



Standard Operating Procedure (SOP):

Equipment and Vehicle Maintenance

Effective Date: January 1, 2020

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Reviewed By: Corporate Office – Greenville, SC

1. PURPOSE

This SOP outlines procedures to ensure all survey equipment and company vehicles are regularly maintained, calibrated, and operating at peak performance to support H&M Surveying's mission of delivering accurate and reliable surveying services.

2. SCOPE

This SOP applies to all field equipment and vehicles used across H&M Surveying offices, including robotic total stations, GPS units, UAVs, and company-owned trucks.

3. RESPONSIBILITIES

- **PLS in Charge (Per Office):**
 - Ensures implementation of maintenance and calibration schedule.
 - Oversees crew compliance and coordinates service needs.
 - Approves any repairs and submits supporting documentation to corporate.
- **Field Crew Chiefs:**
 - Conduct weekly equipment inspections.
 - Report equipment or vehicle issues to the office PLS immediately.
 - Track mileage and service due dates.
- **Corporate Admin (Greenville HQ):**
 - Maintains centralized logs of all calibration and maintenance records.
 - Coordinates vendor contracts for service and calibration.
 - Ensures documentation is audit-ready and archived for at least 2 years.



4. EQUIPMENT MAINTENANCE & CALIBRATION

Inspection Schedule

- **Weekly:** All survey crews must visually inspect equipment for wear, battery condition, and functionality and perform columniation.
- **Quarterly:** Functionality check by the Crew Chief and documented on the Equipment Inspection Log.
- **Semi-Annually (Every 6 Months):**
 - **Calibration of:**
 - Total stations and robotic instruments
 - GNSS/GPS receivers
 - UAVs (IMUs and sensors)
 - Digital levels
 - Calibration performed by certified technicians or vendor-approved service centers.

Documentation

- All calibrations must be logged using the **UAV/Equipment Maintenance Log** with date, equipment ID, performed by, and certificate of calibration.
- Labels should be applied to each device showing calibration date and next due date.

5. VEHICLE MAINTENANCE

Oil Change and Service Schedule

- **Oil changes every 5,000 miles** or 6 months, whichever comes first.
- **Weekly vehicle checks** must include:
 - Tire pressure
 - Fluid levels
 - Lights and signals
 - Inspection for body damage

Quarterly Maintenance Tasks:

- Rotate tires
- Brake inspection
- Clean and inventory truck beds/toolboxes
- Check calibration of any equipment stored in vehicle (e.g., rover poles, tribrachs)



Tracking

- Use the **Vehicle Maintenance Log** to track:
 - Mileage
 - Service dates
 - Oil changes
 - Tire rotations
 - Repairs

Field crews are responsible for recording odometer readings each Monday and Friday in the vehicle logbook. Office PLS will review logs monthly and submit to Corporate.

6. FRIDAY MAINTENANCE WINDOW

Every **Friday afternoon** is reserved for:

- Equipment cleaning
- Instrument checks and calibration validation
- Truck maintenance and organization
- Inventory checks (batteries, accessories, cables, etc.)

7. REPAIRS & SERVICE REQUESTS

- Any needed repairs must be submitted via the **Maintenance Request Form** to the Office PLS.
- Emergency repairs (e.g., vehicle breakdown, total station failure) must be reported immediately via phone, followed by email documentation.
- Corporate must be notified of:
 - Major equipment repairs exceeding \$500
 - Vehicle accidents or insurance claims

8. COMPLIANCE & AUDITS

- Calibration and maintenance logs are subject to internal audits by Corporate.
- Missing documentation or overdue service/calibration may result in temporary suspension of field operations.
- Records are stored in ShareFile and backed up quarterly.