doe* A&P		

Recurring Maintenance:

Recurring maintenance shall be completed according to manufacturer recommended practices. Recurring maintenance is critical to the longevity of component and aircraft attachment life, tracking reliability of components, and identifying components reaching the end of their operational life cycle. Reporting and logbook entries are critical to maintain a positive, proactive maintenance culture.

Preventative Maintenance:

A daily UAS maintenance schedule shall be based on “Schedule A” located in Appendix 1. Daily aircraft maintenance is aircraft specific.

Interval Maintenance:

Additional UAS maintenance shall be conducted at specified intervals as outlined in “Schedule B” of Appendix 2. Interval maintenance is aircraft specific and component dependent.

Operational Maintenance:

UAS maintenance based upon operational use and application requirements shall be outlined in “Schedule C” of Appendix 3.

UAS Sensor/Component Maintenance:

All attachment modules and foreign component maintenance of UAS shall be outlined in “Schedule D” of Appendix 4.

UAS Auxiliary Equipment:

All other equipment contained in the UAS shall be maintained IAW “Schedule E” of Appendix 5.

Conditional Maintenance:

Unscheduled maintenance repairs and overhauls shall be completed according to manufacturer recommended procedures. Unairworthy aircraft or aircraft components must be tagged as “UNAIRWORTHY” or “DO NOT FLY”.

Maintenance Management:

UAS maintenance management procedures shall be outlined in in Appendix 6.

UAS Functional Test Flights

A Functional Test Flight (FTF) is an operational “check out” of an entire system after the system has undergone maintenance of a primary component. A FTF should be conducted over a designated test area and NOT on customer property or in the vicinity of people, structures, or vehicles. These FTFs are considered high risk activities and should be conducted by a FTF qualified crew (See training manual for requirements) and completed in accordance with the Functional Test Flight Checklist.

New UAS Acceptance Flights

A New UAS Acceptance Flight (NUAF) is for newly acquired UAS from an Original Equipment Manufacturer (OEM). A NUAF is to ensure the newly acquired UAS works as designed and procedures designed for that system are suitable for the operational environment. A NUAF should be conducted over a designated test area and NOT on customer property or in the vicinity of people, structures, or vehicles. These NUAFs are considered high risk activities and should be conducted by a NUAF qualified crew (See training manual for requirements) and completed in accordance with the New UAS Acceptance Checklist.

Deviations from this Manual

Flight crews are not authorized to deviate from company procedures unless the deviation is in the best interest of safety. All such deviations shall be reported to the Safety Manager within 24 hours of the occurrence using the self-reporting website. Additional safety reports shall be made for accidents, incidents, near miss events, and violations of Federal Aviation Regulations.

A safety report is confidential and is therefore not a confession of guilt and will not be used against the UAS crew in any investigation. Safety reports are used to help improve the overall safety of the organization and our procedures.