OPERATOR MAINTENANCE

OPERATOR PMCS, INCLUDING LUBRICATION INSTRUCTIONS

INITIAL SETUP:

References

WP 0006
WP 0009
WP 0011
WP 0025
WP 0036
WP 0042
WP 0136, Table 1, Item 1

Equipment Condition

Generator set shut down, cool, and properly grounded (WP 0005)
Battery cables disconnected (WP 0026)
Cable disconnected from NATO Slave Receptacle (WP 0066)

Drawings Required

Generator Set Electrical Schematic (FO-1)

Table 1. Operator Preventive Maintenance Checks and Services (PMCS).

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			WARNING High voltage is produced when generator set is in operation. Never attempt to start the generator set unless it is properly grounded. Do not ground yourself in standing water. Never attempt to connect or disconnect load cables while the generator set is running. Failure to comply may cause injury or death to personnel. **WARNING** Never service or perform maintenance on generator set while engine is running. Always shut down generator set before servicing. Allow engine to cool before handling components. Failure to observe this warning could result in severe personal injury or death. **WARNING** Check to ensure that all parts of the starter wiring including the wires, and the connection point are completely coated with a layer of adhesive - NSN: 8040-00-117-8510 (WP 0136). Failure to comply may cause damage to the generator set and/or injury to soldiers. **NOTE** Recharge battery at 90 days and ensure battery is fully charged prior to electrical starting. See WP 0025 for battery recharging procedures.	
1	Before	Overall generator set	a. Inspect for cracks, dents, and corrosion in accordance with WP 0011, Main Access Cover. b. Inspect for loose or missing hardware.	Significant cracks in any generator set component.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS). – Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Before	Generator set main access cover	a. Inspect main access cover for security of attachment in accordance with WP 0011, Main Access Cover. b. Inspect air intake and exhaust ducts for obstructions and blockages. Clear obstructions and check for damage. c. Check all main access cover gaskets to ensure they fit properly (snugly but not too tightly) and are not torn.	Main access cover is not secure. Latches do not lock, allowing main access cover to rattle excessively. Intake or exhaust is blocked or damaged.
3	Before	Control box and output panel	a. Inspect for secure attachment. Check that hinged panel is closed and locked. b. Inspect switches, meters, indicators, and terminals. Conduct fault lamp test by depressing FAULT RESET/PUSH TEST switch. See WP 0011, Control Box and Output Panel Assemblies. c. Inspect electrical wires for damage, corrosion, or electrical short. Check for bent, broken, or missing pins.	Any switch is not operable or any meter is damaged. Fault indicator is defective or lamp does not light. Wires or connectors are damaged.
4	Before	Convenience receptacle (60 Hz only)	Inspect convenience receptacle for damage. Check for signs of electrical short or corrosion.	Receptacle damaged, shorted, or corroded.
5	Before	NATO Slave Receptacle	Inspect NATO slave receptacle for damage. Check for signs of electrical short or corrosion.	Receptacle damaged, shorted, or corroded.
6	Before	Output panel	a. Inspect output panel door for security. Check locking latch operates properly. b. Check load and ground terminals for security of attachment. Inspect for signs of electrical short or corrosion. c. Check ground rod cable for proper installation. Check for correct connection.	Terminals are loose, damaged, disconnected, shorted, or corroded. Set is not grounded properly.
7	Before	Exhaust system	a. Inspect exhaust system for cracks, holes, or dents. Ensure secure attachment. b. Inspect muffler for damage.	Exhaust system is damaged to the extent it will affect operation or safety of personnel.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS). – Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
8	Before	Fuel fill ports	a. Inspect fill neck strainer for damage. Remove obstructions or blockage. b. Inspect vented fuel cap and auxiliary fuel connection for damage or leakage. Check that caps are securely attached.	Strainer is damaged. Fuel cap is damaged to the point where fuel leakage is likely.
9	Before	Fuel tank and hoses	Inspect generator set and engine fuel system components for damage or leaks, in accordance with WP 0011, Fuel System.	Fuel leaks of any kind are present. Fuel line is cut or damaged.
10	Before	Fuel filter/water separator	Inspect and drain filter/separator in accordance with WP 0011, Fuel Filter/ Water Separator.	Water and fuel are mixed. Separator is damaged or leaking.
11	Before	Skid base	a. Inspect oil and fuel drain ports for damage. Ensure drain plugs are securely attached. b. Inspect lifting handles and tiedown rings for damage. Check to see they are securely attached. c. Inspect engine vibration mounts for cracks, wear, or deterioration.	Drain ports are damaged to the extent they will leak. Lifting handles do not operate or are loose. Vibration mounts are damaged or worn.
12	Before	Battery	a. Open main access cover. Inspect battery cables for corrosion, evidence of electrical short, and damage. Check for cuts, tears, or exposed wires. b. Inspect battery terminals and battery posts for corrosion and damage. Check for security of attachment and that battery terminal quick release feature is functional. c. Inspect battery for cracks, corrosion, or evidence of leakage.	If a battery does not provide power to the electrical starter motor, the generator is still mission-capable. See WP 0006, Manual Starting for manual starting.
13	Before	Frequency Converter (A8)	Open main access cover. Inspect Frequency Converter (A8) and area around it for signs of water. If water is present, thoroughly dry out Frequency Converter (A8) before starting generator.	Water is in Frequency Converter (A8).

Table 1. Operator Preventive Maintenance Checks and Services (PMCS). – Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
14	Before	Engine oil	a. Open main access cover. Remove oil fill cap and inspect oil level. If servicing is required, refer to field level maintenance. b. Inspect areas around oil filter and oil drain hose for leaks, damage, and loose or missing parts. c. Inspect for contamination.	Class III oil leaks, damage, or loose or missing parts are present. See leakage class definitions (WP 0009, Leakage Definitions for Operator PMCS). Oil shows signs of contamination.
15	Before	Engine air filter	Inspect air filter for clogs (see WP 0011, Air Filter).	Filter is clogged.
16	Before	Engine alternator compartment	Inspect electrical wires for damage, corrosion, or electrical short. Check for bent, broken, or missing terminals.	Damaged wires, or broken or missing terminals.
17	During	VOLTAGE and LOAD meters (control panel)	Monitor output levels during generator set operation. Adjust output, as required, using VOLTAGE ADJUST potentiometer. See WP 0036 and WP 0042.	Adjustments cannot be made.
18	During	FUEL LEVEL Meter (located on control panel)	a. Monitor fuel level while generator is running. b. Replenish fuel as follows: Shut down generator set. Remove fuel fill cap and fill with diesel fuel. Replace fuel fill cap.	Fuel level is empty or level meter is inoperable.
19	During (After 8 hours of constant use)	Engine oil	a. Shut down generator set. Open main access cover. b. Remove engine oil fill cap and check oil level. Service, as required, in accordance with WP 0011.	Oil level is at or below minimum oil level mark on dipstick.
20	During (After 8 hours of constant use)	Fuel filter/water separator	a. Shut down generator set. Open main access cover. b. If water is present, drain water from fuel filter/water separator by turning valve.	Water and fuel are mixed. Separator is damaged or leaking.
21	After	Fuel lines	Open main access cover. Inspect all fuel lines for cuts, tears, loose connections, or evidence of leakage.	Fuel leaks of any kind are present. Lines are cut, torn, loose, or damaged.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS). – Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
22	After	Overall generator set	a. Inspect for cracks, dents, and corrosion, in accordance with WP 0011, Main Access Cover. b. Inspect for loose hardware.	Cracks allow water to enter Frequency Converter (A8) or dents adversely affect operation of generator set.
23	After	Data plates	Check for legibility.	N/A
24	After	Engine	a. Inspect engine fuel piping for damage, kinks, or evidence of leakage. b. Inspect hoses for evidence of wear, cracking, or deterioration. Check connections for tightness.	Fuel leaks of any kind are present. Pipes or hose are damaged.

MANDATORY REPLACEMENT PARTS

There are no replacement parts required for these PMCS procedures.

LUBRICATION INSTRUCTIONS

In dusty and dry environments, change oil and air filter ahead of schedule to reduce generator set problems.

1. These lubrication instructions are for operator level personnel. Lube intervals (on-condition or hard time) are based on normal operation. Lube more during constant use and less during inactive periods. Use correct grade of lubricant for seasonal temperature expected.

2. Always wipe clean all oil filler components before starting your lube service. Use correct type or grade of oil. Overfilling will cause spillage and harm engine components.

3. For equipment under manufacturer's warranty, hard-time oil service intervals must be followed. Intervals must be shortened if lubricants are known to be contaminated or if operation is under adverse conditions (such as longer-than-usual operating hours, extended idling periods, or extreme dust).

4. Remove engine oil fill cap (Figure 1, Item 1) from engine block (Figure 1, Item 2). Remove O-ring (Figure 1, Item 3).

5. Inspect oil fill cap (Figure 1, Item 1) for obvious damage. Check to see oil level gauge (Figure 1, Item 4) is securely attached to cap. Inspect for corrosion.

6. Inspect O-ring (Figure 1, Item 3) for cuts, tears, or permanent set. Replace O-ring if it does not properly seal.

7. Using a clean rag, inspect area around oil fill port for evidence of leakage. Clean area of dirt and accumulated grime.

8. Apply a light coat of lubricating oil to O-ring (Figure 1, Item 3) and install into oil fill port.

9. Insert engine oil fill cap (Figure 1, Item 1) into engine block (Figure 1, Item 2), but do not screw in.