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U-08D03  
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**STUDENT HANDOUT**

**MEPS GENERATOR COMPONENTS**

1. **Terminal Learning Objective:**

(a) Provided a generator set, mechanic's tool box, and the reference, operate the generator set, so that it will apply voltage to appropriate equipment per the reference. (1141.2.2)

(b) Provided a schematic, a faulty generator set electrical system, and applicable tools and test equipment, with the aid of references, repair the generator set electrical system so that it functions properly in accordance with the appropriate equipment technical manual. (1142.01.03)

2. **Enabling Learning Objectives:**

(a) Provided a list of generator components and a selection of component functions, without the aid of reference, identify the correct function for each component, in accordance with the applicable Technical Manual. (1141.02.02c) (1142.01.03af)

(b) Provided a generator set with numbered components and a list of component names, select the number that represents each component, so that each component is correctly identified. (1141.02.02d) (1142.01.03ag)

**BODY**

1. **FUNCTION OF EACH COMPONENT:**

a. The control cubicle contains the various controls and instruments that provide the operator with sufficient information to insure proper operation of the generator set.

b. The DC circuit breaker protects control circuits energized by the batteries and has a 7.5 amp rating.

c. The ground stud is used to provide a path for current to flow in case of a short circuit.

d. The overspeed switch monitors the engine speed. If the engine goes into overspeed the generator will shut down. Press the reset button.

e. The day tank assembly provides fuel control by using a float switch for fuel shut down.

f. The load terminal board contains four load studs for connecting the power cables. Use the load stud wrench for making adjustments.

g. The convenience receptacles are normal, outdoor and duplex receptacles.

h. The voltage reconnection board consists of a stationary terminal board and a movable link type board. This provides a means of connecting the two coils of each phase in series or parallel to provide 120/208 or 240/416 volts.

i. The battery charging alternator produces 24 volt DC current and recharges the batteries during generator operation. The alternator contains a 40 amp fuse. The fuse must be serviceable for the alternator to work.

j. The current transformers monitor the magnetic field around the output wires for the load percent power meter.

k. The special relay box contains the remainder of the protective devices and the voltage regulator paralleling controls.

l. The fuel tank drains are a means of draining water and dirt build up from the bottom of the fuel tank.

m. The two fuel filters are long metal canisters with paper and cloth filtering elements inside. They are used to clean dirt and deposits from the fuel.

n. The fuel strainer is a short metal canister with a metal type disk filter. It is used to help purify the fuel system.

o. The ether bottle attachment is a solenoid plunger operated unit that provides one shot of ether to the intake manifold for cold weather starting.

p. The fuel selector valve has four positions to provide fuel access: set tank, aux and two off positions.

q. The dipstick is used to check the oil level of the generator set.

r. The oil filter is used to clean dirt and particles from the oil system.

s. The starter is a 24 volt DC cranking motor for starting the engine.

t. The voltage regulator continually maintains the output voltage from the main generator.

u. The roosamaster fuel pump meters, pressurizes and delivers fuel to the injectors.

v. The tactical relay box contains the relays to shut down the generator set upon activation of the overvoltage, short circuit, overload and reverse power protective devices.

w. The main generator is the second major part of the generator and produces AC power.

x. The oil pressure sending unit senses the oil pressure in the engine and transmits it to the low oil pressure cut out.

y. The shutter lever allows manual control of the rear shutters that cover the radiator.

z. The fuel transfer pumps are two 24 volt pumps that pump fuel into the day tank.

aa. The air cleaner filters filter the air going into the intake manifold.

## 2. LOCATION OF COMPONENTS:

a. The control cubicle is located on the front of the generator set behind the double panel doors.

b. The DC circuit breaker is located inside the control cubicle in the lower right hand corner.

c. The ground stud is located on the bottom left of the generator set.

d. The overspeed switch is located on the left side rear section of the unit.

e. The day tank assembly is located in the rear section, on the right side of the unit.

f. The load terminal board is located on the bottom left side front section of the unit.

g. The convenience receptacles are located on the right side front section of the unit to the right of the control cubicle.

h. The voltage reconnection board is located on the left side front section of the unit to the rear of the load terminal board

i. The battery charging alternator is located on the left rear section of the unit.

j. The current transformers are located front left section of the unit.

k. The special relay box is located on the front section just behind the control cubical.

l. The fuel tank drain is a petcock located at the rear of the unit inside the battery box.

- m. The two fuel filters are located on the right rear section of the unit.
- n. The fuel strainer is located on the right rear section of the unit.
- o. The ether bottle is located on the left center section of the unit.
- p. The fuel selector valve is located on the right side on the center section.
- q. The dipstick is located on the left rear section of the engine.
- r. The oil filters are the 2 metal canister located on the right side of the unit behind the center section.
- s. The starter is located on the right side of the engine below the oil filters.
- t. The roosamaster fuel pump is a fuel injection pump located on the right rear section of the unit, below the day tank.
- u. The tactical relay box is located on the right front section of the unit, under the air filters.
- v. The main generator is located in the front half of the unit.
- w. The oil pressure sending unit is located on the right side of the unit, on top of the oil filters.
- x. The shutter lever is located below the radiator, on the right side.
- y. Fuel transfer pumps are located on the inside right of the engine compartment in the center section.
- z. The air cleaner filters are located on the right front section of the unit.
- aa. The Voltage Regulator is located on the front center section of the generator on the mid level.

**REFERENCES:** TM 00038G/07499A