

Drone Maintenance Checklist

Pre-Flight Checklist

☐ **Airframe Inspection**

- ☐ Check for visible damage on frame and arms
- ☐ Verify all screws and connections are tight
- ☐ Ensure landing gear is secure and undamaged

☐ **Propeller Check**

- ☐ Inspect for cracks, chips, or deformation
- ☐ Verify props are clean and correctly installed
- ☐ Confirm props rotate freely without obstruction

☐ **Battery Check**

- ☐ Verify battery charge level (>80% recommended)
- ☐ Inspect for swelling, damage, or leakage
- ☐ Check battery temperature is normal
- ☐ Confirm secure connection to drone

☐ **Control Systems**

- ☐ Perform control surface movement test
- ☐ Check response to control inputs
- ☐ Verify all motors spin correctly
- ☐ Test return-to-home function

☐ **Camera/Payload**

- ☐ Check gimbal movement and calibration
- ☐ Verify camera lens is clean and undamaged
- ☐ Test camera feed and recording function
- ☐ Ensure payload is properly secured

☐ **Environmental Assessment**

- ☐ Check weather conditions (wind, precipitation)
- ☐ Verify flight area clearance and permissions
- ☐ Assess for RF interference sources
- ☐ Review NOTAMS and airspace restrictions

Daily Maintenance (After Each Use)

☐ **Post-Flight Inspection**

- ☐ Check for new damage or loose components
- ☐ Clean dust and debris from body and sensors

- ☐ Download and backup flight logs and data
- ☐ **Battery Management**
- ☐ Allow batteries to cool before charging
- ☐ Store at 50-60% charge if not using immediately
- ☐ Record battery cycles and performance
- ☐ Check battery balance levels
- ☐ **Control Systems**
- ☐ Calibrate compass if needed
- ☐ Update flight controller firmware if available
- ☐ Check telemetry data for anomalies

Weekly Maintenance

- ☐ **Detailed Hardware Inspection**
- ☐ Remove propellers and check motors
- ☐ Inspect wiring harnesses for wear or damage
- ☐ Check frame for stress fractures or fatigue
- ☐ Verify all screws and fasteners are tight
- ☐ Inspect motor bearings for smooth operation
- ☐ **Software Updates**
- ☐ Check for firmware updates
- ☐ Update mapping and navigation data
- ☐ Backup current configuration
- ☐ **Sensor Calibration**
- ☐ Recalibrate accelerometer
- ☐ Perform IMU calibration
- ☐ Check barometer accuracy
- ☐ Calibrate compass in different orientations
- ☐ **Battery Analysis**
- ☐ Perform battery cell voltage test
- ☐ Check for declining performance trends
- ☐ Verify charging system functionality

Monthly Maintenance

- ☐ **Comprehensive Inspection**
- ☐ Disassemble for internal inspection where possible
- ☐ Check internal electronics for corrosion or damage
- ☐ Inspect cooling systems and heat sinks

- ☐ Test all failsafe mechanisms
- ☐ **Performance Benchmarking**
- ☐ Measure hover stability and power consumption
- ☐ Record flight time with standard payload
- ☐ Test maximum range within safe parameters
- ☐ Validate GPS accuracy and hold capability
- ☐ **Documentation Update**
- ☐ Update maintenance logs
- ☐ Record any parts replaced
- ☐ Document flight hours on current components
- ☐ Update inventory of spare parts needed

Troubleshooting Flowchart

mermaid

flowchart TD

A[Drone Issue Detected] --> B{Power-related?}

B -->|Yes| C[Check Battery]

B -->|No| D{Control-related?}

C --> C1{Battery Issue?}

C1 -->|Yes| C2[Replace Battery]

C1 -->|No| C3[Check Power Distribution]

C3 --> C4{Distribution Problem?}

C4 -->|Yes| C5[Repair/Replace Board]

C4 -->|No| D

D -->|Yes| E[Check Receiver]

D -->|No| F{Motor-related?}

E --> E1{Receiver Issue?}

E1 -->|Yes| E2[Replace/Repair Receiver]

E1 -->|No| E3[Check Flight Controller]

E3 --> E4{Controller Issue?}

E4 -->|Yes| E5[Update Firmware/Replace]

E4 -->|No| F

F -->|Yes| G[Check Motor Response]

F -->|No| H{Structural?}

G --> G1{Motor Problem?}

G1 -->|Yes| G2[Replace Motor]

G1 -->|No| G3[Check ESC]

G3 --> G4{ESC Problem?}

G4 -->|Yes| G5[Replace ESC]

G4 -->|No| H

H -->|Yes| I[Inspect Frame]

H -->|No| J[Check Firmware/Software]

I --> I1{Frame Damage?}

I1 -->|Yes| I2[Repair/Replace Frame Parts]

I1 -->|No| J

J --> J1{Software Issue?}

J1 -->|Yes| J2[Reset/Update Firmware]

J1 -->|No| K[Contact Technical Support]

Maintenance Schedule Tracking

Component	Inspection Frequency	Last Inspected	Next Due	Notes
Propellers	Pre-flight			
Motors	Weekly			
Battery	Every use			
Frame	Weekly			
ESCs	Monthly			
Flight Controller	Monthly			
Camera/Gimbal	Pre-flight			
Wiring	Weekly			
Firmware	Monthly			