

CHAPTER 6
MAINTENANCE AND INSPECTION
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CHAPTER 6

MAINTENANCE AND INSPECTION

1. OBJECTIVES. A maintenance and inspection program shall be established, prior to the operation of any departmental Small Unmanned Aircraft Systems (sUAS), to ensure a continuous high standard of sUAS maintenance, performance, and uniformity of operations. The sUAS are entire systems including the aircraft, control station, communication links, and all other components necessary for safe and efficient operations.

2. GENERAL.

a. Standard of Maintenance. All departmental sUAS shall be maintained in a condition for safe operation in accordance with applicable Federal Aviation Administration, manufacturer, and departmental requirements. All maintenance is the responsibility of the command operating the sUAS.

b. Approval. Approval for all maintenance is the responsibility of the respective commander or designee. Commanders or designees may consult with Division sUAS coordinators or the Office of Air Operations (OAO) regarding maintenance, at their discretion.

c. Coordination. Coordination of maintenance is the responsibility of the command. All services and purchases related to sUAS maintenance shall follow existing departmental policies related to service contracts and purchasing. This includes, but is not limited to:

- (1) Procurement of parts.
- (2) Major repairs.
- (3) Warranty claims.
- (4) Software updates.
- (5) Contact with technical representatives.
- (6) Contracts.
- (7) X-Numbers.
- (8) Procurement card (P-Card) purchases.

3. OPERATIONS AND MAINTENANCE MANUALS.

a. Publications. The following publications shall be used for guidance regarding maintenance of sUAS:

(1) The sUAS manufacturer's aircraft, control station, and maintenance manuals.

4. RESPONSIBILITY. All personnel involved in operating sUAS shall be familiar with the manuals listed above. Questions concerning sUAS or controller maintenance may be directed to the sUAS Division coordinator or OAO as necessary.

5. INSPECTIONS.

a. Systems Inspections.

(1) Prior to Flight. The remote pilot in command (RPIC) is required to perform checks as required by the sUAS manufacturer's preflight checklist to determine if the sUAS is in a condition for safe operation.

(2) Manufacturer Inspection Program. If the sUAS manufacturer supplies an inspection checklist for the sUAS and/or controller, it shall be used.

(3) Daily. At a minimum, commands shall ensure daily inspections are completed on the following to ensure sUAS are available for missions:

(a) Batteries. Inspect for signs of damage and to ensure full charge.

1 Battery compartment.

(b) Landing gear. Inspect for signs of damage.

(c) Special Mission Equipment. Inspect for cleanliness, damage, and operability (including payloads such as cameras or other sensors).

(d) Ground Control Station. Inspect for damage, check operation of control sticks, clean display, ensure antennas are connected, and ensure full charge.

(e) Software. Ensure software is up to date on all components including aircraft and ground control station. If possible, the device used to update the software should have antimalware/antivirus tools installed.

(f) Recording Media. Inspect for damage and ensure enough memory is available.

6. MAINTENANCE.

a. General. All repairs or maintenance shall be performed by properly trained personnel.

b. Departmental Personnel. Departmental personnel may perform minor maintenance as allowed by the sUAS manufacturer. More technical repairs such as wiring, camera repairs, replacing displays, etc., should only be performed by the manufacturer or those authorized by the manufacturer. Personnel may perform maintenance such as:

(1) Propellor replacement.

(2) Software/firmware updates.

(3) Cleaning of motors, vibration dampers, etc.

(4) Fastener tightening (per the manufacturer's recommendations).

(5) Compass, accelerometer, and gimbal calibration.

c. Coordination. Maintenance and inspections should be coordinated to ensure availability for missions.

d. Contract Maintenance. Commands may establish maintenance contracts if necessary. The contractor must comply with all applicable portions of this policy, and the command must assign an RPIC to oversee the maintenance.

e. Parts Replacement. Manufacturers normally recommend replacement of parts based on time in service or number of flights. Commands should follow the manufacturer's guidance regarding the replacement of propellers, landing pads, batteries, motors, and other components.

7. MAINTENANCE TRACKING.

a. Recordkeeping. Commands shall document any repair, modification, overhaul, or replacement of a system component. Commands should also record the time in service or number of flights for major components, and track when those major components require maintenance. This may assist commands in determining a replacement cycle for certain life-limited parts such as motors, propellers, landing gear, etc.

(1) Maintenance shall be documented in the OAO approved sUAS flight management software. In the absence of any sUAS flight management software, maintenance shall be documented following the procedures outlined in Chapter 7, Mission and Flight Reporting, of this manual. Each log entry shall, at a minimum, include the date the maintenance was performed, a description of the maintenance performed, and the name and ID number of the person performing the maintenance.

b. Retention. Maintenance records shall be retained for the life of the sUAS and must be easily retrievable by electronic or hard copy.

c. Maintenance Discrepancies. Commands shall include a procedure for reporting maintenance issues, taking an sUAS out of service, tracking repairs, and providing feedback to reporting persons in their Standard Operating Procedures. This is to ensure maintenance information and sUAS status is relayed to all concerned personnel.

d. Review. Logbooks shall be reviewed by the RPIC prior to returning the sUAS to service to ensure all required maintenance has been completed. Supervisors should routinely review logbooks to ensure records are being kept up to date.

e. Availability. Logbooks located on the approved sUAS flight management software shall be readily available for inspection by the RPIC, sUAS Division Coordinator, or other departmental representatives.