TM 5-6115-269-10

DEPARTMENT OF THE ARMY TECHNICA

OPERATOR'S MANUAL

GENERATOR SET
GASOLINE ENGINE, 10 KW
AC, 120V, 1 AND 3 PHASE
120/240V, SINGLE PHASE
120/208V, 3 PHASE
60 CYCLE, SKID MOUNTED

(HOL–GAR MODEL CE 106AC/Wk9)
FSN 6115–778–6005

HEADQUARTERS, DEPARTMENT OF THE ARMY
APRIL 1961

SAFETY PRECAUTIONS

Before Operation

Do not operate the generator set in an enclosed building unless the exhaust gases are piped outside. Exhaust gases contain carbon monoxide, which is a poisonous, odorless, and colorless gas.

Do not operate the generator set until the ground terminal stud has been connected to a suitable ground. Electrical faults in the generator, load lines, or load equipment can cause death by electrocution from contact with an ungrounded system.

Provide a metal-to-metal contact between the container and the fuel tank when filling. This will prevent a spark from being generated as fuel flows over the metallic surfaces.

During Operation

Do not install or change the load cables while the generator set is operating. The voltage generated by this equipment can cause death by electrocution.

Do not fill the fuel tank while the engine is in operation. Gasoline spilled on a hot engine may explode and cause injury to personnel.

Do not make changeover board adjustments or output terminal connections while the generator is operating. Death by electrocution can result.

GPO 811–560–1

TECHNICAL MANUAL
No. 5-6115-269-10

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *17 April 1961*

Operator's Manual

GENERATOR SET, GASOLINE ENGINE: 10 KW, AC, 120V, 1 AND 3 PHASE, 120/240 V, SINGLE PHASE, 120/208 V, 3 PHASE, 60 CYCLE; SKID MOUNTED (HOL-GAR MODEL CE 106AC/WK9) FSN 6115-778-6005

Chapter 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for the use of the personnel to whom the Hol-Gar Generator Set, Model CE 106AC/WK9, is issued. They provide information on the operation, lubrication, and daily preventive maintenance services of the equipment, accessories, components, and attachments.

b. Appendix I contains a list of publications applicable to this manual. Appendix II lists the basic issue items authorized for use by the operator of this equipment. The maintenance allocation chart is contained in TM 5–6115–269–20.

c. The numbers placed in parentheses on the illustrations within this manual indicate quantity.

d. Report all deficiencies as specified in AR 700–38. Submit recommendations for changes, additions, or deletions to the Commanding General, U. S. Army Engineer Maintenance Center, Corps of Engineers, ATTN: EMCDM, P. O. Box 119, Columbus 16, Ohio. Direct communication is authorized.

2. Record and Report Forms

For record and report forms applicable to the first echelon of maintenance, refer to TM 5–505.

Section II. DESCRIPTION AND DATA

3. Description

a. General. The Hol-Gar Generator Set (figs. 1 and 2), Model CE 106AC/WK9, is a self-contained, skid-mounted, portable unit. It is powered by a 4-cylinder, water-cooled gasoline engine that is directly coupled to a 10-kw (kilowatt), ac (alternating current) generator (fig. 1).

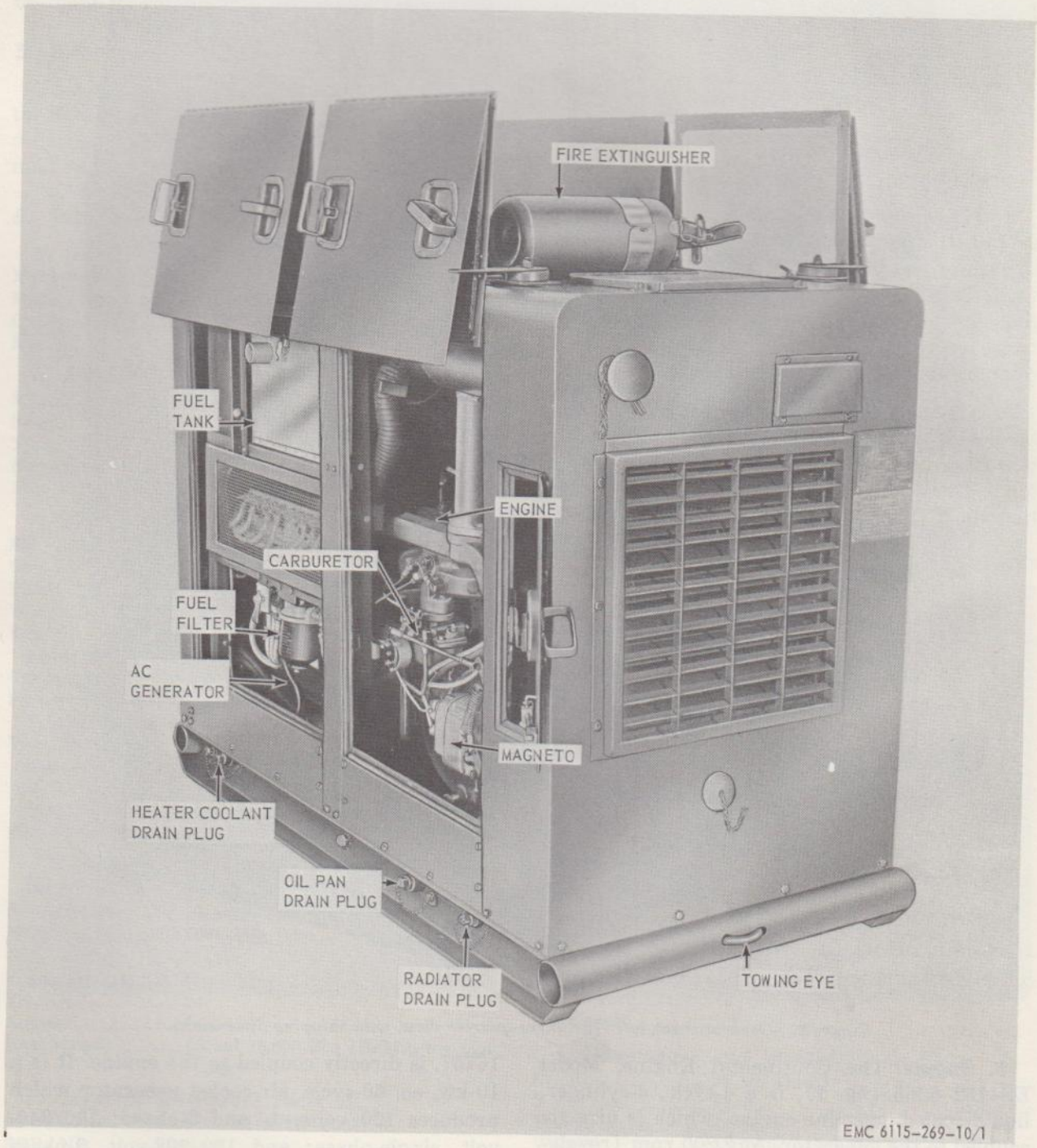


Figure 1. Generator set, right front, three-quarter view.

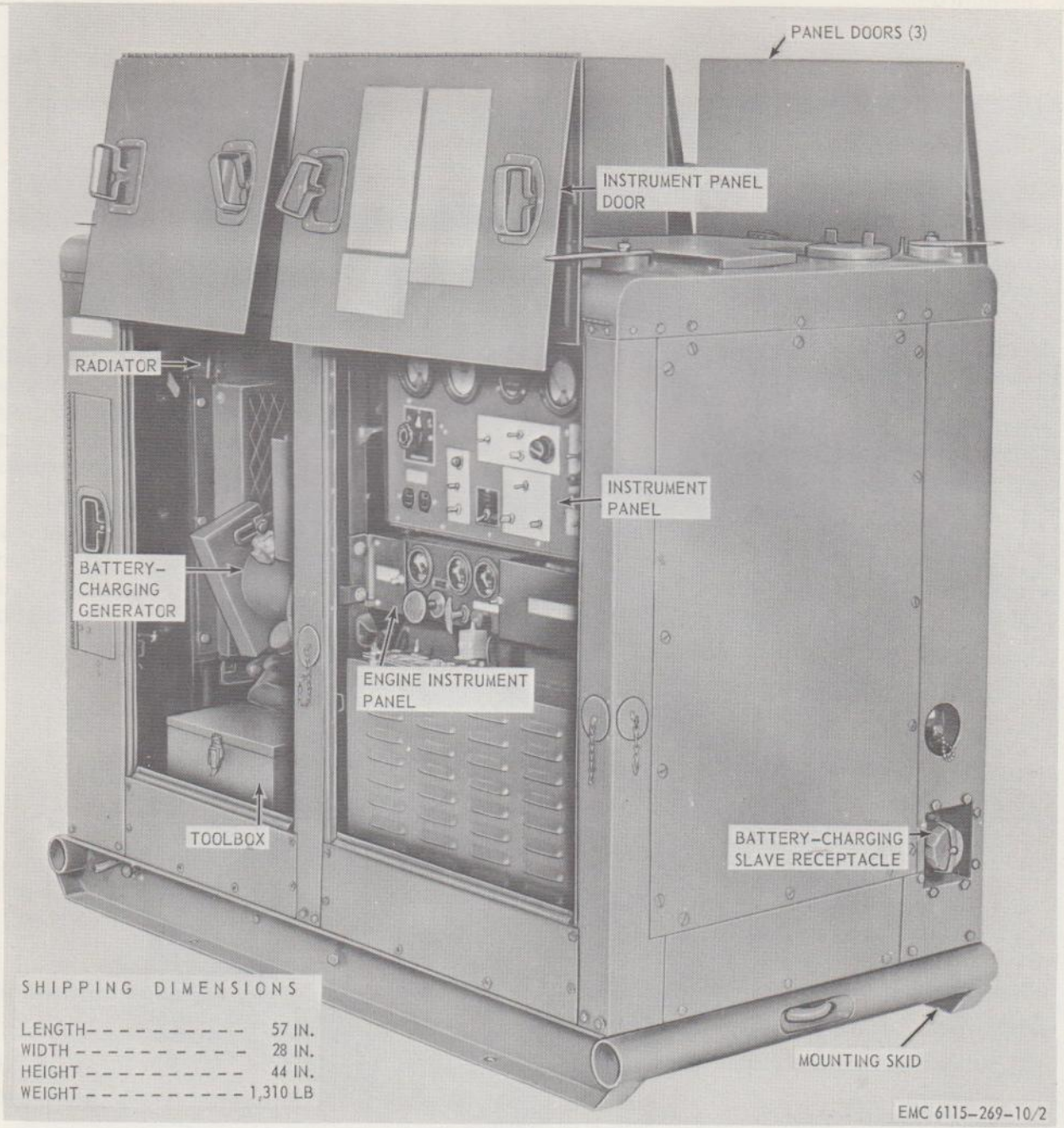


Figure 2. Generator set, left rear, three-quarter view, with shipping dimensions.

b. Engine. The Continental Engine, Model ES–162–6065 (fig. 1), is a 4-cycle, 4-cylinder, liquid-cooled, gasoline engine, which is directly coupled to the generator. At 2,200 rpm (revolutions per minute) the engine develops 31.4 horsepower. Normal operating speed is 1,800 rpm.

c. Generator. The Hol-Gar Generator, Model 16757, is directly coupled to the engine. It is a 10-kw, ac, 60-cycle, air-cooled generator which produces 120 volts, 1- and 3-phase; 120/240-volt, single-phase; and 120/208-volt, 3-phase current.

d. Control Panel. The control panel (fig. 2) contains the generator controls and instruments.

4. Identification

The generator has three identification plates. The information contained on these plates will be found in tabulated data (par. 6).

5. Differences in Models

This manual covers only the Hol-Gar Generator Set, Model CE 106AC/WK9. No known unit differences exist for the model covered by this manual.

6. Tabulated Data

a. General.

Manufacturer	Hol-Gar Manufacturing Company
Model	CE 1063C/WK9
Cycles	60
Kw	10

b. Engine.

Model	ES–162–6025
Fuel	Gasoline
Type	4-cycle, L-head
Horsepower	31.4 at 2,200 rpm
Rpm	1,800 for 60 cycles

c. Generator.

Kw	10		
Rpm	1,800		
Phase	1 and 3		
Wire	2–3–4		
Kva (kilovolt amperes)	12.5		
Cycles	60		
Pf percent (power factor)	0.80		
Volts and amp (amperes)			
Volts	120/208	120	120/240
Amperes	34.7	34.7	104/52
Model	16757		
Type	Ac		

d. Heater.

Manufacturer	Benmar Company
Model	CP 1530
Type	Liquid
Fuel	Gasoline
Voltage	24
Ampere	1
Heat output	Liquid 15,000 Btu (British thermal unit)

e. Corps of Engineers Plate A.

STOCK NO.	FSN 6115–778–6005
SER. NO.	
REG. NO.	
MFG.	HOL-GAR
MODEL	CE 106AC/WK9
CONT. NO.	88AF 46447–29
DATE MFGD.	
LENGTH	57
WIDTH	28
HEIGHT	44
CAP. OR PAY LOAD	
G.V.W.	LBS.
CUBE	FT.
ENG. MFGR.	CONTINENTAL MOTORS CORP.
MODEL	ES–162–6065
ENG. SER. NO.	
INSP. STAMP	
DATE INSP.	

f. Corps of Engineers Plate C.

NOM.	A. C. GENERATOR
MAKE	HOL-GAR MANUFACTURING CO.
MOD.	16757
SER.	
NO. OF WIRES	2–3–4
VOLTS	120/208 – 120 – 240
AMPS	60–104–52
K.W.	10
KVA	12.5
P.F. %	.80
CYCLES	60
R.P.M.	1800
MFD	
PH	1/3

g. Generator Plate.

MANUFACTURER	HOL-GAR
MODEL NO.	16757
SERIAL NO.	
KVA	12.5
RPM	1800
PF	0.8
TEMP RISE	65° C
CYCLES	60
DUTY	CONT

CONNECTION	VOLTS	AMPS	EXC. VOLTS	GEN FD CURRENT
3 PH. Y	120/208	34.7		
3 PH. Δ	120	34.7		
1 PH. Δ	120	104		
1 PH. Z	120/240	52		

h. Capacities.

Fuel tank	5¾ gal (gallon)
Crankcase	4 qt (quart)
Air cleaner	⅜ qt
Oil cleaner	1 qt

i. Dimensions and Weight.

Length	57 in. (inch)
Width	28 in.
Height	44 in.
Weight	1,310 lb (pound)

j. Maintenance and Operating Supplies. Table I provides a listing of all oil, grease, antifreeze, and gasoline required for the initial operation.

Table I. Maintenance and Operating Supplies

Item	Component application	Source of supply	Federal stock No.	Description	Quantity required for initial operation	Quantity required for 8 hours operation	Notes
1	0100 ENGINE ASSEMBLY (1)			OIL, LUBRICATING, 5 Gal Drums			(1) Includes quantity of oil to fill engine oil system as follows:
		10	9150–265–9435 (2)	OE–30	5⅜ Qt	(3)	4 Qt—Crankcase
		10	9150–265–9428 (2)	OE–10	5⅜ Qt	(3)	1 Qt—Oil filter
		10	9150–242–7603 (2)	OES	5⅜ Qt	(3)	⅜ Qt—Air cleaner
2	0304 AIR CLEANER (4)			OIL, LUBRICATING			(2) See SM 10–1–C4–1 for additional data and requisitioning procedures.
3	0306 TANK, FUEL	10	9130–160–1818	FUEL, GASOLINE: Bulk	5¾ Gal (5)	25.76 Gal (6)	(3) See LO 5–6115–269–20 for grade application and replenishment intervals.
4	0501 RADIATOR			WATER	3½ Gal (7)		(4) Use oil as prescribed in item 1.
		9	6850–243–1992	ANTIFREEZE: Ethylene gylcol; 1 gal can	(8)		(5) Tank capacity.
		9	6850–174–1806	ANTIFREEZE: Arctic 55 gal drum	(8)		(6) Average fuel consumption is 3.22 gal per hr (hour) of continuous operation.
							(7) Cooling system capacity.
							(8) See TM 5–6115–269–20 for quantities, ambient temperatures, specific gravities, and replenishment data.

Chapter 2
INSTALLATION AND OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

7. Inspection of New and Used Equipment

a. Perform the before-operation services as prescribed in paragraph 29.

b. Make a visual inspection of the generator set for damage and missing parts and accessories.

c. Be especially careful when inspecting used equipment for missing parts and damage.

d. Inspect the muffler and air cleaner for visible damage. Inspect the spark plug wire for loose connections.

e. Check the magneto and generator for loose connections and insecure mounting.

8. Servicing New and Used Equipment

a. General. Perform the operator's daily services listed in paragraph 29.

b. Lubrication. Lubricate the generator set in accordance with the current lubrication order.

c. Fuel System. Fill the fuel tank with fuel or install the auxiliary fuel line as applicable (par. 9).

Warning: **Do not fill the fuel tank while the engine is in operation. Gasoline spilled on a hot engine may explode and cause injury to personnel.**

Warning: **Provide a metal-to-metal contact between the container and the fuel tank when filling. This will prevent a spark from being generated as fuel flows over the metallic surface.**

d. Cooling System. Fill the cooling system with clean, fresh water. When freezing temperatures are expected, be sure the cooling system contains the proper antifreeze mixture.

e. Batteries. Be sure that the electrolyte level in the batteries is $\frac{3}{8}$ inch above the plates. If the level is low, add water. If the battery is received dry, report the condition to organizational maintenance.

Warning: **Do not smoke or use an open flame in the vicinity when servicing the batteries. Batteries generate hydrogen, a highly explosive gas.**

f. Cleaning. Clean all dirt and grease from the unit with an approved cleaning solvent.

9. Installation or Setting-Up Instructions

a. Location. Whenever possible, locate the generator set in an area free of dust and moisture. Also, if possible, avoid soft or muddy ground. If it becomes necessary to locate the unit on soft or muddy ground, arrange a foundation of planks or logs to prevent the unit from settling or sinking. The generator set should be operated from a position as level as possible at all times.

b. Indoor Installation. If the generator set is to be installed in an enclosure, make sure that the floor of the structure is of sufficient strength to support the weight of the unit. Provide at least 4 feet of space on all sides of the unit to allow for accessibility to the unit. Make sure that the enclosure is well ventilated with a maximum supply of fresh air available to the unit. Install a gastight exhaust pipe extension to carry the exhaust fumes to the outside. Use as few bends as possible in the exhaust extension and install metal shields for the extension where it passes through flammable walls.

Warning: **When the unit is operated in an enclosed area, exhaust gases must be piped to the outside. These gases contain carbon monoxide. Continued breathing of exhaust fumes is dangerous and may be fatal.**

c. Grounding. The generator set must be grounded prior to operation. The ground can be, in order of preference, an underground water piping system, driven galvanized rod, or a buried metal plate. A ground rod must be at least $\frac{3}{4}$ inch in diameter if hollow or $\frac{5}{8}$ inch if solid and be driven to a depth of at least 8 feet. A ground plate must have a minimum area of 9 sq. ft. (square feet) and be buried at a depth of at least 4 feet. The ground lead must be a No. 6 AWG (American Wire Gage) copper wire and be bolted or clamped to the rod, plate, or piping system. Connect the other end of the ground lead to the generator set ground terminal stud as shown by figure 3.

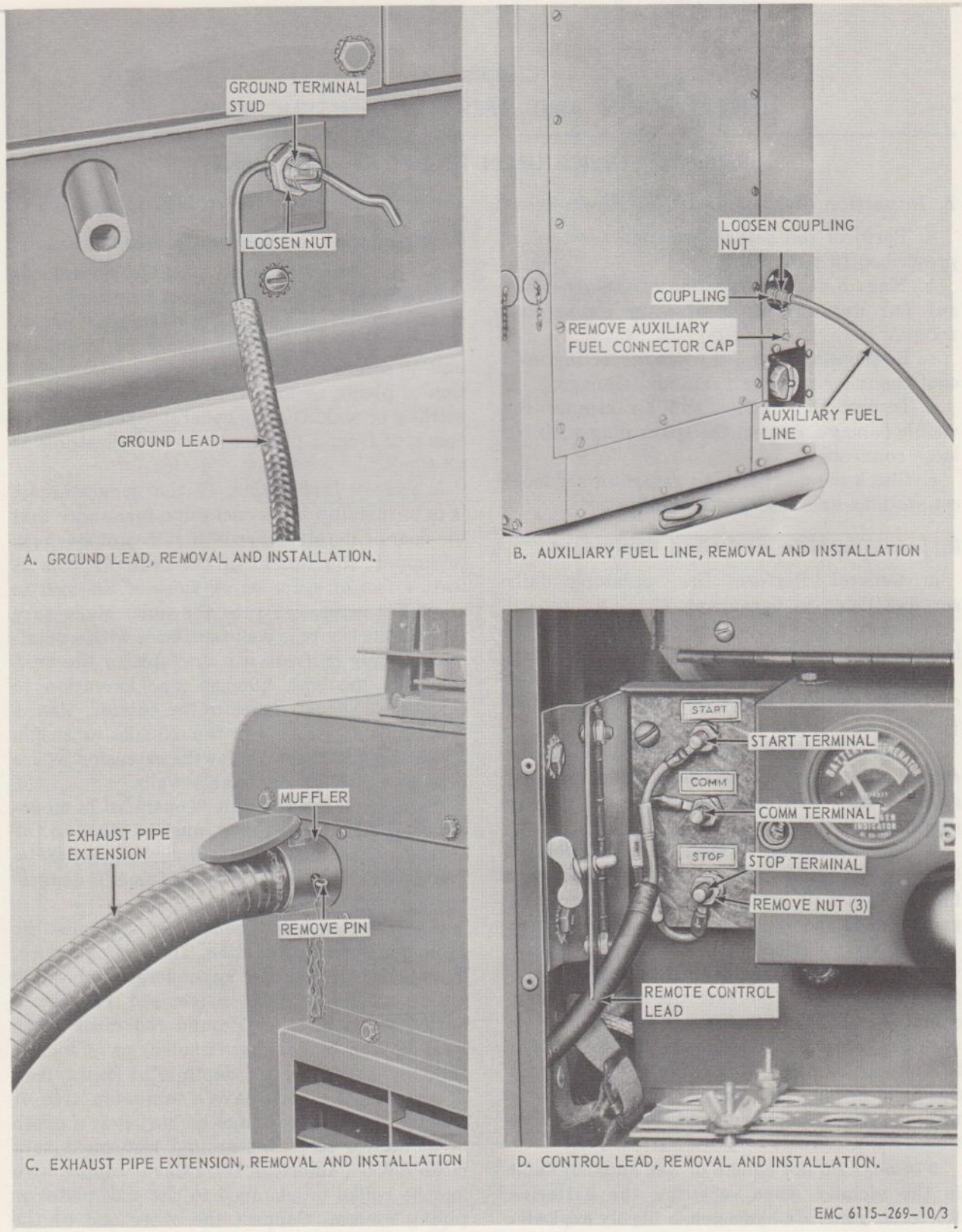


Figure 3. Setting-up instructions.

Warning: **Do not operate the generator set without a suitable ground connection. Electrical defects in the unit can cause death by electrocution when contact is made with an ungrounded system.**

d. Auxiliary Fuel Line. Connect the auxiliary fuel line as shown by figure 3.

e. Batteries. Remove and install the batteries (par. 54).

f. Load Cable Lead Connections. Connect the load cable leads to the generator set as shown by figure 4.

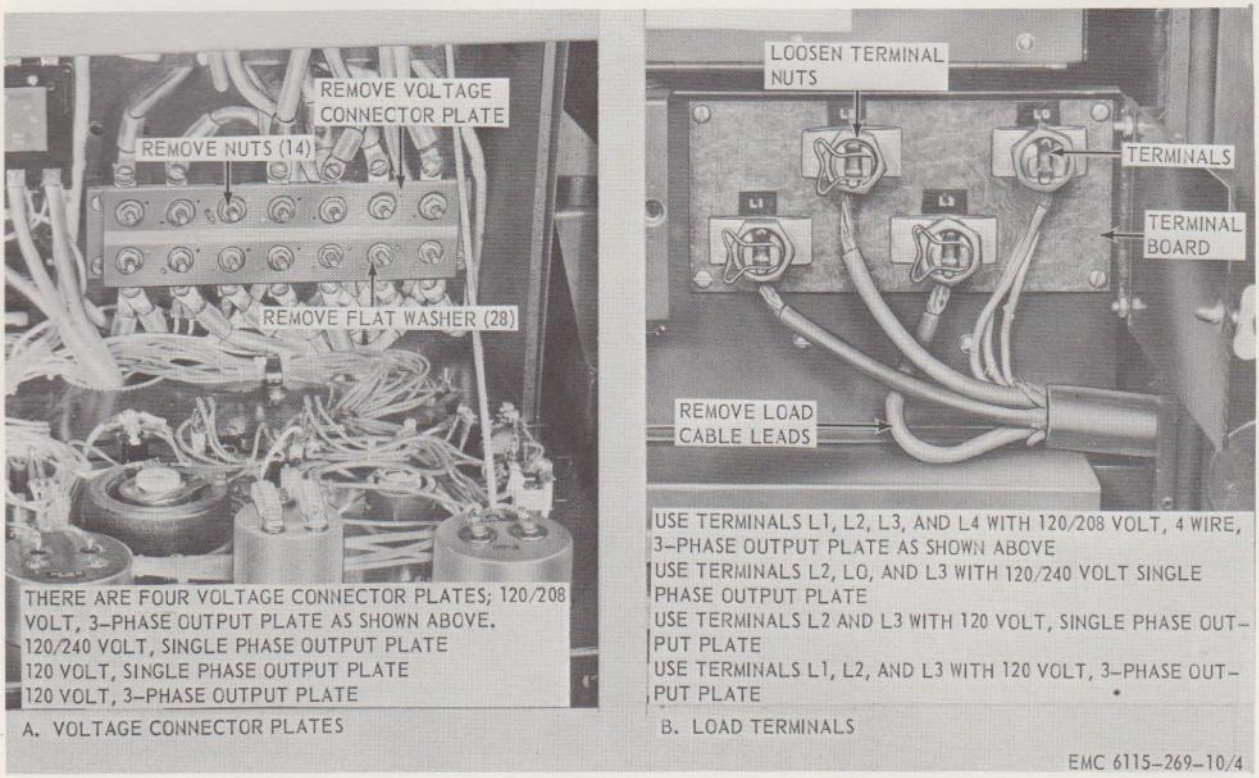


Figure 4. Voltage conversion instructions and load cable leads, removal and installation.

g. Exhaust Pipe Extension. Remove and install the exhaust pipe extension as shown by figure 3.

h. Remote Control Cable Lead. Remove and install the remote control cable leads as shown by figure 3.

10. Movement to New Worksite

a. Preparation for Movement.

(1) Disconnect the load cable leads (par. 9).

(2) Remove the exhaust pipe extension, if used.

(3) Remove the plug and drain the fuel tank.

(4) Close or install all doors and panels.

(5) Refer to the basic issue items list and make sure that all items listed are on or with the equipment.

b. Movement. The generator set may be towed or skidded for short distances where the terrain permits. Secure a suitable chain or cable to the skid base and tow the generator set to the new worksite.

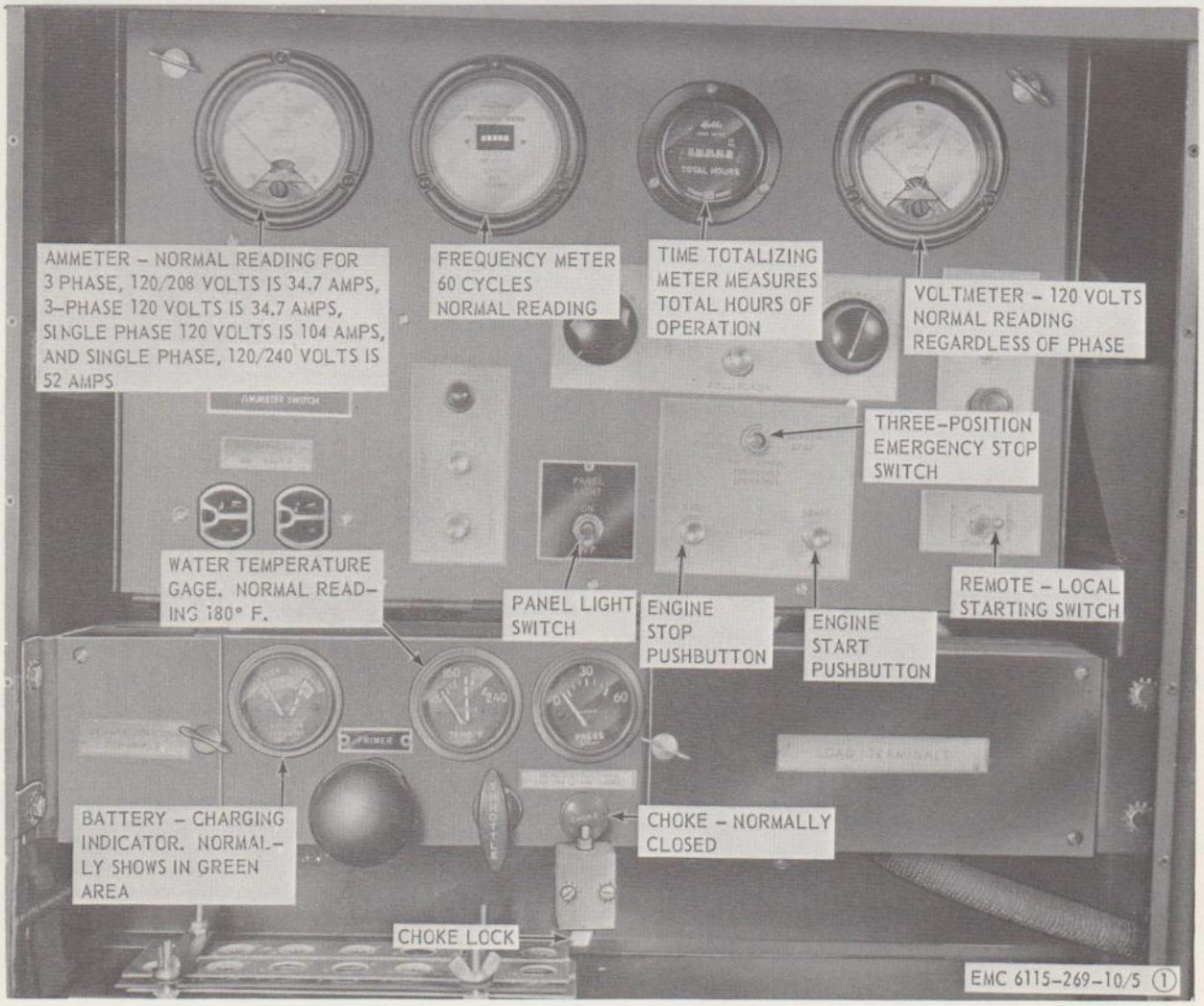
11. Equipment Conversion

Reconnect the generator set for desired voltage as shown by figure 4.

Section II. CONTROLS AND INSTRUMENTS AND OPERATION UNDER USUAL CONDITIONS

12. Controls and Instruments

The purpose and normal readings of all controls and instruments are shown by figure 5.



Reference A

Figure 5. Controls and instruments.

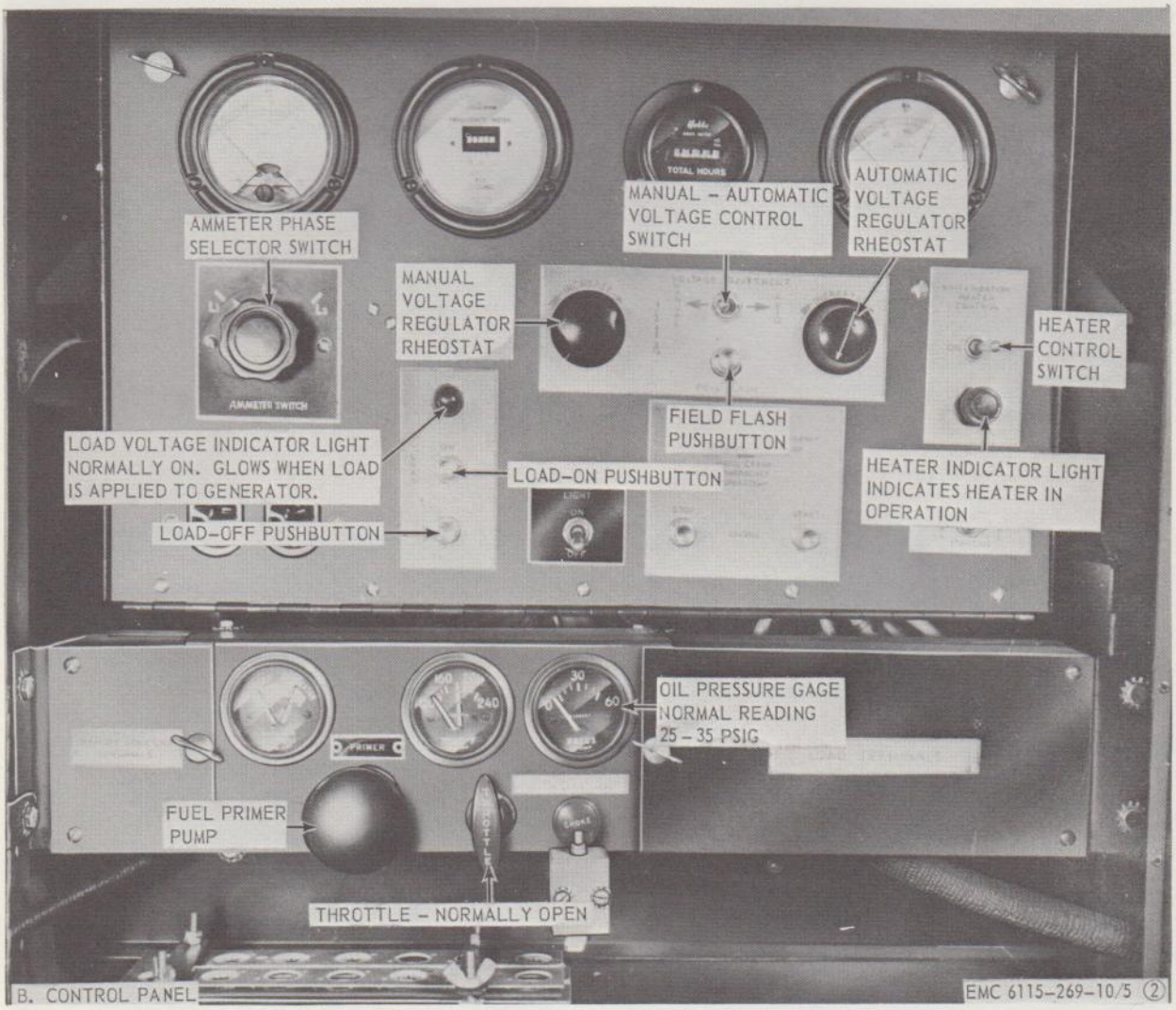
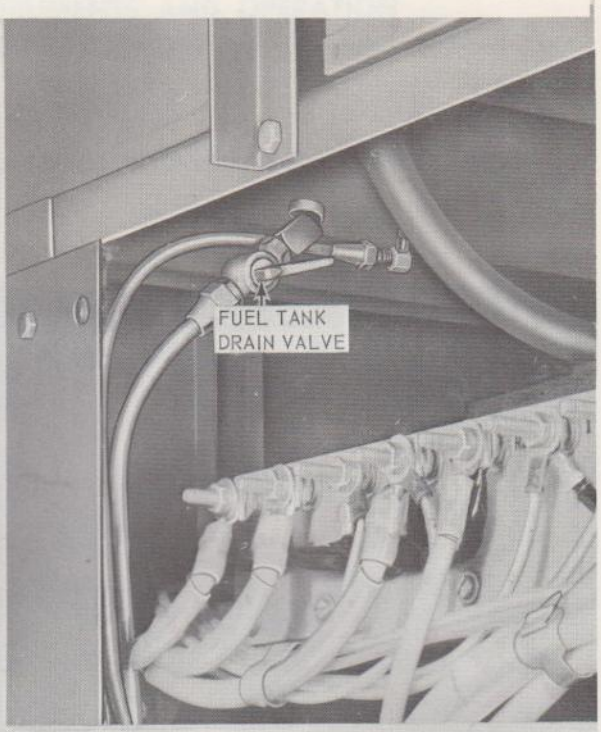


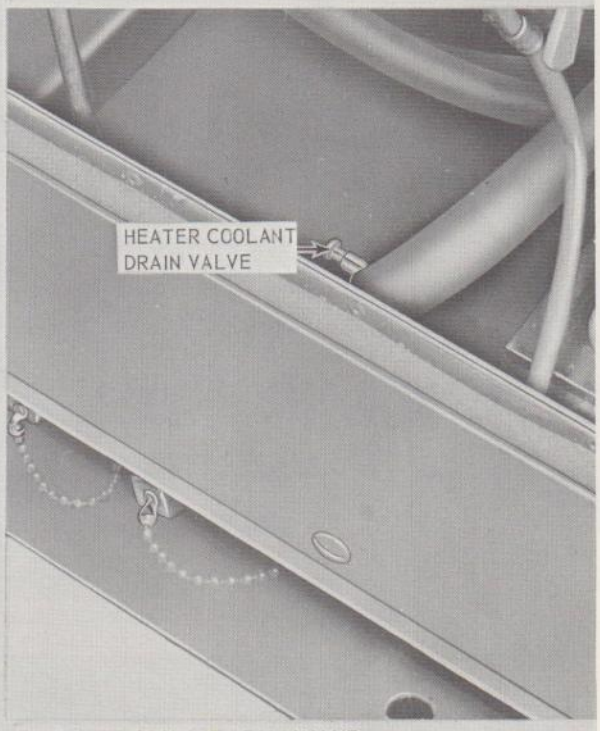
Figure 5—Continued.

C. FUEL QUANTITY GAGE AND FUEL TANK VENT VALVE



D. FUEL TANK DRAIN VALVE.

E. FUEL SELECTOR THREE-WAY VALVE



F. HEATER COOLANT DRAIN VALVE

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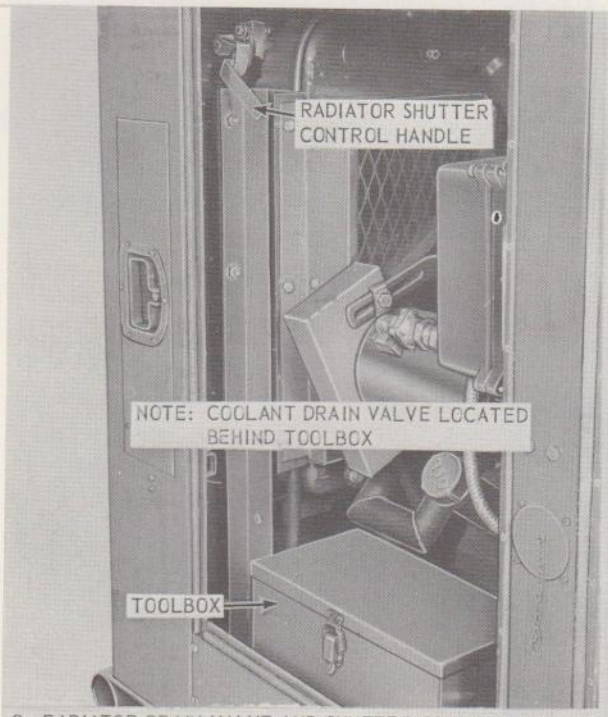
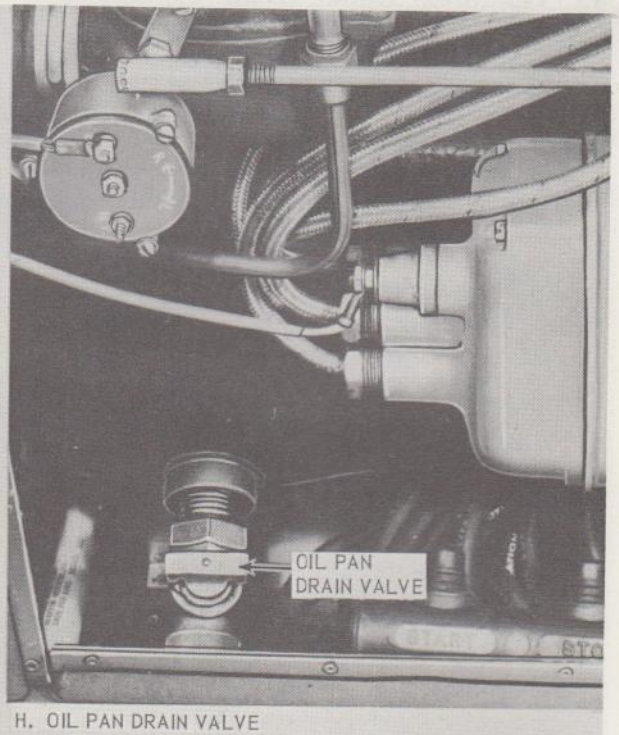
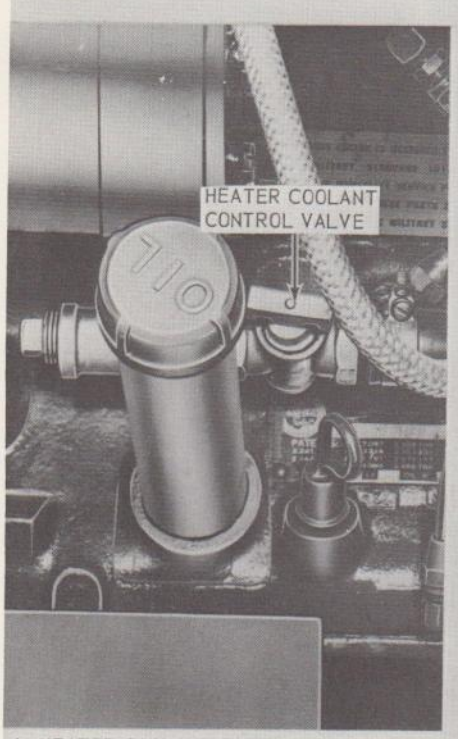
Figure 5—Continued.



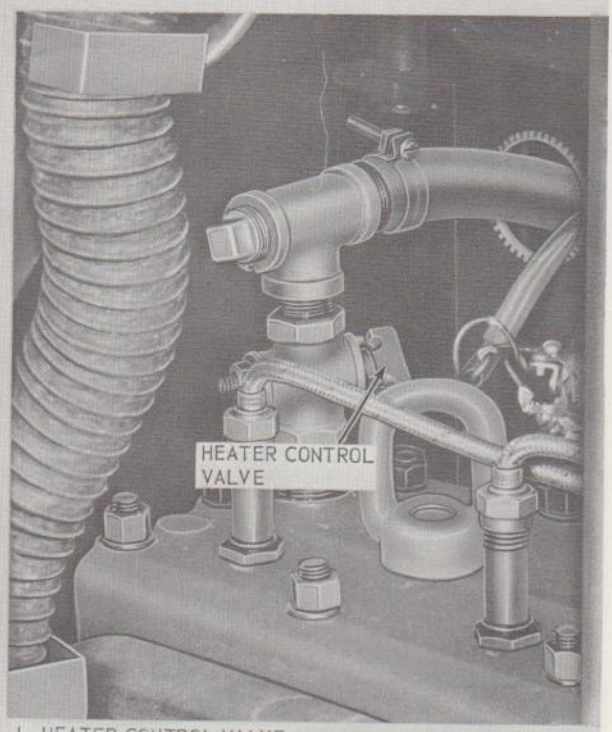
G. RADIATOR DRAIN VALVE AND SHUTTER CONTROL HANDLE



H. OIL PAN DRAIN VALVE



I. HEATER COOLANT CONTROL VALVE.



J. HEATER CONTROL VALVE.

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Figure 5—Continued.

13. Operation Under Usual Conditions

It is essential that the operator know how to perform every operation of which the generator set is capable. Paragraphs 14, 15, and 16 give instructions on engine starting, engine stopping, and operating details of the generator set. Since nearly every job presents a different problem, the operator may have to vary the given procedure to fit the individual job.

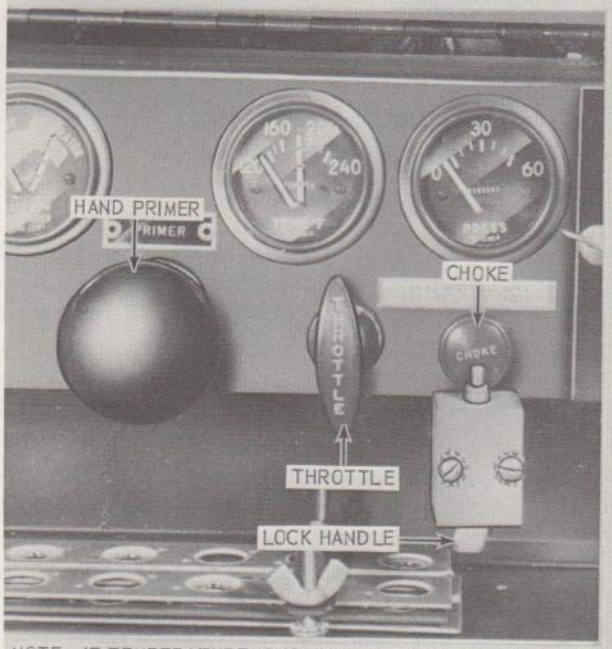
14. Engine Starting Instructions

a. Close all doors except the instrument panel door shown in figure 2.

b. Start the engine as shown by figure 6.

STEP 1. TURN THE MANUAL VOLTAGE REGULATOR RHEOSTAT TO THE EXTREME COUNTERCLOCKWISE POSITION.

STEP 2. TURN THE AUTOMATIC VOLTAGE REGULATOR RHEOSTAT TO THE EXTREME COUNTERCLOCKWISE POSITION.



NOTE: IF TEMPERATURE IS 40°F TO −25°F PULL AND PUSH HAND PRIMER. LOCK IN PLACE WHEN ENGINE FUEL SYSTEM IS PRIMED.

STEP 5. PULL THROTTLE OUT APPROXIMATELY THREE QUARTERS OF AN INCH.

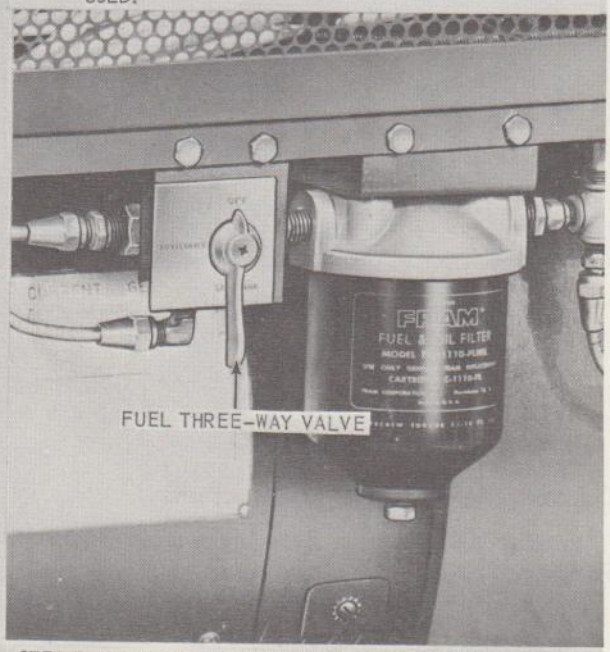
STEP 6. PULL CHOKE LOCK HANDLE DOWN AND PULL CHOKE OUT.

STEP 3. PLACE EMERGENCY STOP SWITCH ON NORMAL OPERATION POSITION.

NOTE: POSITION EMERGENCY STOP SWITCH IN HAND CRANK EMERGENCY OPERATION POSITION IF A CRANK IS USED.

STEP 4. PLACE REMOTE–LOCAL SWITCH ON LOCAL POSITION.

NOTE: POSITION REMOTE–LOCAL SWITCH ON REMOTE POSITION IF A REMOTE CONTROL STATION IS USED.



STEP 7. PLACE THREE–WAY VALVE ON SET TANK POSITION.

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Figure 6. Engine starting instructions.

STEP 8. PUSH THE START PUSHBUTTON.

CAUTION: DO NOT OPERATE STARTER LONGER THAN 30 SECONDS. ALLOW 2-MINUTE COOLING-OFF INTERVALS BETWEEN STARTS.

STEP 9. AS SOON AS ENGINE STARTS, CHECK BATTERY-CHARGING INDICATOR. INDICATOR NEEDLE SHOULD BE IN THE GREEN AREA. IF NOT, STOP THE ENGINE (PAR. 15) AND REPORT THE CONDITION TO ORGANIZATIONAL MAINTENANCE.

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Figure 6—Continued.

15. Engine Stopping Instructions

a. Normal stopping. Stop the engine as shown in figure 7.

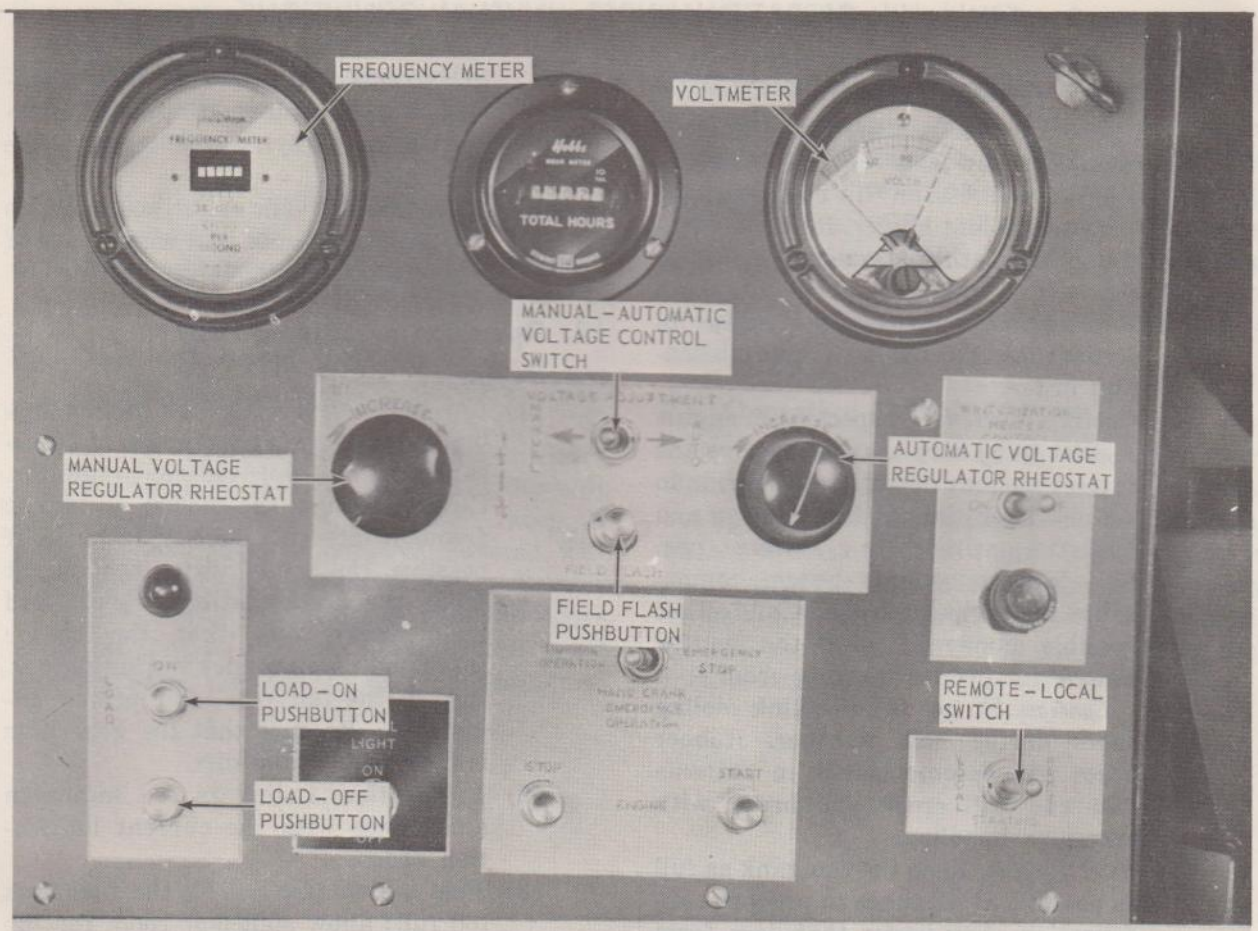
Figure 7. Engine stopping instructions.

b. Stopping by Safety Devices. The engine is equipped with safety devices which will shut down the engine in the event of loss of engine oil pressure or high coolant temperature. These devices, when actuated, will cause the magneto to ground out and stop the engine.

16. Operating Details

a. General. When the load is connected and the engine is operating, the generator set operates at its rated voltage and amperes indicated on the voltmeter and ammeter as shown by figure 5. Reduce the load or report the condition to organizational maintenance if ampere reading is greater than shown by figure 5. The operator must always be observant of the generator set, paying particular attention to unusual sounds which indicate malfunction. In such an event, stop the engine (par. 15) and report the condition to organizational maintenance.

b. Operation. Operate the generator set as shown by figure 8.



STEP 1. START ENGINE (PAR. 14).
STEP 2. ADJUST THE THROTTLE UNTIL THE FREQUENCY METER INDICATES 60 CYCLES.
STEP 3. DEPRESS FIELD FLASH PUSHBUTTON AND HOLD UNTIL VOLTAGE BUILDS UP.
CAUTION: DO NOT DEPRESS FLASHBUTTON LONGER THAN 3 SECONDS. IF VOLTMETER DOES NOT INDICATE VOLTAGE BUILDUP, REPORT THE CONDITION TO ORGANIZATIONAL MAINTENANCE.
STEP 4. PLACE MANUAL – AUTOMATIC VOLTAGE CONTROL SWITCH IN AUTOMATIC POSITION.
NOTE: IF MANUAL VOLTAGE REGULATOR RHEOSTAT IS USED, PLACE THE SWITCH IN THE MANUAL POSITION.
STEP 5. ADJUST AUTOMATIC VOLTAGE REGULATOR RHEOSTAT TO DESIRED VOLTAGE; CLOCKWISE ROTATION WILL INCREASE VOLTAGE AND COUNTERCLOCKWISE ROTATION WILL DECREASE VOLTAGE.
NOTE: ADJUST MANUAL VOLTAGE REGULATOR RHEOSTAT TO DESIRED VOLTAGE IN THE SAME MANNER BY PLACING MANUAL – AUTOMATIC VOLTAGE CONTROL SWITCH IN MANUAL POSITION.
STEP 6. PLACE REMOTE – LOCAL SWITCH ON LOCAL POSITION.
NOTE: PLACE REMOTE – LOCAL SWITCH ON REMOTE POSITION IF REMOTE CONTROL STATION IS USED.
STEP 7. DEPRESS LOAD – ON PUSHBUTTON.

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Figure 8. Operating instructions.

c. Remote Control Operation. Operate the generator set as shown by figure 8.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

17. Operation in Extreme Cold (Below 0°F.)

a. This generator set is designed to operate in temperatures as low as —65° F. (Fahrenheit). To operate successfully in cold weather, utilize the engine coolant heater. Refer to paragraph 14 for cold weather starting.

b. Engine.

(1) *Lubrication.* Lubricate the engine in accordance with the current lubrication order.

(2) *Cooling system.* Inspect the engine coolant to be sure that it contains the correct amount of antifreeze. Prior to adding the initial antifreeze, clean and flush the entire cooling system (par. 53). Inspect cooling system components for signs of leakage and other possible damage. Inspect the shutter control for proper working order.

Caution: **Do not bend or kink cooling hoses during cold weather. Rubber hoses will become brittle in extreme cold and will crack and break with excessive handling.**

(3) *Fuel system.* Keep the fuel tank as full as possible at all times to prevent condensation. Any water that does form in the fuel tank will be carried to the primary and secondary fuel filters. Therefore it may be necessary to drain the filter more frequently than under normal conditions.

(4) *Electrical system.* Before starting the engine, wipe the engine electrical components free of ice and moisture. Do not disturb the wiring since it becomes brittle with extreme cold. Allow the wiring to warm up before attempting to twist or bend it. See that the batteries are fully charged at all times.

Caution: **Operate the engine for approximately 1 hour after adding water to the batteries. This will permit added water to mix with the electrolyte and prevent freezing.**

c. Generator.

(1) *Lubrication.* The generator is equipped with lifeseal bearings and requires no special lubrication.

(2) *Stabilization period.* When operating in extreme cold, allow at least a 15-minute stabilization period after warm-up before applying the load to the generator.

(3) *Field control.* The main generator is designed to operate in a wide range of temperatures without special service.

18. Operation in Extreme Heat

a. Engine.

(1) *Cooling system.* Keep the cooling system free from rust and scale. If necessary, add an approved rust inhibitor. Clean and flush the cooling system at frequent intervals (par. 53). Avoid, if possible, the use of water that might cause the accumulation of rust and scale. Make sure that the engine thermostat is in proper working order. Inspect the fan V-belt for proper adjustment. Be sure that the generator is free of dust and dirt.

(2) *Lubrication.* Lubricate the engine in accordance with the current lubrication order.

(3) Fuel system. Do not fill the fuel tank too full; allow sufficient room for the expansion of fuel.

(4) *Batteries.* Inspect the electrolyte level of the batteries daily. The plates should be covered by ⅜ inch of water. Add water as necessary.

b. Generator. Be sure that the generator is free of air-flow restrictions. Where dust does exist, all doors and panels must remain closed. When operating indoors, make provisions for adequate ventilation and the venting of exhaust fumes to the outside (par. 9).

19. Operation in Dusty or Sandy Areas

a. General. If installation of the generator set is permanent, erect a protective cover for the unit. In temporary installation, take advantage of natural barriers as much as possible. Where water is available, keep the immediate area wetted down. All doors and panels should remain closed. Keep the unit as clean as possible and give special attention to screens and grills.

b. Lubrication. In sandy or dusty areas, filters and strainers must be cleaned more frequently

than under normal conditions. Clean all lubrication points before and after lubrication. Be sure that all lubricant containers are tightly sealed and stored in an area as free as possible from dust and sand.

c. Fuel System. Take all necessary precautions to keep dirt and grit out of the fuel tank. Clean the fuel filter periodically (par. 52).

20. Operation Under Rainy or Humid Conditions

When the generator set is operated outdoors, erect a shelter, if possible, to protect the unit. If erection of a shelter is not possible, keep the generator set, when inoperative, covered with canvas or other waterproof material. Remove the cover during dry periods, open the doors, allow the unit to dry out. Keep the fuel tanks full to prevent the forming of condensation.

21. Operation in Salt Water Areas

a. General. Salt water causes corrosive action on metal. Care must be taken to avoid contact of equipment with salt water. If contact is made, or if the unit is exposed to salt spray, wash the unit frequently with fresh, clean water.

b. Painting. Paint all exposed nonpolished surfaces. Refer to TM 9–2851. Coat all exposed polished surfaces with standard-issue rustproofing material, if available, or cover parts with a light coat of grease.

22. Operation at High Altitude

The generator set is designed to operate at elevations up to 5,000 feet above sea level without special service or adjustment. Provide adequate ventilation as the engine is more likely to overheat at high altitudes. It may be necessary to change the fuel-air ratio of the engine; if so, report the condition to organizational maintenance.

Section IV. OPERATION OF AUXILIARY MATERIAL USED IN CONJUNCTION WITH GENERATOR SET

23. Winterization Heater

a. General. It is necessary to preheat the gasoline engine when starting in temperatures of approximately —25° F. For this purpose, the generator set is equipped with a gasoline-burning winterization heater. An electric strip heater is also provided for the battery box to heat the batteries while the engine is in operation. Fresh heated air from the heater is directed into the battery box and oil pan. The engine coolant is preheated by the heater. A thermostatic switch, controlled by the oil temperature, automatically stops and starts the heater. This switch will open whenever engine oil temperature reaches 160° to 175° F., by shutting off the heater fuel.

b. Starting. Start the winterization heater as shown by figure 9.

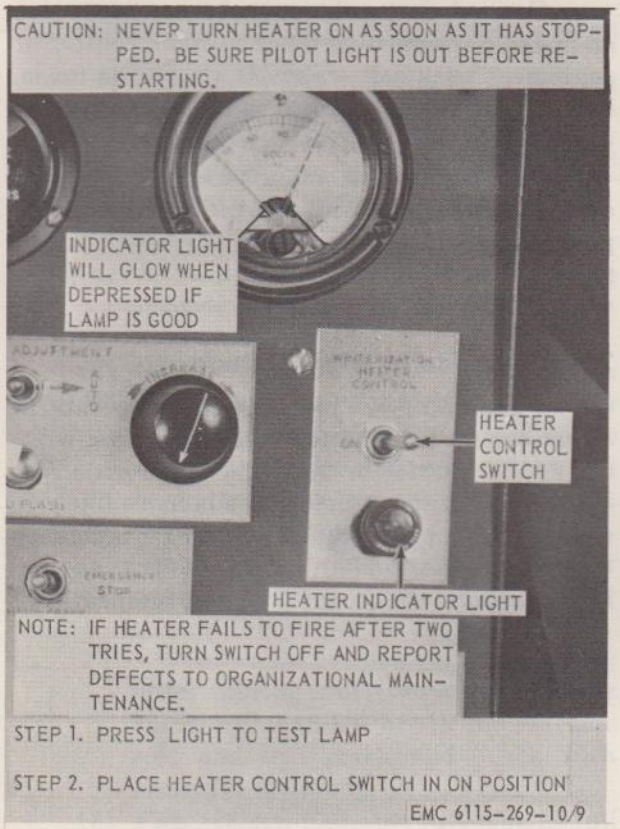


Figure 9. Winterization heater, starting.

Figure 10. Winterization heater, stopping.

c. Stopping. Stop the winterization heater as shown by figure 10.

24. Fire Extinguisher (Carbon Dioxide Type)

a. Description. The carbon dioxide type fire extinguisher is suitable for use on electrical and flammable liquid fires. This extinguisher is of the 5-pound size.

b. Operation.

(1) Remove the fire extinguisher from its location.
(2) Break the seal.
(3) Point the discharge horn at the base of the flame.
(4) Squeeze the trigger and handle together for discharge and direct the stream at the base of the fire.

c. Refilling and Maintenance. For detailed instructions on refilling and maintenance, refer to TM 5–687 and TM 9–1799.

25. Fire Extinguisher (Monobromotrifluoromethane Type)

a. Description. The monobromotrifluoromethane type fire extinguisher replaces the carbon dioxide and carbon tetrachloride type fire extinguishers used in the past. It is generally suitable for use on all types of fire, with the exception of fires involved with LOX (liquid oxygen) generating equipment. The fire extinguisher is furnished with a disposable-type cylinder.

b. Operation. To operate the fire extinguisher, perform the following operations:

(1) Remove the fire extinguisher from its location.
(2) Break the seal by pulling the safety pin from the handle.
(3) Point the horn at the base of the flame.

(4) Depress the trigger for discharge and direct the stream of contents at the base of the fire.

(5) Replace with a new cylinder immediately after using.

c. Replacement of Cylinder. To replace with a new cylinder, perform the following operations:

(1) Press the lever to release pressure from the old cylinder.

(2) Loosen the swivel valve coupling nut and remove the valve assembly from the used cylinder.

(3) Remove the instruction band from the used cylinder.

(4) Place a new cylinder through the instruction band.

(5) Replace the safety pin in the valve and seal the pin with sealing wire.

(6) Attach the valve assembly, tighten the swivel coupling nut on the new cylinder, and replace the fire extinguisher in the mounting bracket.

(7) Adjust the instruction band on the cylinder to show maintenance and operating instructions.

d. Maintenance. Weigh the fire extinguisher every 6 months and replace the cylinder if gross weight has deceased 4 ounces or more. Lubricate the cylinder neck threads with 1 drop of OE 30 oil before reassembly.

Chapter 3

MAINTENANCE INSTRUCTIONS

Note. No special tools or equipment are needed to perform operator maintenance on the generator set.

Section I. LUBRICATION

26. General Lubrication Information

a. This section contains a reproduction of the lubrication order and lubrication instructions which are supplemental to, and are not specifically covered in the lubrication order.

b. The lubrication order shown in figure 11 is the approved lubrication order for the generator set. For the current lubrication order, always refer to DA Pam 310–4.

LUBRICATION ORDER

LO 5-6115-269-20

27 MARCH 1961 (Supersedes LO 5-6115-269-20 dated 6 January 1961)

GENERATOR SET, GASOLINE ENGINE: 10 KW, AC, 120 V, 1 AND 3 PHASE, 120/240 V, SINGLE PHASE, 120/208 V, 3 PHASE, 60 CYCLE, SKID MTD, (HOL-GAR MODEL CE106AC/WK9) W/CONTINENTAL ENGINE MODEL FS 162-6065

Reference: SM 10-1-C4-1

Intervals are based on normal operation. Reduce to compensate for abnormal operations and severe conditions. During inactive periods sufficient lubrication must be performed for adequate preservation.

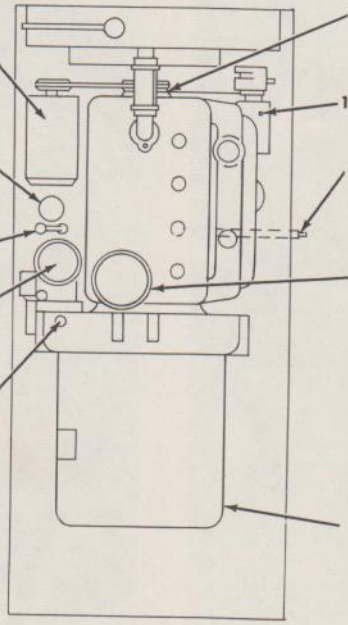
Clean fittings before lubricating.

Relubricate after washing.

Clean parts with SOLVENT, dry-cleaning, or with OIL, fuel, Diesel. Dry before lubricating.

Drain crankcase only when hot after operation; replenish and check level when cool.

LUBRICANT • INTERVAL			INTERVAL • LUBRICANT		
Generator Bearings (Sealed bearings, no lubrication required)			Water Pump (Sealed bearings, no lubrication required)		
1 Engine Oil Filler Cap (See key)	OE		Magneto Cam Wick (Sparingly) 5	1000	OE
2 Engine Oil Level Gage (Check level)		10	Engine Oil Drain (Drain and refill) 6	100	
3 Oil Filter (Disassemble, clean housing, renew element and reassemble) (See note 2)		100	Air Cleaner (Refill oil reservoir to level mark, every 50 hours disassemble entire unit, clean, re-oil and reassemble) (See key) 7	10	OE
4 Starter Bushings	OE	500			



Main Generator (Sealed bearings, no lubrication required)

CONTINUED ON FOLLOWING PAGE

EMC 6115-269-10/11 ①

Figure 11. Lubrication order.

CONTINUED FROM
PRECEDING PAGE

— KEY —

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES			INTERVALS
		Above +32°F	+40°F to −10°F	0°F to −65°F	
OE −OIL, Engine, Heavy Duty					
Crankcase	5 qt	**OE** 30 or **9250**	**OE** 10 or **9110**	**OES**	Intervals given are in hours of normal operation.
Air Cleaner	3/8 qt				
Oil Can Points					
OES −OIL, Engine, Sub-zero					

NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW −10°F. Remove lubricants prescribed in the key for temperatures above −10°F. Clean parts with SOLVENT, dry-cleaning. Relubricate with lubricants specified in the key for temperatures below −10°F.

2. OIL FILTERS. After installing new filter elements, fill crankcase, operate engine 5 minutes, check housings for leaks. check crankcase oil level and bring to full mark.

3. OIL CAN POINTS. Every 50 hours clean and lightly coat the governor and carburetor linkage and all hinges with OE.

Copy of this Lubrication Order will remain with the equipment at all times; instructions contained herein are mandatory.

BY ORDER OF THE
SECRETARY OF THE ARMY:

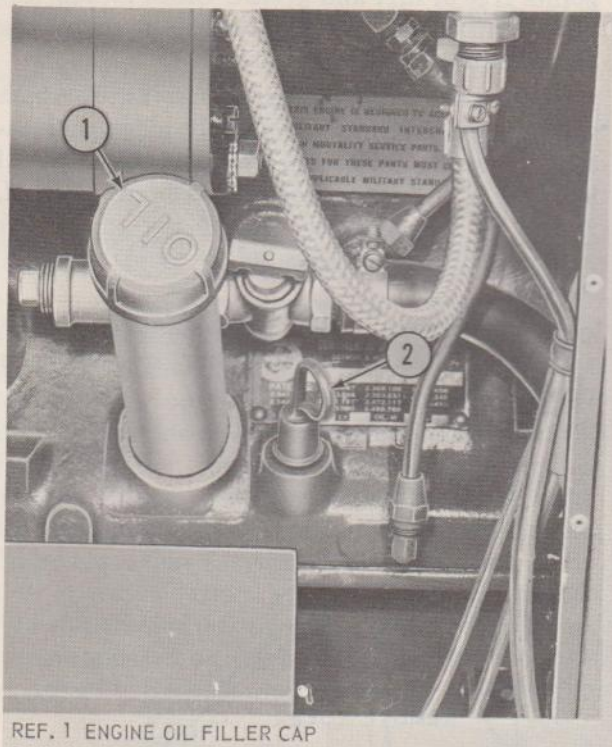
G. H. DECKER,
General, United States Army,
Chief of Staff.

OFFICIAL:

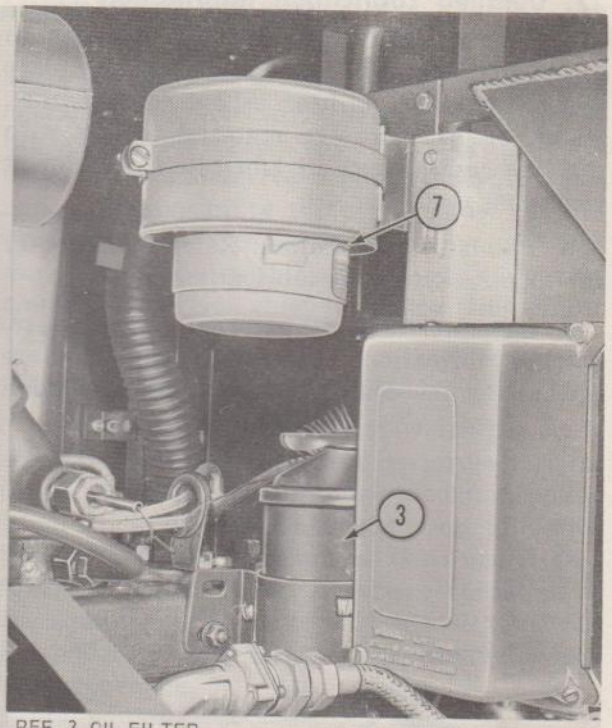
R. V. LEE,
Major General, United States Army,
The Adjutant General.

EMC 6115-269-10/11 ②

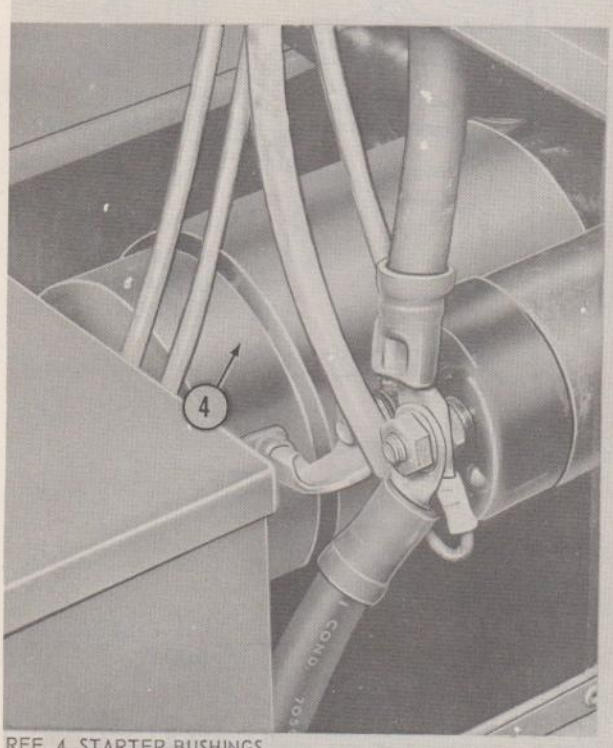
Figure 11—Continued.



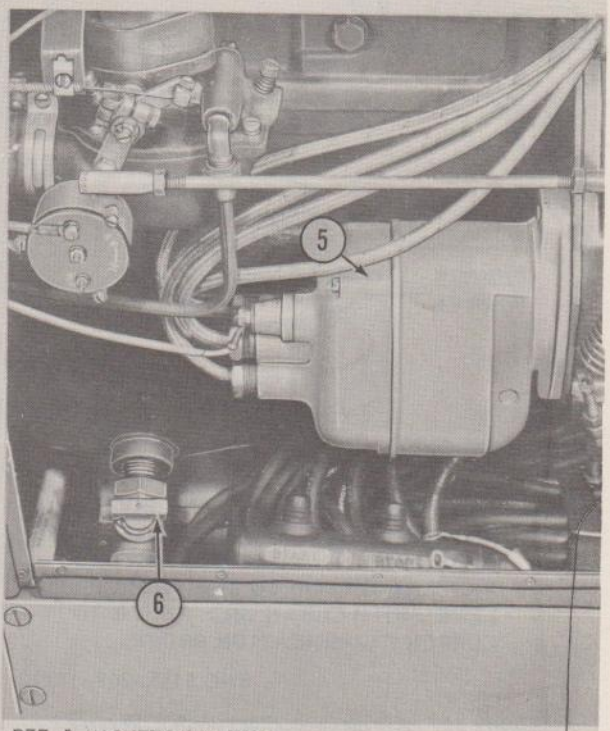
REF. 1 ENGINE OIL FILLER CAP
REF. 2 ENGINE OIL LEVEL GAGE



REF. 3 OIL FILTER
REF. 7 AIR CLEANER



REF. 4 STARTER BUSHINGS



REF. 5 MAGNETO CAM WICK
REF. 6 ENGINE OIL DRAIN

EMC 6115-269-10/11 (3)

Figure 11—Continued.

27. Detailed Lubrication Information

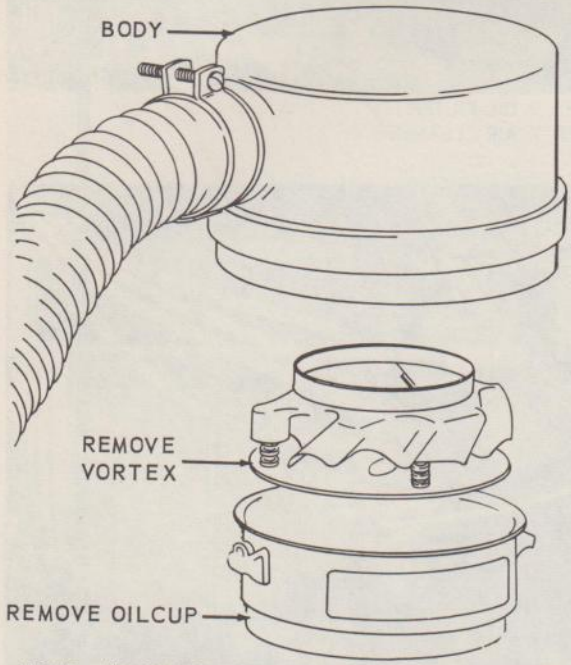
a. Care of Lubricants. Keep all lubricants in sealed containers and store in a clean, dry place away from external heat. Allow no dust, dirt, water, or other foreign material to mix with the lubricants. Keep all lubrication equipment clean and ready for use.

b. Points of Lubrication. Refer to figure 11 for illustration of the lubrication points.

c. Cleaning. Keep all external parts, not requiring lubrication, clean of lubricants. Before lubricating the equipment, wipe all lubrication points free of dirt and grease. Clean all lubrication points after lubricating to prevent the accumulation of foreign matter.

d. Operation Immediately After Lubrication. Operate the engine immediately after lubrication. Inspect connections which might cause oil leakage. If the crankcase oil has been changed, it will be necessary to operate the engine for approximately 5 minutes before checking the oil level.

e. Air Cleaner Service. Disassemble, service, and reassemble the air cleaner as shown by figure 12.

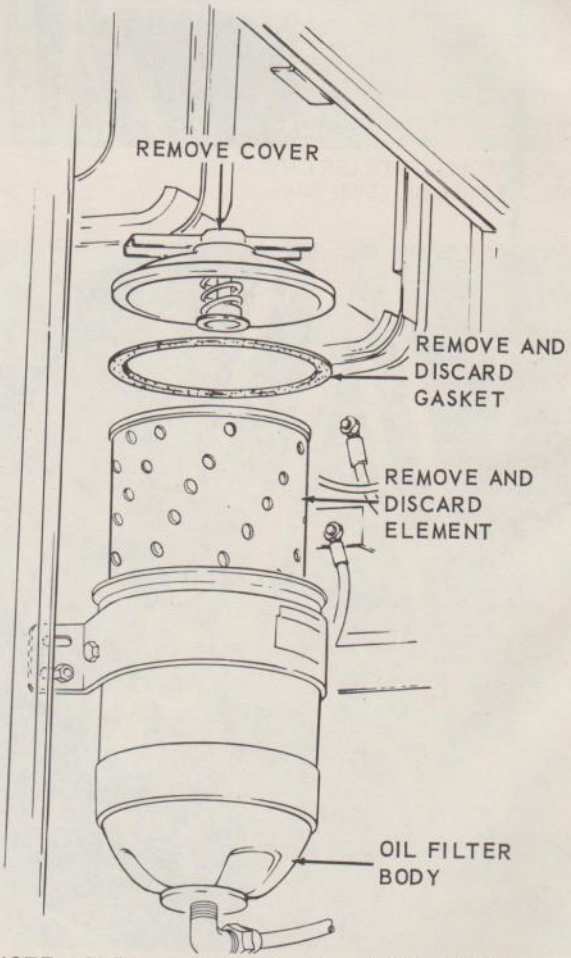


NOTE: WASH VORTEX, OILCUP, AND BODY WITH AN APPROVED CLEANING SOLVENT AND BLOW DRY WITH LOW-PRESSURE AIR. FILL THE OILCUP TO THE PROPER LEVEL WITH CLEAN OIL. REFER TO CURRENT LUBRICATION ORDER.

EMC 6115-269-10/12

Figure 12. Air cleaner, disassembly, service, and reassembly.

f. Oil Filter Service. Service the oil filter as shown by figure 13.



NOTE: CLEAN THE OIL FILTER WITH AN APPROVED CLEANING SOLVENT. REMOVE THE SLUDGE FROM THE BODY.

EMC 6115-269-10/13

Figure 13. Oil filter service.

Section II. PREVENTIVE MAINTENANCE SERVICES

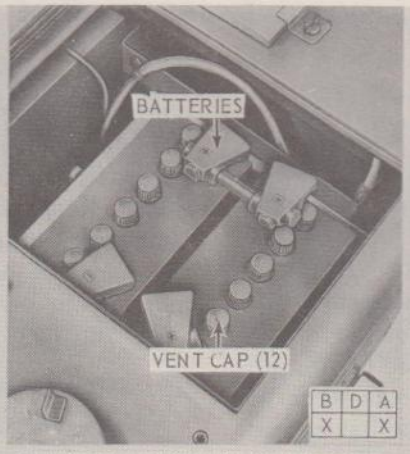
28. General

To insure that the equipment is ready for operation at all times, it must be inspected systematically before operation, during operation, and after operation, so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance services will be performed before operation. Defects discovered during operation of the unit will be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed during operation which would damage the equipment if operation were continued. After-operation services will be performed by the operator after every operating period. After-operation services will be performed at intervals based on the normal operations of the equipment. Reduce interval to compensate for abnormal conditions. Defects or unsatisfactory operating characteristics beyond the scope of the operator to correct must be reported at the earliest opportunity to organizational maintenance. Responsibility for performance of preventive maintenance services rests not only with the operator, but with the entire chain of command from section chief to commanding officer (AR 750–5).

29. Operator's Daily Services

a. General. The intervals at which the operator's daily services are to be performed are indicated by an x in the appropriate column, on the small tab, located at the bottom of each illustration in figure 14. The tab columns are B (before), D (during), and A (after) operation of the equipment. The intervals and services not illustrated are prescribed in the following subparagraphs.

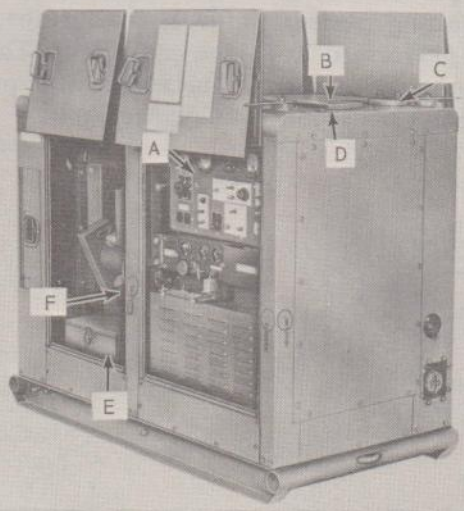
A. INSPECT FOR DAMAGE AND INCORRECT OPERATION.



B. INSPECT FOR LOOSE CONNECTIONS. INSPECT ELECTROLYTE LEVEL. CLEAN AND SERVICE.(PAR. 8)

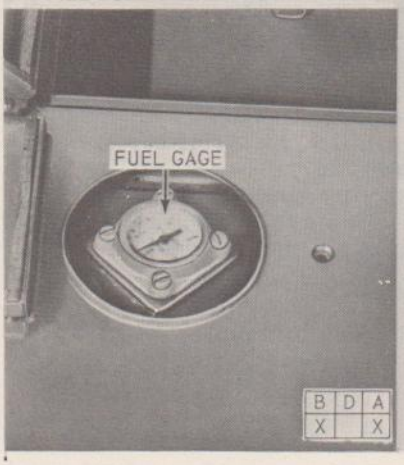
C. SEE THAT BREATHER VALVE IS OPEN.

LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER

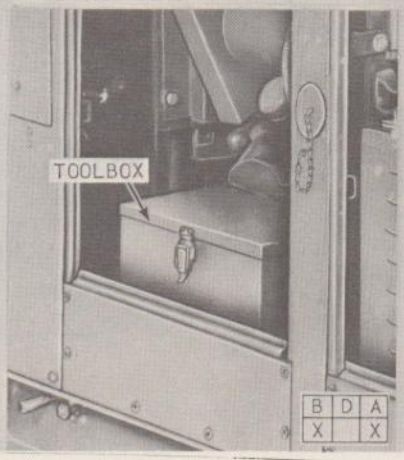


CORRECT OR REPORT ALL DISCREPANCIES TO ORGANIZATIONAL MAINTENANCE

D. INSPECT FUEL GAGE FOR DAMAGE FILL FUEL TANK AS NECESSARY.



E. INSPECT FOR DAMAGE. SEE THAT ALL TOOLS ARE CLEAN AND SERVICEABLE.



F. CHECK OIL LEVEL ADD OIL IF LOW REFER TO CURRENT LUBRICATION ORDER.

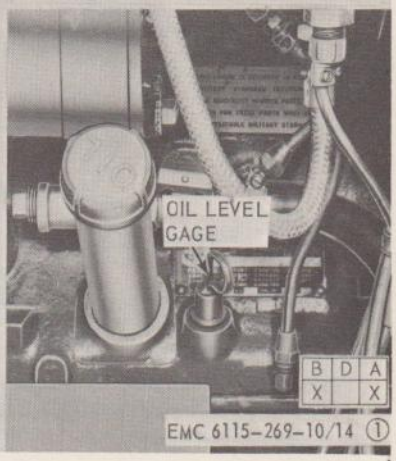
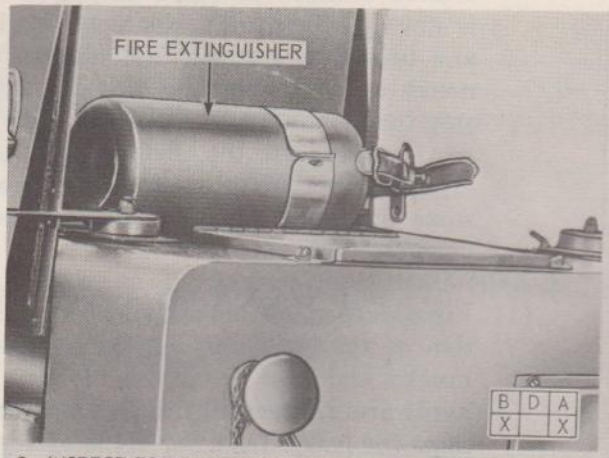
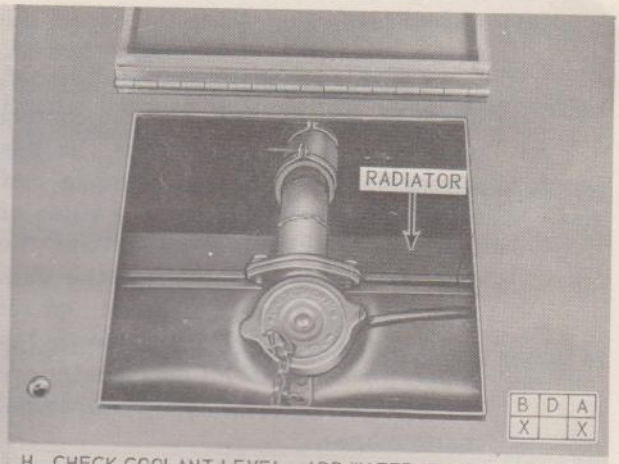


Figure 14. Operator's daily services.

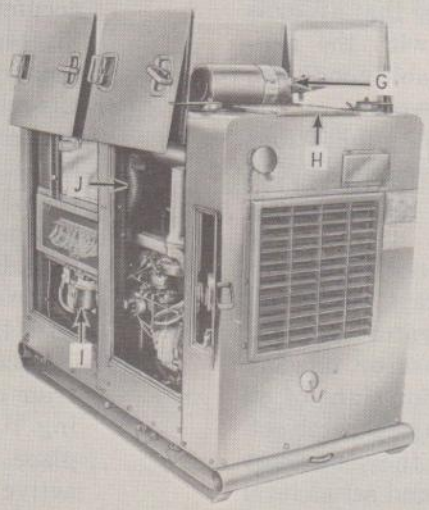


G. INSPECT FOR PROPER CONTENTS AND DAMAGE.



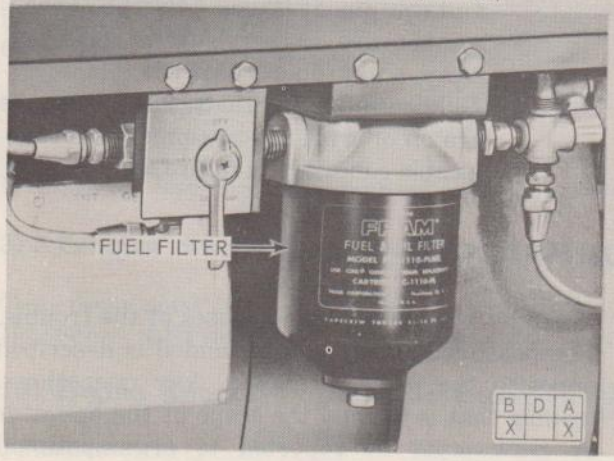
H. CHECK COOLANT LEVEL. ADD WATER IF LEVEL IS 1 INCH FROM FILLER NECK.

LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER



CORRECT OR REPORT ALL DISCREPANCIES TO ORGANIZATIONAL MAINTENANCE

I. SERVICE FUEL FILTER AS NECASSARY. (PAR. 52)



J. SERVICE AIR CLEANER AS NECESSARY. (PAR. 27)

Figure 14—Continued.

b. Before-Operation Services.

(1) *Visual inspection.* Visually inspect the entire generator set for cracks, breaks, and loose and missing mounting hardware. Inspect the inside of the control panel for loose connections, broken wires, dirt accumulation, damage, and signs of tampering. Look for signs of fuel or oil leaks under and around the unit. Inspect to insure that the generator set is securely mounted and set as level as possible. Do not operate the generator set until all deficiencies are corrected or reported to organizational maintenance.

(2) *Lubrication.* Check the engine oil level. Add oil if necessary. Lubricate in accordance with the lubrication order.

(3) *Tools and equipment.* See that all tools and equipment issued with the generator set are in serviceable condition, clean, and properly stowed.

(4) *Publications.* See that all publications are on or with the equipment, in serviceable condition, and properly stowed.

c. During-Operation Services.

(1) *Visual inspection.* Make a visual inspection of the generator set for cracks, breaks, and loose or missing bolts and nuts. Inspect for signs of oil and fuel leaks under the generator set. Inspect to insure that the generator set is securely mounted and set as level as possible. If deficiencies are noted, shut down the unit at once and correct or report the condition to organizational maintenance. Do not resume operation until the condition has been corrected.

(2) *Unusual operation and noises.* Observe the generator set for unusual operation, such as engine overheating, excessive vibration, failure of the generator to deliver full power to the load, and failure to respond to controls. If noises and irregularities are noticed, stop the generator set at once and correct or report the deficiencies to organizational maintenance. Do not resume operation until the deficiencies have been corrected.

d. After-Operation Services.

(1) *Visual inspection.* Make a visual inspection of the generator set for cracks, breaks, and loose or missing mounting hardware. Inspect all fuel line connections for leaks. Look for signs of fuel or oil leaks under the generator set. Inspect inside the control panel for loose connections, damage, and dirt accumulation. Correct or report all discrepancies to organizational maintenance.

(2) *Cleaning.* See that the generator set is clean and free of grease, dirt, sludge, and oil on all surfaces. Clean the generator set with an approved cleaning solvent and wipe dry with a soft, absorbent cloth.

(3) *Lubrication.* Lubricate in accordance with the lubrication order.

(4) *Protection.* Protect the generator set from damage and tampering by covering it and placing it in a sheltered place. When the generator set is inactive for any length of time, unpainted parts should be covered with an approved rust preventive compound.

(5) *Tools and equipment.* See that all tools and equipment issued with the generator set are in serviceable condition, clean, and properly stowed.

(6) *Publications.* See that all publications are on or with the equipment, in serviceable condition, and properly stowed.

Section III. TROUBLESHOOTING

30. General

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the generator set and its components. Each trouble symptom stated is followed by a list of probable causes of the trouble. The possible remedy recommended is described opposite the probable cause. Any operational trouble that is beyond the scope of the operator or crew must be reported to organizational maintenance.

31. Engine Fails to Start

Probable cause	*Possible remedy*
Fuel tank empty	Fill fuel tank (par. 8).
Dirt, gum, or water in fuel filter	Service fuel filter (par. 52).
Three-way valve out of position	Position three-way valve in tank or auxiliary position as applicable.
Starter fails to crank engine	Refer to paragraph 46.
High coolant temperature switch operates	Fill radiator to within 1 inch of filler neck (par. 8). Inspect cooling system for leaks. Correct or report condition to organizational maintenance.

32. Engine Oil Pressure Low

Probable cause	*Possible remedy*
Crankcase oil level low	Refer to current lubrication order and fill engine to proper oil level.
Oil filter clogged	Service oil filter (par. 27).

33. Engine Misses or Operates Erratically

Probable cause	*Possible remedy*
Sediment or water in fuel system	Service fuel filter (par. 52).
Air cleaner clogged	Clean and refill air cleaner to proper level (par. 27).
Ventilation poor	Provide proper air circulation.

34. Engine Overheats

Probable cause	*Possible remedy*
Lubrication improper	Lubricate in accordance with current lubrication order.
Ventilation poor	Provide proper air circulation.
Coolant level low	Fill cooling system (par. 8).
Cooling system clogged	Service radiator (par. 53).
Engine overloaded	Reduce load.
Fan V-belt slipping	Adjust fan V-belt (par. 57).
Doors open	Close doors.

35. Engine Lacks Power

Probable cause	*Possible remedy*
Oil insufficient	Check oil level. Refill to proper level in accordance with the current lubrication order.
Air cleaner clogged	Clean and refill air cleaner to proper level (par. 27).

36. Engine Stops Suddenly

Probable cause	*Possible remedy*
Fuel tank empty	Fill fuel tank (par. 9).
Air cleaner clogged	Clean and refill air cleaner to proper level (par. 27).
Dirt, gum, or water in fuel filter	Service fuel filter (par. 52).
Oil level low	Fill crankcase to proper oil level in accordance with current lubrication order.
High coolant temperature	Fill radiator to within 1 inch of filler neck (par. 8). Inspect cooling system for leaks. Correct or report condition to organizational maintenance.
Fuel tank cap vent valve in fuel tank cap plugged or closed	Clean fuel tank cap or open vent valve (par. 51).

37. Exhaust Smoke Excessive

Probable cause	*Possible remedy*
Choke partly closed	Open choke fully.
Too much oil in air cleaner	Clean and refill air cleaner (par. 27).

38. Engine Knocks or Develops Excessive Noise

Probable cause	*Possible remedy*
Oil level low	Refer to current lubrication order and fill engine to proper oil level.

Caution: If the engine knocks or is noisy when the oil is at the proper level, stop the engine (par. 15) immediately and report the condition to organizational maintenance. Continued use can cause serious damage to the engine.

39. Main Generator Fails To Build Up Rated Voltage

Probable cause	*Possible remedy*
Engine speed too slow	Adjust throttle (par. 14).
Operating procedure improper	Refer to paragraph 14.

40. Main Generator Overheats

Probable cause	*Possible remedy*
Ventilation inadequate	Provide proper ventilation.
Generator screens obstructed	Clean the screens.
Load excessive	Reduce the load or report condition to organizational maintenance.

41. Main Generator Voltage Too High

Probable cause	*Possible remedy*
Voltage control improperly adjusted	Adjust voltage control rheostat (par. 16).

42. Main Circuit Breaker Fails To Close or Supply Power To Load

Probable cause	*Possible remedy*
Load pushbutton in OFF position	Push ON pushbutton.
Output voltage too low	Adjust voltage control rheostat (par. 16).
Load terminal connection loose	Tighten load terminal nuts.

43. Main Circuit Breaker Continues To Trip

Probable cause	*Possible remedy*
Load excessive	Reduce the load.

Note. The load on the three phases should be as equal as possible and should not exceed the rated current on any phase.

44. Main Generator Frequency Drops Under Load

Probable cause	*Possible remedy*
Engine lacks power	Refer to paragraph 36.

45. 115-V Receptacle Inoperative

Probable cause	*Possible remedy*
Fuse defective	Replace fuse (par. 56).

46. Starter Fails To Crank Engine

Probable cause	*Possible remedy*
Batteries discharged or defective	Replace batteries (par. 54).
Battery connectors loose or defective	Clean and tighten connectors.

47. Battery-Charging Indicator Fails To Show Charge When Batteries Are Low Or Discharged

Probable cause	*Possible remedy*
V-belts loose or out of adjustment	Adjust V-belts (par. 57).

48. Winterization Heater Fails To Ignite

Probable cause	*Possible remedy*
Gasoline tank empty	Fill gasoline tank.
Gasoline three-way valve in wrong position	Position valve in TANK or AUXILIARY position as applicable.
Fuel filter clogged	Service fuel filter (par. 52).

49. Winterization Heater Fails To Keep Burning

Probable cause	*Possible remedy*
Fuel tank empty	Fill fuel tank.
Fuel filter clogged	Service fuel filter (par. 52).

GPO 811–560–4

50. Field Expedient Repairs

Operational troubles may occur while the generator set is operating in the field where supplies and repair parts are not available and normal remedial action cannot be performed. When this condition exists, the expedient remedies listed below may be used only upon the decision of the unit commander. Equipment so repaired must be removed from operation at the earliest possible moment and properly repaired before being placed in operation again.

Trouble	*Expedient remedy*
Fuel line leaks	Wrap fuel line with rubber tape.
Air cleaner defective or missing	Remove defective air cleaner (par. 27) and secure a clean cloth over the inlet air opening in the carburetor.

Section IV. ENGINE AND GENERATOR ACCESSORIES

51. Fuel Tank Cap and Chain

a. Remove and install the fuel tank cap and chain as shown by figure 15.

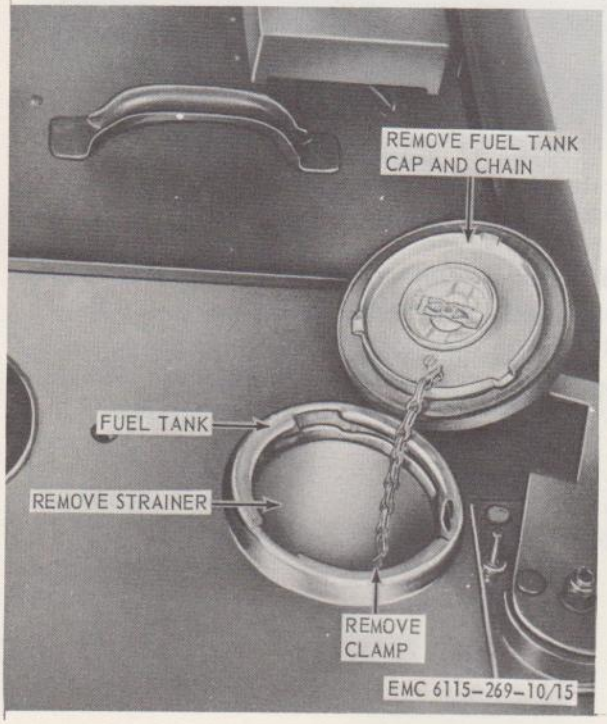


Figure 15. Fuel tank cap and chain, removal and installation.

b. Clean and inspect.

52. Fuel Filter

Service the fuel nlter as shown by figure 16.

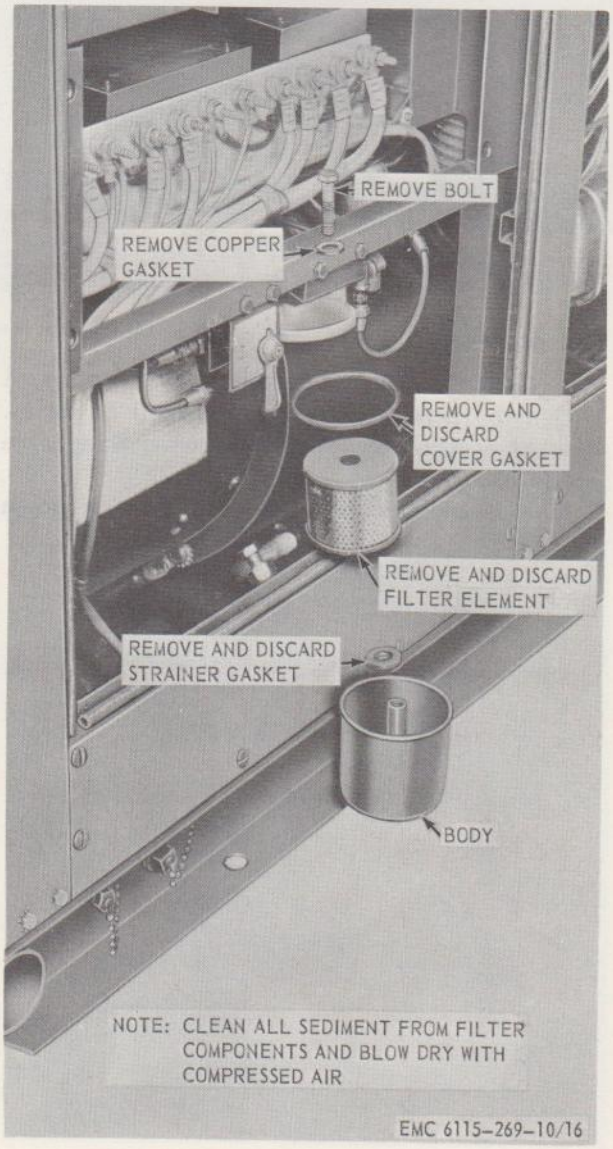


Figure 16. Fuel filter servicing instructions.

53. Radiator

a. General. The radiator should be cleaned externally at weekly intervals by directing compressed air at the front of the radiator to remove dirt and foreign material from the radiator cores. The cooling system should be drained and flushed at least twice a year or before adding and after draining antifreeze solution.

b. Servicing.

(1) Operate the engine until it reaches operating temperature (par. 14).
(2) Drain the cooling system.
(3) Fill the radiator with clean, fresh water and the proper amount of an approved cleaning solvent.
(4) Operate the engine long enough to remove all rust and scale from the cooling system. Drain the cooling system.
(5) Repeat (3) and (4) above with an approved neutralizer.
(6) Repeat (1) and (2) above with clean water only until the water that is drained from the radiator runs clear.
(7) See that the cooling system is filled.

54. Batteries

a. General. This generator set is equipped with two 12-volt batteries connected in series. The batteries are grounded by the negative cable assembly.

b. Remove and install the batteries as shown by figure 17.

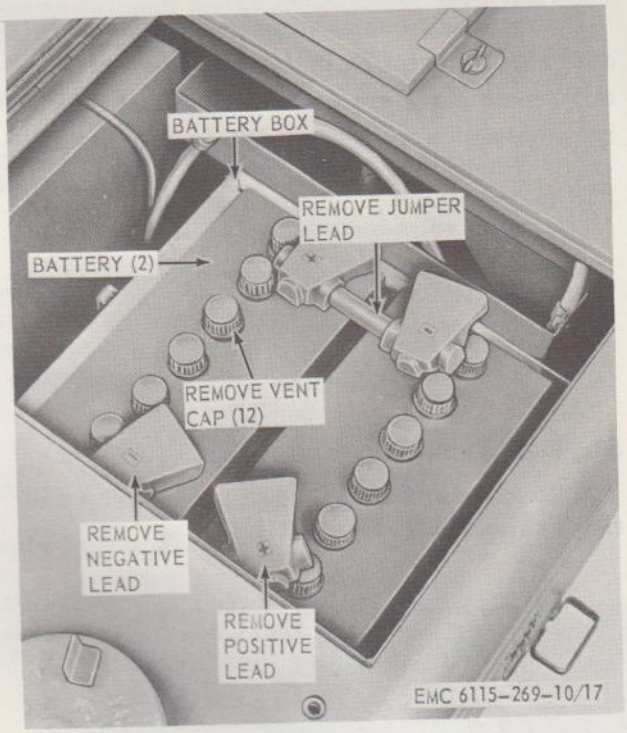


Figure 17. Batteries, removal and installation.

c. Clean and inspect.

55. Panel Lamps, Heater Indicator Lamp, and Load Indicator Lamp

Remove and install all lamps as shown by figure 18.

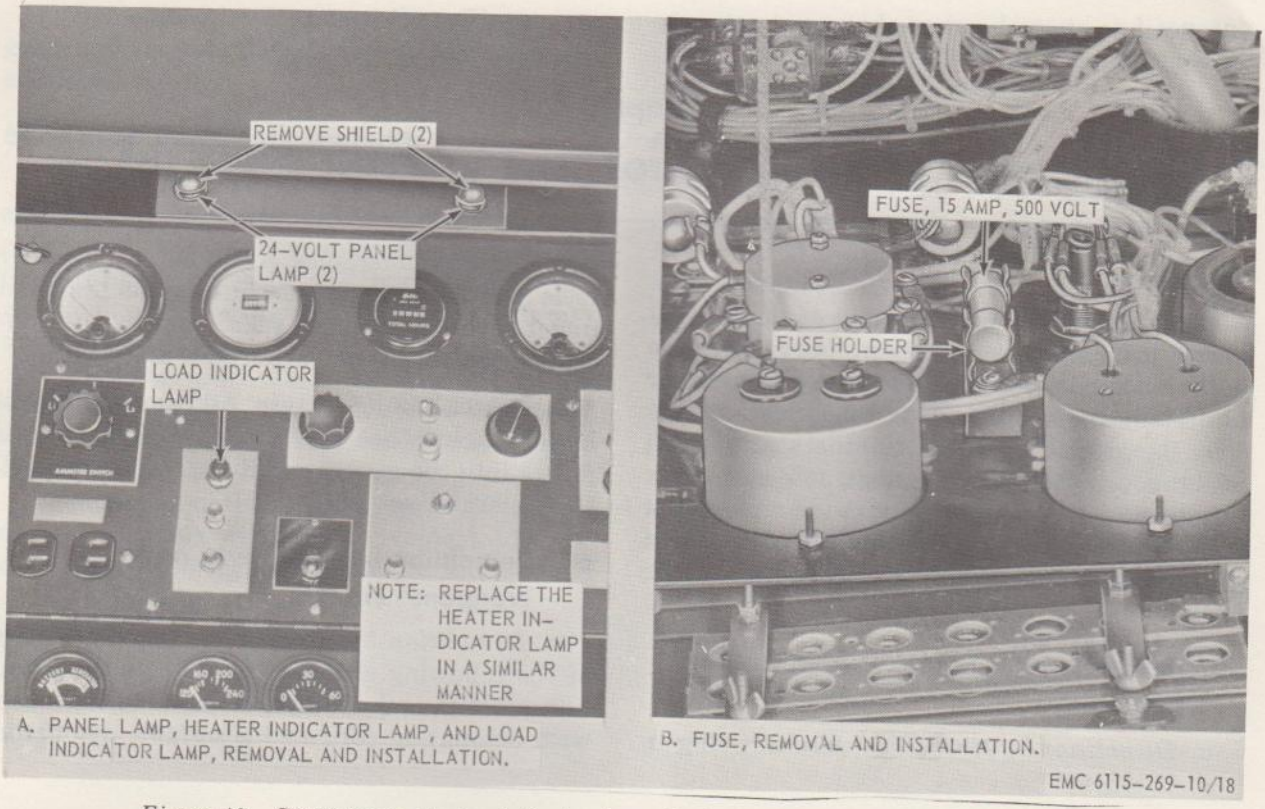


Figure 18. Panel lamps, heater indicator lamp, load indicator lamp, and fuse, removal and installation.

56. Fuses

a. General. The 15-amp fuse, located behind the instrument panel, acts as a circuit protection device for the 115-volt receptacle.

b. Remove and install the fuses as shown by figure 18.

57. Fan V-Belt

Adjust the fan V-belt as shown by figure 19.

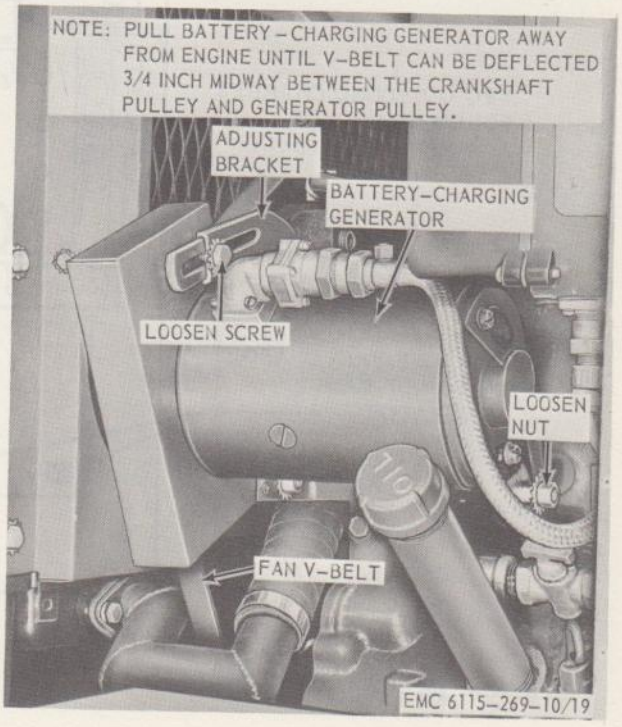


Figure 19. Fan V-belt adjustment instructions.

Chapter 4

DEMOLITION OF THE GENERATOR SET TO PREVENT ENEMY USE

58. General

When capture or abandonment of the generator set to an enemy is imminent, the responsible unit commander must make the decision either to destroy the equipment or render it inoperative. Based on this decision, orders are issued which cover the desired extent of destruction. Whatever method of demolition is employed, it is essential to destroy the same vital parts of all generator sets and all corresponding repair parts.

59. Demolition To Render Generator Set Inoperative

a. Demolition by Mechanical Means. Using an axe, sledge hammer, pick, pick-mattock, or other tools available, punch holes in the fuel tank and inflict severe damage to such items as the generator, control panel. carburetor, and engine.

b. Demolition by Misuse. Add sand to the oil in the engine base and throw sand and metal filings into the generator. Run the engine until the generator set fails.

60. Demolition by Explosives or Weapons' Fire

a. Demolition by Explosives. Place as many of the following charges (fig. 20) as the situation permits and detonate them simultaneously with detonating cord and a suitable detonator.

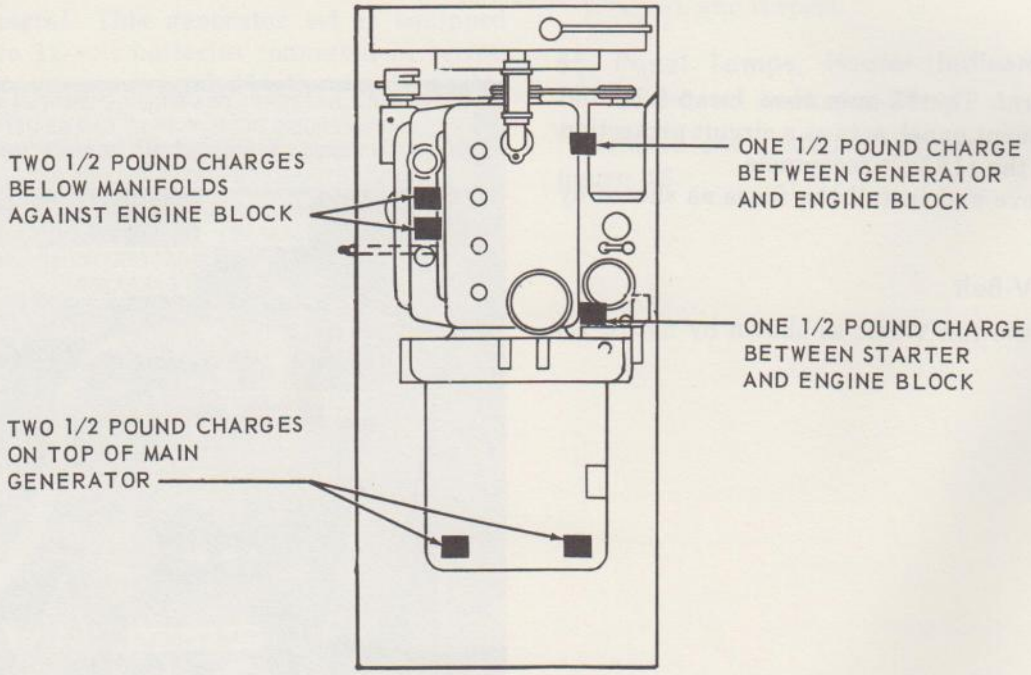


Figure 20. Placement of charges.

b. Demolition by Weapons' Fire. Fire on the generator set with the heaviest suitable weapons available.

61. Other Demolition Methods

a. Scattering and Concealment. Remove all easily accessible parts such as the air cleaner, carburetor, and generator brushes and scatter them through dense foliage, bury them in dirt and sand, or throw them in a lake, river, stream, or other body of water.

b. Burning. Pack rags, clothing, or canvas under and around the engine and generator. Saturate this packing with gasoline, oil, or diesel fuel and ignite.

c. Submersion. Knock the spark plug base from the engine with any convenient tool and completely submerge the generator set in a body of water to provide water damage and concealment. Salt water will do greater damage to metal parts than fresh water.

62. Training

All operators should receive thorough training in the destruction of the generator set. Refer to FM 5–25. Simulated destruction, using all the methods listed above, should be included in the operator training program. It must be emphasized in training, that demolition operations are usually necessitated by critical situations when time available for carrying out destruction is limited. For this reason it is necessary that operators be thoroughly familiar with all methods of destruction of equipment and be able to carry out demolition instructions without reference to this or any other manual.

APPENDIX I

REFERENCES

1. Dictionaries of Terms and Abbreviations

AR 320–5	Dictionary of United States Army Terms.
AR 320–50	Authorized Abbreviations and Brevity Codes.

2. Fire Protection

TM 5–687	Repairs and Utilities: Fire Protection Equipment and Appliances; Inspections, Operations, and Preventive Maintenance.
TM 9–1799	Ordnance Maintenance: Fire Extinguishers.

3. Lubrication

LO 5–6115–269–20	Generator Set, Gasoline Engine: 10 Kw, Ac, 120 V, 1 and 3 Phase, 120/240 V, Single Phase 120/208 V, 3 Phase, 60 Cycle, Skid Mtd (Hol-Gar Model CE106AC/WK9) W/Continental Engine Model FS–162–6065.

4. Painting

TM 9–2851	Painting Instructions for Field Use.

5. Preventive Maintenance

AR 700–38	Unsatisfactory Equipment Report.
AR 750–5	Maintenance Responsibilities and Shop Operation.
TM ENG 347	Winterization Techniques for Engineer Equipment.
TM 5–505	Maintenance of Engineer Equipment.

6. Publication Indexes

DA Pam 310–2	Index of Blank Forms.
DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.

7. Supply Publications

SM 10–1–C4–1	Petroleum, Petroleum-Base Products, and Related Material.

8. Training Aids

FM 5–25	Explosives and Demolition.
FM 21–5	Military Training.
FM 21–6	Techniques of Military Instruction.
FM 21–30	Military Symbols.

APPENDIX II

BASIC ISSUE ITEMS

Section I. INTRODUCTION

1. General

This appendix lists the accessories, tools, and publications required in 1st echelon maintenance and operation, initially issued with, or authorized for the generator set.

2. Explanation of Columns

a. Source Codes. The information provided in each column is as follows:

(1) *Technical services.* The basic number of the technical service assigned supply responsibility for the item is shown. Those spaces with no number shown are Corps of Engineers supply responsibility. Other technical service basic numbers are—

9—Ordnance Corps
10—Quartermaster Corps
11—Signal Corps
12—Adjutant General's Corps

(2) *Source.* The selection status and method of supply are indicated by the following code symbols:

(*a*) P—applied to repair parts which are high mortality parts; procured by technical services, stocked in and supplied from the technical service depot system; and authorized for use at indicated maintenance echelons.

(*b*) P1—applied to repair parts which are low mortality parts; procured by technical services, stocked only in and supplied from technical service key depots, and authorized for installation at indicated maintenance echelons.

(*c*) M—applied to repair parts which are not procured or stocked but are to be manufactured by using units at indicated maintenance echelons.

(*d*) X2—applied to repair parts which are not stocked. The indicated maintenance echelon requiring such repair parts will attempt to obtain from salvage; if not obtainable from salvage, such repair parts will be requisitioned with supporting justification through normal supply channels.

(3) *Maintenance.* The lowest maintenance echelon authorized to use, stock, install, or manufacture the part is indicated by the following code symbol:

O—Organizational Maintenance (1st and 2d Echelons)

b. Federal Stock Numbers. When a Federal stock number is available for a part, it will be shown in this column, and used for requisitioning purposes.

c. Description.

(1) The item name and a brief description of the part are shown.

(2) A five-digit Federal supply code for manufacturers and/or other technical service is shown in parentheses followed by the manufacturer's part number. This number will be used for requisitioning purposes when no Federal stock number is indicated in the Federal stock number column.
Example: (08645) 86453.

(3) The letters GE, shown in parentheses immediately following the description, indicate General Engineer supply responsibility for the part.

d. Unit of Issue. Where no abbreviation is shown in this column, the unit of issue is "each."

e. Expendability. Those items classified as nonexpendable are indicated by letters NX. Items not indicated by NX are expendable.

f. Quantity Authorized. This column lists the quantities of repair parts, accessories, tools, or publications authorized for issue to the equipment operator or crew as required.

g. Quantity Issued With Equipment. This column lists the quantities of repair parts, accessories, tools, or publications that are initially issued with each item of equipment. Those indicated by an asterisk are to be requisitioned through normal supply channels as required.

h. Illustrations. This column is subdivided into two columns which provide the following information:

(1) *Figure number.* Provides the identifying number of the illustration.

(2) *Item number.* Provides the referenced number for the part shown in the illustration.

3. Federal Supply Code for Manufacturers

73239—Hol-Gar Mfg. Corp.

4. Comments and Suggestions

Suggestions and recommendations for changes to the basic issue items list will be submitted on DA Form 2028 to the Commanding General, U.S. Army Engineer Maintenance Center, Corps of Engineers, ATTN: EMCDM, P. O. Box 119, Columbus 16, Ohio. Direct communication is authorized.

GPO 811-560-3

Section II. BASIC ISSUE ITEMS LIST

Source codes				Federal stock No.	Description	Unit of issue	Expendability	Quantity authorized	Quantity issued with Equipment	Illustration	
Technical service	Source	Maintenance	Recoverability							Figure No.	Item No.
					GROUP 01—ENGINE						
					0111.1—HAND CRANKING DEVICES						
	X2	0		2990–374–4103	CRANK, HAND			1	1		
					GROUP 03 FUEL SYSTEM						
					0306—TANKS, LINES, FITTINGS						
	P	0			ADAPTER, AUXILIARY FUEL HOSE (73239) H15668.			1	1		
	P	0			HOSE, AUXILIARY FUEL (73239) B13200E6142			2	2		
					GROUP 04—EXHAUST SYSTEM						
					0401—MUFFLER AND PIPES						
	X2	0			TUBE, EXHAUST EXTENSION (73239) A13200E6136.			1	1		
					GROUP 06—ELECTRICAL SYSTEM (ENGINE AND VEHICULAR)						
					0608—MISCELLANEOUS ITEMS						
	X2	0		5935–258–9156	CONNECTOR, BATTERY-CHARGING RECEPTACLE.			1	1		
					0612—BATTERIES						
11	P	0		6140–057–2554	BATTERY, STORAGE: 6 cell, 12 v		NX	2	2		
9	P	0		6810–249–9354	SULPHURIC ACID ELECTROLYTE	GAL		2	2		
					GROUP 26—ACCESSORIES, PUBLICATIONS, TEST EQUIPMENT, AND TOOLS						
					2602.1—ACCESSORIES						
10	P	0		7520–559–9618	CASE, MAINTENANCE AND OPERATIONAL MANUALS: cotton duck, water repellent, mildew resistant.			1	1		
	P1	0		5975–642–8937	ROD, GROUND: 9 ft lg, ⅝ in. dia cone point, 3 sections (GE).			1	(*)		
	P1	0		5975–243–5861	CLAMP, ELECTRICAL: ground rod, ½ to 1 in. id.			1	(*)		
	M	0			WIRE, ELECTRICAL: Manufacture from:						
	P	0		6145–189–6695	WIRE, ELECTRICAL: No. 6 AWG (10 ft required (GE).	FT			(*)		
					2602.2—COMMON TOOLS			1	(*)		

Source codes				Federal stock No.	Description	Unit of issue	Expendability	Quantity authorized	Quantity issued with Equipment	Illustration	
Technical service	Source	Maintenance	Recoverability							Figure No.	Item No.
10	P	0		5120–278–1283	SCREWDRIVER, FLAT TIP: plastic handle, flared tip, 5/16 in. w, 6 in. lg blade.			1	(*)		
10	P	0		5120–264–3796	WRENCH, OPEN END, ADJUSTABLE: single head, 0 to 1-5/16 in. jaw opening, 12 in. lg.			1	(*)		
10	P	0		5120–223–7396	PLIERS, SLIP-JOINT: straight nose, w/cutter, 6 in. lg.			2	2		
					2602.4—PUBLICATIONS						
12					DEPARTMENT OF THE ARMY OPERATOR'S MANUAL TM 5–6115–269–10.			1	1		
12					DEPARTMENT OF THE ARMY LUBRICATION ORDER LO 5–6115–269–20.			1	1		
					GROUP 42–ELECTRICAL EQUIPMENT, TRANSMISSION AND DISTRIBUTION						
					4214—MISCELLANEOUS WIRING; FITTINGS						
	X2	0			CABLE ASSEMBLY, REMOTE CONTROL (73239) HI6785.			1	1		
					GROUP 76—FIRE FIGHTING EQUIPMENT						
					7603—FIRE EXTINGUISHERS						
	P1	0		4210–288–8269	EXTINGUISHER, FIRE; VAPORIZING LIQUID: ¼ gal capacity, w/wall bracket (GE).		See	Note			
	P1	0		4210–555–8837	EXTINGUISHER, FIRE MONOBROMOTRIFLUOROMETHANE: charged, hand-shatterable cylinder, penetrating seal valve, stored pressure, w/bracket, 2.75 lb (Halcon 1301) Mil-Spec E52031 (GE).			1	1		
					Note. Requisition CTC/CO_2 extinguisher until Depot stocks are exhausted.						

INDEX

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For explanation of abbreviations used, see AR 320–50.

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