MISSION SAFETY CHECKLIST

BEFORE SETTING OUT

Weather Forecast

1. Review weather brief
2. Evaluate current weather conditions
3. Evaluate the impact of current/forecast temperatures on aircraft performance
4. Evaluate the impact of current/forecast wind speed and direction on flight execution
5. Evaluate the impact of current/forecast weather conditions on image file capture
6. Confirm sUAS weather minimums met
7. Determine if max flight altitude is impacted by cloud levels

Location Assessment

1. Define flight area boundaries
2. Review airspace/verify airspace authorization
3. Confirm there are no TFRs for the flight area
4. Make arrangements with homeowner/agent/neighbors as required
5. Verify required documentation on hand
   1. Remote pilot certificate/photo ID
   2. Authorizations/waivers (as required)
   3. sUAS registration
   4. Required local licenses/permits/documentation
   5. Contract/email confirming approved operation

Aircraft Inspection

1. Verify registration markings displayed
2. Perform visual inspection of airframe
   1. Movable control surfaces
   2. Servo motors
   3. Propellers are smooth and free of damage/defect (check blade, surface, & hub).
   4. Antennas
   5. Batteries fully charged and free of damage
   6. Camera/gimbal/other payloads
3. Inspect condition of ground control unit
4. Inspect condition of visual display device
5. Inspect condition of connector cable
6. Assemble airframe components (landing gear, airframe arms, motors, propellers/rotors)
7. Mount propeller guards (as required)
8. Mount camera/gimbal assemblies (as required)
9. Mount camera lens/filter (as required)
10. Insert SD card
11. Check battery levels
12. Insert batteries
13. Connect visual display device
14. Power on ground control unit
15. Power on aircraft
16. Preview camera Settings
17. Ensure First Aid Kit is stocked and readily accessible

ON-SITE ARRIVAL

Walk-Thru

1. Identify natural obstacles/hazards in the area
2. Identify man-made structures/hazards in the area
3. Identify overhead wires/power lines in the area
4. Identify any object to be removed from the shot such as real estate signs, garbage cans, vehicles, garden hoses, etc.
5. Identify any non-participants in the area
6. Notify any bystanders or nearby property owner of your intentions.
7. Assess likelihood of GPS signal disruption
8. Assess sources of interference and limits on data link range
9. Identify suitable emergency landing sites
10. Adapt flight route to avoid identified hazards (as required)

Crew Briefing

1. Discuss mission specifics and flight protocols
2. Weather brief to include potential aircraft/flight path impacts
3. Discuss site layout, boundaries, obstacles, etc.
4. Assign crew member locations/responsibilities
   1. Before takeoff
   2. During flight
   3. During other phases
   4. In case of emergency
   5. After landing
5. Review communication equipment/procedures
6. Discuss planned emergency responses
   1. Lost GPS
   2. Lost datalink (partial and full)
   3. Loss of positive or autonomous control
   4. Battery (low/malfunction/error/fire)
   5. In-flight system failure
   6. Collision
   7. Conflicting air traffic (birds, aircraft)
7. Discuss emergency landing locations
8. Evaluate crew’s fitness (IM SAFE)

System Setup

1. Confirm system status normal
2. Perform compass calibration (as required)
3. Verify adequate GPS signal (min 9 satellites)
4. Confirm home point established
5. Verify command and control signal is at 100%
6. Verify video transmission signal is at100%
7. Configure critical system settings
   1. RTH altitude
   2. Max altitude/distance
   3. Failsafe lost datalink response
8. Confirm battery level

Start Up/Takeoff

1. Ensure takeoff location is clear (laterally and vertically)
2. Position visual observers (as required)
3. Verify settings and status
   1. System status
   2. Flight mode
   3. Signal strength (GPS, command and control, video)
   4. Home point location
   5. Critical/failsafe settings
   6. Image capture settings
4. Verbally announce “Clear props,” ensure all personnel clear of takeoff area
5. Execute takeoff (manual or autonomous)
6. Climb to 6-10’
7. Perform control check
8. Verify signal strength (GPS, command and control, video)

Data Capture

1. Ensure there are no people or vehicles in the shot frame
2. Maneuver aircraft to first target position
3. Confirm camera settings
4. Configure semi-autonomous mode parameters (as required)
5. Adjust gimbal for proper image framing
6. Confirm flight path is clear
7. Initiate desired flight maneuver
8. Capture photo/video footage

Landing

1. Ensure landing spot is clear
2. Maneuver aircraft directly above landing zone
3. Rotate sUA to face directly away from PIC
4. Descend (left stick)
5. Maneuver for precision landing (right stick)
6. 6-12” above landing zone, pull the left stick down
7. Maintain full downward deflection of the left stick until the sUA lands/motors turn off

Shutdown

1. Review a few images to estimate quality and quantity are met
2. Turn off aircraft power
3. Inspect airframe
4. Replace batteries/payloads (as required)
5. Shutdown ground controller/flight display
6. Remove/replace SD card
7. Remove camera/gimbal assembly
8. Breakdown aircraft
9. Remove flight display/store ground control station
10. Collect all items from flight area

Debrief

1. Assemble flight crew
2. Confirm capture of required data, determine if further
3. flights are needed
4. Review flight (takeoff to landing)
5. Invite individual reports from crew
6. Conclude debrief

Data/Image Upload

1. Transfer captured imagery to computer/storage drive/server
2. Review files for quality and proper format
3. Upload imagery for editing (as required)
4. Prepare final deliverables