ROYAL OBSERVER CORPS - POSTS

THE PETROL-ELECTRIC SET (SWANN/MORRISON)

INTRODUCTION

1. In order to ensure that power supplies for Post lighting and, where appropriate, Post radio, are continuously available, a petrol-electric charging set has been provided at each Post.

DESCRIPTION

2. The petrol electric set consists of a Villiers four-stroke engine coupled to an alternator, producing direct current by means of a metal rectifier. There is no external voltage regulator, but the output current, indicated by an ammeter on the set, can be regulated by use of the throttle control.

3. The complete unit consists of:

a. 1 petrol-electric set

b. 1 plastic bag to contain the set

c. 1 set of spares, comprising:

(1) 1 spark plug

(2) 3 fuses

d. 1 set of tools, comprising:

(1) 1 spark plug spanner

(2) 1 screwdriver

e. 1 accessory kit, comprising:

(1) 1 Handbook

(2) 2 heavy duty cables

(3) 1 set of battery terminal adaptors

(4) 1 petrol carrier

(5) 1 funnel

(6) 1 engine running log card

STORAGE

4. When not in use, the petrol-electric set is to be stored in the toilet in the plastic bag provided. The heavy duty cables (coiled), the petrol carrier and the funnel are also to be stored in the toilet.

5. Tools are to be kept in the monitoring room, together with the spare spark plug and fuses (in a small plastic bag) and the bottle of distilled, de-mineralised or de-ionised water.

6. The handbook and engine running log card are to be kept in another plastic bag on the instrument table. The serial number of the petrol-electric set is to be entered on the record card.

"NIFE"/ALCAD BATTERIES - CAPACITY

7. The capacity of the Nife/Alcad battery when fully charged is 55 amp hours (Ah). The current consumption of the:

a. Filament bulb is 0.5 amps. If this bulb is used continuously throughout an 8 hr exercise the loss in charge from the battery will be (8 hrs x 0.5 amp) = 4 Ah leaving a charge in the battery equivalent to (55-4) = 51 Ah. This charge will be sufficient to provide lighting for a further (51/0.5) = 102 hours if the battery was fully charged at the start of the exercise.

b. Fluorescent tube is 0.67 amps. If the tube is used continuously throughout an 8 hr exercise the loss in charge from the battery will be (8 x 0.67) = 5.36 Ah leaving a charge in the battery equivalent to (55-5.36) = 49.64 Ah. This charge will be sufficient to provide lighting for a further (49.64/0.67) = 74 hours if the battery was fully charged at the start of the exercise.

8. It is, therefore, unnecessary to recharge the battery every time the lighting (or the radio) is used in peacetime; during operations, however, all possible economies in the use of the Post lighting should be made.

FREQUENCY OF CHARGE

9. Peacetime:

a. Monthly at Post Site Training:

(1) Non-radio Posts - 2 hours at 12 amps.

(2) Radio Posts - Battery A - 2 hours at 12 amps in Jan, Mar, May, Jul, Sep, Nov.

Radio Posts - Battery B - 2 hours at 12 amps in Feb, Apr, Jun, Aug, Oct, Dec.

b. Exercises:

(1) Non radio Posts - 2 hours at 12 amps on manning up.

(2) Radio Posts - 2 hours at 12 amps, EACH battery on manning up.

c. Radio Working: Should the Post radio be in use during routine charging and the Battery Indication Light glows RED, the second battery will have to be charged regardless of whether it is A or B.

10. During operations:

a. It is obviously not possible to lay down precise times at which Post batteries are to be charged, since the opportunities for recharging will depend upon the operational situation, but the following charging schedule should be adhered to as far as possible at 1000 hours on the days stipulated.

(1) Charge the lighting battery (and the radio battery where appropriate) during the "stand-to" period for 2 hours at 12 amps.

(2) Charge the lighting battery again for 2 hours at 12 amps on each alternate day thereafter if possible; at radio Posts, exchange the recharged lighting battery with the radio battery if the radio has been used since the initial charge at "stand-to" or since the last exchange of batteries.

b. If the battery charging frequency set out above cannot be adhered to and the Post lighting actually goes out, the 2 hour rate of charge is insufficient to recharge the battery fully; in these circumstances, charge the battery for 4 1/2 hours at 12 amps.

NOTE: The Post lighting battery may be recharged with the light in circuit, but the radio battery must NOT be recharged whilst connected to the radio.

PETROL AND OIL SUPPLIES

11. a. Peacetime:

The annual entitlement is based on the charging instructions shown at para 9, ie:

(1) Petrol (2 star)

(a)	Radio Posts	25 litres
(b)	Other Posts	20 litres

(2) Motor Oil (SAE20/30) 1 litre (all Posts)

(3) Distilled, de-mineralised or de-ionised water (500 millilitres).

Limit each purchase of petrol to 4 1/2 litres.

b. Emergency: As soon as the order is given to man the Posts:

(1) Purchase:

(a)	Radio Posts	30 litres petrol
(b)	Other Posts	25 litres petrol
(c)	All Posts	1 litre oil 500 millilitres distilled, de-mineralised or de-ionised water

(2) Ensure that the petrol is delivered into the jerrican(s) set aside and marked for the storage of petrol.

(3) Convey the petrol and other supplies to Post and bury the jerrican(s) containing the petrol (Part E Section 3 paras 9c(1) and (2)).

12. UNDER NO CIRCUMSTANCES IS PETROL TO BE STORED INSIDE THE MONITORING ROOM OR IN THE TOILET OR ENTRANCE HATCHWAY.

PREPARATION FOR CHARGING

13. Prepare battery:

a. Fit terminal adaptors:

(1) Do not remove Post lighting leads from battery.

(2) Determine POSITIVE terminal of battery, identified by a RED washer at the base of the terminal on the battery.

(3) Fit the LARGER adaptor to the POSITIVE terminal.

(4) Fit the SMALLER adaptor to the other (NEGATIVE) terminal (identified by a BLACK washer).

NOTE: Once fitted, leave the adaptors in position until the battery is removed from the Post.

b. Remove the battery vent caps and inspect the level of the electrolyte with the aid of the torch (do not use a naked light).

c. Top up with distilled, de-mineralised or de-ionised water where necessary to bring the level up to approximately one inch above the plates of the cell.

WARNING: THE ELECTROLYTE IN THE BATTERY IS CAUSTIC AND MUST NOT BE ALLOWED TO COME INTO CONTACT WITH THE SKIN OR CLOTHING.

d. Replace vent caps; ensure that the air hole in the top of each cap is unobstructed by dirt.

NOTE: Radio Posts are fitted with a special charging box which allows the batteries to be switched from radio to lighting for charging purposes to prevent possible damage to the radio. If the charging box becomes unserviceable it is important to ensure that the radio battery is disconnected from the radio before charging.

14. Prepare petrol-electric set:

a. Remove petrol-electric set from plastic bag.

b. Hoist the set out of the Post; if this is done by means of a rope only, attach the rope securely to the central cross-bar between the two tubular side members of the frame of the set.

c. CARRY OUT ALL FURTHER PREPARATIONS AND RUNNING OF THE PETROL-ELECTRIC SET OUTSIDE THE POST.

d. Remove earth covering from jerrican and using the funnel pour sufficient petrol into the petrol carrier for the charge required. (The engine will run for approximately one hour on one full tank of petrol, with the throttle adjusted to give a charging rate of 12 amps).

e. Empty contents of petrol carrier into petrol tank using the funnel.

f. Check that the level of the oil in the sump is correct:

(1) By reference to the dipstick; or

(2) By ensuring that the oil level is up to the base of the filler plug if no dipstick is provided.

15. Connect cables:

a. Remove wing nut and washer from the POSITIVE terminal (the large terminal) on the generator.

b. Fit the positive lead (the RED lead, carrying the terminal with the larger hole) to the positive terminal on the generator.

c. Refit the washer and wing nut.

d. Repeat this procedure with the NEGATIVE (smaller) terminal on the generator and the negative (BLACK) lead.

e. Lower free ends of cable down the entrance shaft.

f. Connect charging leads to battery, positive (RED) lead to LARGE terminal first, then negative (BLACK) lead to SMALL terminal.

g. Tighten all nuts finger-tight: do not over-tighten.

h. At Radio Posts the charging lead is fitted with a Niphan plug for connection to the Niphan charging socket in the Post Radio Outlet Box.

i. The charging lead is to be connected to the generator terminals before plugging the other end into the Niphan socket.

WARNING: UNDER NO CIRCUMSTANCES ARE CONNECTIONS TO THE BATTERY TO BE MADE FIRST.

CHARGING

16. Start the engine:

a. Move the ignition switch (located on the fly-wheel casing to the right of the carburettor) to the ON position.

b. Move the choke control on the carburettor to the horizontal ('choke') position.

c. Turn on petrol supply by turning the tap located in the feed pipe between the petrol tank and the carburettor. (Normally the petrol supply is turned ON when the handle of the tap is in line with the petrol feed pipe, but there are exceptions.)

d. Ensure that the unit is level.

e. Steady the unit by placing one hand on the top of the petrol tank.

f. Pull briskly on the starter rope with the other hand; if the engine fails to fire, repeat as necessary.

g. When the engine starts, immediately limit the speed by means of the hand throttle located on the back of the generator casing or on the frame crossbar so as to ensure that, with the battery connected, the needle of the ammeter does not rise above the red mark on the scale (or does not indicate more than 20 amps where there is no red mark).

h. Adjust the running speed further, as necessary, until the ammeter indicates a reading of 12 amps.

i. After a few seconds move the choke control to the vertical position. (It may be necessary to apply the choke for a longer period in cold weather.)

AFTER CHARGING

17. Stop the engine:

a. Turn off the petrol supply by closing the tap in the feed pipe.

b. Allow the carburettor to run dry, after which the engine will stop.

c. Move ignition switch to the OFF position.

18. Disconnect cables:

a. Disconnect cables from battery FIRST.

b. Disconnect cables from generator.

c. Re-coil cables.

19. Prepare equipment for storage:

a. Allow petrol-electric set to cool.

b. When set is cool remove it to a safe distance from the entrance hatch and dispose of any petrol remaining in the tank by opening the drain tap located in the feed pipe at the point where it leaves the petrol tank.

c. Using the funnel, pour any petrol remaining in the petrol carrier back into the jerrican.

d. Replace the jerrican in the hole previously dug, and replace earth covering.

NOTE: In peacetime pour away any petrol remaining in the petrol carrier at a safe distance from the entrance hatch.

e. Close the inlet and exhaust valves by turning the starter pulley in the normal direction of operation of the engine until compression is felt; turn the pulley a further quarter-turn.

f. Lower the set down the entrance hatchway and replace it in the plastic bag; store in toilet.

g. Return cable, petrol carrier and funnel to the Post and store in the toilet.

20. Record engine running:

a. Enter details of engine running time on the log card.

b. Replace the card in the plastic bag.

21. Recheck battery:

a. Remove vent caps and use the torch to inspect level of electrolyte again.

b. Add distilled, de-mineralised or de-ionised water if necessary so as to ensure that the level is approximately one inch above the plates in each cell.

c. Replace vent caps.

NOTE: Occasional overcharging will not harm a NIFE/ALCAD battery but persistent overcharging will cause the battery temperature to rise unnecessarily on each occasion and may eventually cause damage to cells by reduction in the amount of electrolyte.

d. Record details of charge on the charging record card attached to the battery container.

MAINTENANCE

22. Petrol-electric set:

a. Check oil level each time before the set is run and top up if necessary.

b. Drain oil by opening the tap located on the side of the base-plate, and refill with fresh oil to the correct level:

(1) After the first 20 hours of operation from new.

(2) After a further 20 hours of operation.

(3) Thereafter, at intervals of 100 hours of operation.

c. Remove the air filter clipped to the base of the carburettor after every 30 hours of operation:

(1) Wash the filter in paraffin and allow to dry.

(2) Soak the filter in a mixture of one part engine oil to 10 parts of petrol.

(3) Replace filter on base of carburettor.

d. Examine the spark plug after every 100 hours of operation; clean and reset spark gap to 0.028".

e. Ensure that cooling fins on the engine are kept clean and free of debris.

f. Record routine maintenance on the back of the engine running log card in the space provided.

g. In peacetime inform the Group Headquarters immediately of any faults which cannot be cleared by routine maintenance, or by replacement of the spark plug or fuse; ensure that the engine running log is returned with the set if so instructed.

23. NIFE/ALCAD batteries:

a. Charge battery regularly in peacetime in accordance with para 9.

b. Examine level of electrolyte frequently and keep topped up with distilled, de-mineralised or de-ionised water to 1" above the plates of each cell.

c. Keep terminals and adaptors, insulators, connecting strips and outsides of cells clean and dry.

d. Inspect terminals frequently and apply a light coating of mineral jelly, (eg "Vaseline") to prevent corrosion.

e. Keep wooden battery crate clean and dry.

f. Ensure that battery does not become fully discharged; if this happens, recharge as soon as possible.

WARNING: USE ONLY DISTILLED, DE-MINERALISED OR DE-IONISED WATER WHEN TOPPING UP; ADD NO OTHER LIQUID OF ANY KIND.

FAULT FINDING

24. Engine starts to fail:

a. Check that petrol is ON.

b. Check that ignition is ON.

c. Remove spark plug and lay it on cylinder head with the lead connected; operate starting rope and check that spark is visible at the plug points.

d. If not, clean plug and check gap; repeat the test at c. above.

e. If this test is still negative and no other obvious reason for failure is apparent, inform Group Headquarters and request instructions.

25. Engine runs, but no generator output:

a. Disconnect all equipment from set.

b. Check the fuse mounted in the holder on the generator casing.

c. If the fuse has blown, check the battery for any obvious faults (eg metal objects on top of cells).

d. If any other fault is found of an electrical nature, do not attempt to clear it, but inform Group Headquarters.

e. If no fault can be found with the battery, change the fuse.

f. Start the engine again; if there is still no generator output, inform Group Headquarters.

g. If the fuse has not blown, inform Group Headquarters and do not attempt any further investigation.

INSPECTION

26. In peacetime, Group Officers will carry out checks at regular intervals to ensure that petrol-electric sets and batteries are being maintained in good condition, and that batteries have been charged at the prescribed times.

27. The results of these checks are to be reported to Group Headquarters.

ROYAL OBSERVER CORPS - POSTS

THE PETROL-ELECTRIC GENERATOR

(YAMAHA EF 1000)

INTRODUCTION

1. In order to ensure that power supplies for Post lighting, and where appropriate, Post radio, are continuously available a Petrol-Electric Generator has been provided at each Post.

DESCRIPTION

2. The Petrol-Electric Generator set consists of a Yamaha four stroke engine with integral generator. This unit produces 240 volts AC for cooking/heating, and 12 volts DC for battery charging. There is no external voltage regulator and the generator is a constant speed, constant output power supply. The main external features of the Generator are shown in Fig 1.

3. The complete unit consists of:

a. 1 Petrol Generator.

b. 1 Spark plug.

c. 1 Plug spanner/screwdriver.

d. 1 Accessory kit, comprising:

(1) Handbook.

(2) 2 sets 240v cables (cooking/heating).

(3) 1 Set of 12v cable (battery charging).

(4) 1 Set of terminal adaptors per battery.

(5) 1 Petrol carrier.

(6) 1 Funnel.

(7) 1 Engine Running Log.

NOTE: The plug spanner/screwdriver is held in a compartment in the base of the generator.

STORAGE

4. When not in use the generator, cables, petrol carrier and funnel are to be stored in the toilet.

5. The Handbook and Engine Running Log are to be kept within a protective cover on the instrument table. A spare spark plug and a bottle of distilled or de-ionised water are also to be kept within the post.

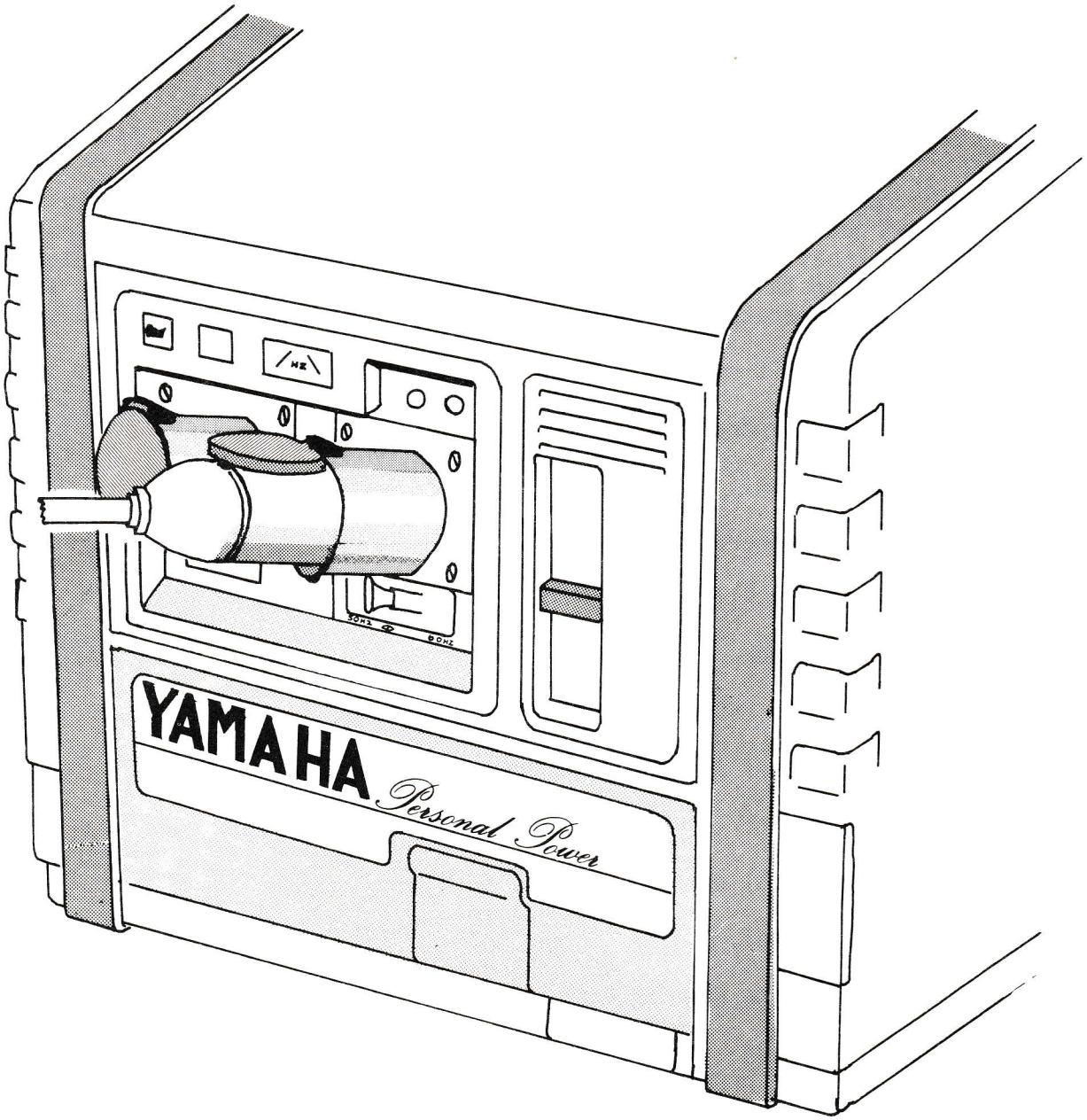

Fig 1
The Petrol Generator Electric

NIFE/ALCAD BATTERIES - CAPACITY

6. The capacity of the Nife/Alcad Battery is 55 amp hours (Ah) when fully charged. The current consumption of the:

a. Filament bulb is 0.5 amps. If this bulb is used continuously throughout an 8 hr exercise the loss in charge from the battery will be (8 hrs x 0.5 amp) = 4 Ah leaving a charge in the battery equivalent to (55-4) = 51 Ah. This charge will be sufficient to provide lighting for a further (51/0.5) = 102 hours if the battery was fully charged at the start of the exercise.

b. Fluorescent tube is 0.67 amps. If the tube is used continuously throughout an 8 hr exercise the loss in charge from the battery will be (8 x 0.67) = 5.36 Ah leaving a charge in the battery equivalent to (55-5.36) = 49.64 Ah. This charge will be sufficient to provide lighting for a further (49.64/0.67) = 74 hours if the battery was fully charged at the start of the exercise.

7. It is therefore unnecessary to charge the battery every time the lighting (or radio) is used in peacetime. During operations, however, all possible economies in the use of post lighting should be made.

8. Peacetime:

a. Monthly and Post Site training:

(1) Non-radio Posts - 2 hrs.

(2) Radio Posts - Battery A - 2 hrs in Jan, Mar, May, Jul, Sep and Nov.

(3) Radio Posts - Battery B - 2 hrs in Feb, Apr, Jun, Aug, Oct and Dec.

b. Exercises:

(1) Non-radio Posts - 2 hrs on manning up.

(2) Radio Posts - 2 hrs EACH battery on manning up.

c. Radio Working: Should the Post radio be in use during routine charging and the Battery Indication Light glows red, the second battery will have to be charged regardless of whether it is A or B.

9. During Operations:

a. It is obviously not possible to lay down precise times at which Post batteries are to be charged, since the opportunities for recharging will depend upon the operational situation, but the following charging schedule should be adhered to as far as possible.

(1) Charge the lighting battery (and where appropriate the radio battery) during the "Stand-To" period for 2 hours.

(2) Charge the lighting battery again for 2 hours on each alternate day thereafter if possible; at radio Posts exchange the recharged lighting battery with the radio battery if the radio has been used since the initial charge at "Stand-To" or since the last exchange of batteries.

b. If the battery charging frequency set out above cannot be adhered to and the post lighting actually goes out, the 2 hour charge is insufficient to recharge the battery fully. In these circumstances the battery should be charged for 5 1/2 hrs.

NOTE: The Post lighting battery may be recharged with the light in circuit, but the radio battery MUST NOT be recharged whilst connected to the radio.

PETROL AND OIL SUPPLIES

10. a. Peacetime:

The annual entitlement is based on the charging instructions shown at para 8 ie:

(1) Petrol (4 star or Unleaded).

(a) Radio Posts 25 litres

(b) Other Posts 20 litres

(2) Motor Oil (SAE20/30) 1 litre (all Posts)

(3) Distilled, de-mineralised or de-ionised water.

Limit each purchase of petrol to 4 1/2 litres.

b. Emergency: As soon as the order is given to man the Posts:

(1) Purchase:

(a) Radio Posts 30 litres petrol

(b) Other Posts 25 litres petrol

(c) All Posts 1 litre oil
500 millilitres distilled, de-mineralised or de-ionised water

(2) Ensure that the petrol is delivered to the jerrican(s) set aside and marked for the storage of petrol.

(3) Convey the petrol and other supplies to Post and bury the jerrican(s) containing the petrol.

NOTE: UNDER NO CIRCUMSTANCES IS PETROL TO BE STORED INSIDE THE MONITORING ROOM OR IN THE TOILET OR ENTRANCE HATCHWAY.

PREPARATION FOR CHARGING

11. Prepare battery:

a. Fit terminal adaptors:

(1) Do not remove Post lighting leads from battery.

(2) Determine POSITIVE terminal of battery, identified by a RED washer at the base of the terminal on the battery.

(3) Fit the LARGER adaptor to the POSITIVE termimal.

(4) Fit the SMALLER adaptor to the other (NEGATIVE) terminal (identified by a BLACK washer).

NOTE: Once fitted, leave the adaptors in position until the battery is removed from the Post.

b. Remove the battery vent caps and inspect the level of the electrolyte with the aid of the torch (do not use a naked light).

c. Top up with distilled, de-mineralised or de-ionised water where necessary to bring the level up to approximately one inch above the plates of the cell.

WARNING: THE ELECTROLYTE IN THE BATTERY IS CORROSIVE AND MUST NOT BE ALLOWED TO COME INTO CONTACT WITH THE SKIN OR CLOTHING.

d. Replace vent caps; ensure that the air hole in the top of each cap is unobstructed by dirt.

NOTE: Radio Posts are fitted with a special charging box which allows the batteries to be switched from radio to lighting for charging purposes to prevent possible damage to the radio. If the charging box becomes unserviceable it is important to ensure that the radio battery is disconnected from the radio before charging.

12. Prepare the Generator:

a. Hoist the set out of the Post; if this is done by means of a rope only, attach the rope securely to the carrying handle.

NOTE: ALL FURTHER PREPARATIONS AND THE RUNNING OF THE GENERATOR ARE TO TAKE PLACE OUTSIDE THE POST.

b. Using the funnel pour only sufficient petrol into the fuel tank for the charge required. (The fuel tank holds 3.8 litres (0.8 galls) and the generator will run for 7 hrs on one full tank).

NOTE: DO NOT FILL THE FUEL TANK COMPLETELY AS PETROL EXPANDS WHEN HEATED AND MAY OVERFLOW.

c. Replace fuel cap.

d. Replace petrol can in storage pit.

13. Start the Generator.

a. Ensure the generator is sited on level ground.

b. Ensure that all electrical leads are disconnected prior to starting.

c. Ensure that the Frequency Selector Switch is set at 50 Hz.

d. Set the Control Lever to the "1/1" position.

NOTE: If the engine is warm set the Control Lever to "ON".

e. Steadying the generator with one hand slowly pull the Starting Handle until the mechanism is engaged. (This is indicated by an increase in resistance).

f. Firmly pull the Starting Handle the remainder of its travel and the engine will start.

g. Without releasing the Starting Handle allow it to slowly return to its original position.

h. After the engine has started slowly move the Control Lever to the "ON" position. If the engine stops repeat the operation from 14 d above.

14. Connecting the Load.

a. Battery.

(1) After starting the generator the battery cables should be connected to the battery. The RED cable to the large (+) terminal and the BLACK cable to the small (-) terminal.

b. Check that the Generator Pilot Light is on and that the frequency Selector Switch is set to 50Hz.

c. Insert the moulded plug on the charging leads into the DC outlet socket on the front of the Generator.

NOTE: It may be necessary to wrap the cables around the carrying handle several times to minimise strain on the DC outlet socket.

AFTER CHARGING

15. After the planned charging period:

a. The DC Charging Lead should be disconnected and coiled.

b. The Charging Lead should be disconnected from the battery, and the cables coiled.

c. The engine should be allowed to run until the fuel tank is dry and it stops.

d. The Petrol Generator should be allowed to cool then returned to its storage position.

e. The details of the engine running time are to be entered on the Engine Running Log.

f. The battery electrolyte level is to be checked, restored if necessary, and the details of charge entered in the Battery Record Card.

NOTE: Should it be required to stop the engine prior to the end of the planned charging period the Charging Lead should be disconnected and the Control Lever moved to the "STOP" position. The engine should subsequently be re-started and run until the fuel tank is dry as per para 15 c above.

MAINTENANCE

16. Petrol Electric Generator.

Maintenance of the Petrol Electric Generator should be carried out in accordance with the tables Fig 2, and by reference to the Manufactures Handbook held by the Post.

17. NIFE/ALCAD batteries:

a. Charge battery regularly in peacetime in accordance with para 8.

b. Examine level of electrolyte frequently and keep topped up with distilled, de-mineralised or de-ionised water to 1" above the plates of each cell.

c. Keep terminals and adaptors, insulators, connecting strips and outsides of cells clean and dry.

d. Inspect terminals frequently and apply a light coating of mineral jelly, (eg "Vaseline") to prevent corrosion.

e. Keep wooden battery crate clean and dry.

f. Ensure that battery does not become fully discharged; if this happens, recharge as soon as possible.

WARNING: USE ONLY DISTILLED, DE-MINERALISED OR DE-IONISED WATER WHEN TOPPING UP, ADD NO OTHER LIQUID OF ANY KIND.

FAULT FINDING

18. Engine Fails to Start:

a. Check oil level. If the level is low the Oil Warning Light on the Generator will be illuminated - Replenish oil as necessary.

b. Check spark plug - Clean or Replace.

c. Check fuel level - add fuel if necessary.

NOTE: If fault cannot be located contact Group Headquartes.

MAINTENANCE SCHEDULE

Regular maintenance is most important for the best performance and safe operation of this generator.

Portion	Check item		Pre-operation check (daily)	First month or first 20HRS	Every 3 months or every 50HRS	Every 6 months or every 100HRS	Every year every 300HRS	Remarks
Control system	Control lever (fuel cock, choke), switches, operation		●					
	Recoil starter operation		●					
Engine	Engine condition, starting, operation, noise)		●					
	Exhaust gases (leakage/color)		●					
	Air filter element	Inspection			●			
		Clean			●			
	Looseness of screws, bolts and nuts		●					
	Engine oil	Inspection	●					
		Replace		●		●		
	Valve clearance						● *	Adjust if necessary
	Decarbonizing						● *	Should be serviced more frequently if necessary
Fuel system	Fuel level		●					
	Fuel leakage		●					
	Fuel tank strainer		●					Clean if necessary
	Fuel pipes breakage				●			Replace if necessary
Electrical system	Clean spark plug electrode				●			Adjust spark gap or replace spark plug if necessary
Generator	AC/DC plug with receptacle connection		●					
	Pilot lamp, meter		●					Replace if necessary

Fig 2

*Refer to Group Headquarters

19. Engine Stops during use.

a. Disconnect all cables.

b. Check oil level. If the level is low the Oil Warning Light on the Generator will be illuminated - Replenish oil as necessary.

c. Check Spark Plug - Clean and Replace.

d. Check fuel level - add fuel if necessary.

e. Start engine and re-connect cables.

NOTE: If engine cannot be restarted contact Group Headquarters.

20. No power output from Generator.

a. Check the Pilot Light on the front of the Generator is illuminated.

b. Check the AC/DC protectors on the front of the Generator. Disconnect charging cables stop engine, check cables and connections, and ensure the load on the generator is not excessive. Restore AC/DC Protector by pressing in, then restart the engine and reconnect cables. If Protectors activate again action as per para 15 c above and contact Group Headquarters.

SAFETY

21. In addition to the above the following precautions must be taken:

a. Petrol must not be stored within the Post.

b. The Generator must always be refuelled and used outside the Post.

c. The Frequency Selector Switch must always be in the 50 Hz position.

d. The Generator must never be used in heavy rain or snow.

e. When in use areas of the Generator become hot, (see Manufacturers Handbook) and should not be touched.

f. The Generator must never be refuelled whilst running. Any fuel spilt on the casing must be wiped off prior to starting the engine.

g. Never connect or disconnect cables from the Generator when the engine is not running.

h. Do not use the Generator for purposes other than those described in the Manufactures Handbook.

i. Read the Manufacturers Handbook before use.