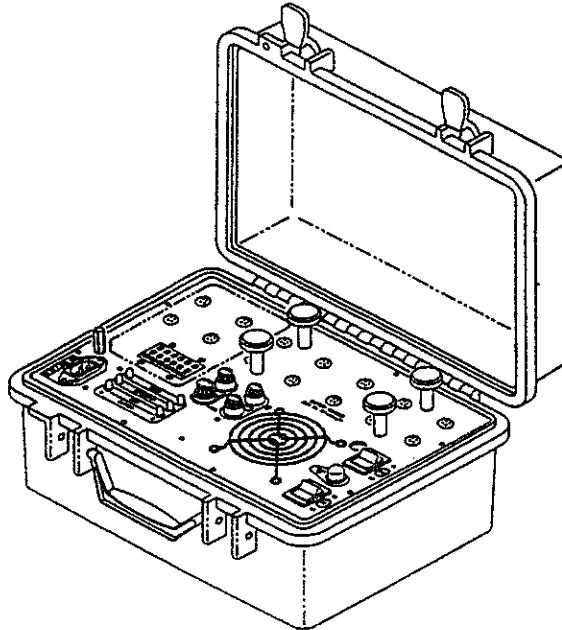


TM 11-6130-489-13&P

TECHNICAL MANUAL

**OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)**



**BATTERY CHARGER PP-8444/U
(NSN 6130-01-427-9604) (EIC: N/A)
and
BATTERY CHARGER PP-8444A/U
(NSN 6130-01-443-0970) (EIC: N/A)**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY
1 SEPTEMBER 1997**



5

SAFETY STEPS TO FOLLOW IF SOMEONE
IS THE VICTIM OF ELECTRICAL SHOCK

1

DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

2

IF POSSIBLE, TURN OFF THE ELECTRICAL POWER

3

IF YOU CANNOT TURN OFF THE ELECTRICAL
POWER, PULL, PUSH OR LIFT THE PERSON TO
SAFETY USING A DRY WOODEN POLE OR A DRY
ROPE OR SOME OTHER INSULATING MATERIAL

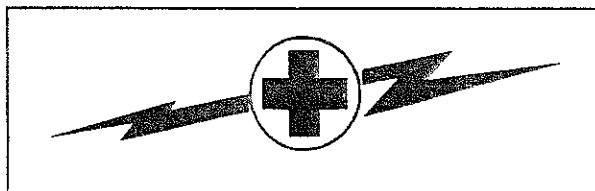
4

SEND FOR HELP AS SOON AS POSSIBLE

5

AFTER THE INJURED PERSON IS FREE OF
CONTACT WITH THE SOURCE OF ELECTRICAL
SHOCK, MOVE THE PERSON A SHORT DISTANCE
AWAY AND IMMEDIATELY START ARTIFICIAL
RESUSCITATION

WARNING



HIGH VOLTAGE
is used in the operation of this equipment

DEATH ON CONTACT
may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technicians are aided by operators, they must be warned about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Be careful not to contact high-voltage connections or 115 volt ac input connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through the body.

Warning: Do not be misled by the term "low voltage." Potentials as low as 50 volts may cause death under adverse conditions.

For Artificial Respiration, refer to FM 21-11.

WARNING

USE OF CHEMICAL CLEANING SOLVENTS

Trichlorotrifluoroethane, trichloroethane and similar chemical solvents will no longer be used for ordinary cleaning of equipment. These substances threaten public health and the environment by destroying ozone in the earth's upper atmosphere. Suitable nonhazardous cleaning materials will be used instead, such as a clean cloth, water and mild detergent.

WARNING

USE OF COMPRESSED AIR

Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent a chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 pounds per square inch gauge (30 psig) and then only with effective chip guarding and personnel protective equipment (industrial safety glasses and full face shield).

CAUTION

**ACID CONTAMINATES NICKEL-CADMIUM, LITHIUM-ION,
NICKEL-METAL HYDRIDE BATTERIES**

Every effort must be made to keep nickel-cadmium, lithium-ion, and nickel-metal hydride batteries as far away as possible from lead-acid batteries because lead-acid batteries contain sulfuric acid. Do Not use the same tools and materials, such as screwdrivers, wrenches, syringes, hydrometers, and gloves for both types of batteries. Any trace of acid or acid fumes will permanently damage nickel-cadmium, lithium-ion, and nickel-metal hydride batteries on contact.

WARNING

NO SMOKING IS PERMITTED NEAR THE CHARGING STATION

Batteries can produce explosive gases during charging or discharge cycles. Never smoke or allow open flames near the charging station.

WARNING

Do not attempt to charge a non-rechargeable lithium battery, BB-590/U, or BB-490/U in the PP-8444/U or PP-8444A/U Battery Charger. It could result in serious injury.

CAUTION

HANDLING CIRCUIT BOARD ASSEMBLIES

Devices such as CMOS, NMOS, VMOS, HMOS, thin-film resistors PMOS, and MOSFET used in many equipments can be damaged by static voltages present in most repair facilities. Most of the components contain internal gate protection circuits that are partially effective, but sound maintenance practice and the cost of equipment failure in time and money dictate careful handling of all electrostatic sensitive components.

The following precautions should be observed when handling all electrostatic sensitive components and units containing such components.

Failure to observe all of these precautions can cause permanent damage to the electrostatic sensitive device. This damage can cause the device to fail immediately or at a later date when exposed to an adverse environment.

STEP 1 Turn off and/or disconnect all power and signal source and loads used with the unit.

STEP 2 Place the unit on grounded conductive work surfaces.

STEP 3 Ground the repair operator using a conductive wrist strap or other device using a 1 megohm series resistor to protect the operator.

STEP 4 Ground any tools (including soldering equipment) that will contact the unit. Contact with the operator's hand provides a sufficient ground for tools that are otherwise electrically isolated.

STEP 5 All electrostatic sensitive replacement components are shipped in conductive foam or tubes and must be stored in the original shipping container until installed.

STEP 6 When these devices and assemblies are removed from the unit, they should be placed on the conductive work surface or in conductive containers.

STEP 7 When not being worked on, wrap disconnected circuit boards in aluminum foil or in plastic bags that have been coated or impregnated with a conductive material.

STEP 8 Do not handle these devices unnecessarily or remove from their packages until actually used or tested.

STEP 9 Static pads do not mount in conductive surfaces. No test equipment is to be placed on static pads. No equipment resting on a static pad is to be plugged into an electrical outlet.

BATTERY CHARGING SMALL FACILITY SAFETY GUIDELINES

Care must be taken to separate Nickel Cadmium, Lithium Ion, and Nickel Metal Hydride batteries from Lead Acid batteries. The PP-8444/U and PP-8444A/U are not programmed for any Lead Acid batteries. Rechargeable batteries must always be separated from non-rechargeable batteries. Never place a non-rechargeable battery in either of the chargers.

When setting up a charging facility for more than one (1) charger in a single area, exhaust ventilation must be provided. The tightness of the facility, the amount of open air space, and the number of chargers will determine whether natural draft ventilation is sufficient or whether forced draft ventilation is required. For example, charging batteries in a tent would merely require opening two (2) or more tent flaps for cross ventilation. On the other hand, charging in a closed small shelter would require forced draft exhaust ventilations. Exhaust ports should always be placed high because Hydrogen gas rises.

Larger facilities should maintain Personal Protective Equipment including goggles, protective gloves, and an apron in case of the unlikely event of having to handle leaking batteries. An eyewash fountain or an eyewash bottle should be available in the vicinity. Lacking these items, provision must be made to access immediate medical assistance.

SPECIAL NOTE: Pre-Condition Your BB-390s!

To get the best BB-390 run times CECOM recommends the following:

1. Fully charge the BB-390 prior to first use. Use the new BB-390 first at a TOC, garrison, or other location that can afford an initial low run time.
2. Prior to the next charge ensure the BB-390 is fully drained in your equipment or via the PP-8448 Discharger NSN: 6130-01-430-3108 and then recharge. Repeat the charge/discharge cycle one additional time.

For further info on Rechargeables visit the CECOM Ft. Monmouth, NJ web site at:

<http://www.monmouth.army.mil/cecom/lrc/lrchq/power/rechargebat.html>

Or email us at brockeld@mail1.monmouth.army.mil or Phone at 732-532-4948

PS: This battery has a self-discharge rate and without use will lose about 1% of its charge per day. Thus.....Ensure a fresh charge to missions?

Technical Manual

No. 11-6130-489-13&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 1 September 1997

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

**BATTERY CHARGER PP-8444/U
(NSN 6130-01-427-9604) (EIC: N/A)
and
BATTERY CHARGER PP-8444A/U
(NSN 6130-01-443-0970) (EIC: N/A)**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail or fax your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual directly to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LEO-D-CS-CFO, Fort Monmouth, New Jersey 07703-5000. The fax number is 732-532-1413, DSN 992-1413. You may also e-mail your recommendations to AMSEL-LC-LEO-PUBS-CHG@cecom3.monmouth.army.mil

In either case a reply will be furnished direct to you.

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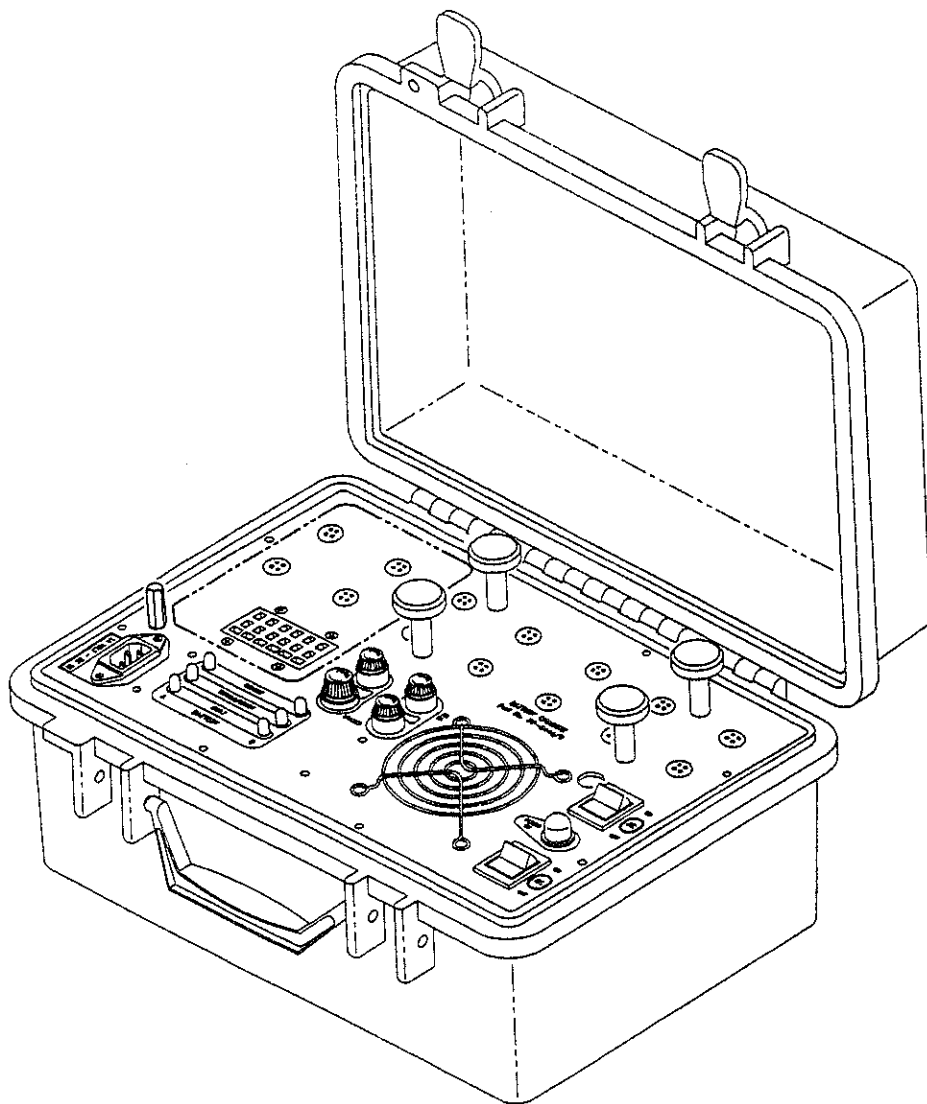


Figure 1-1. Battery Charger PP-8444/U or PP-8444A/U

CHAPTER 1 INTRODUCTION

Section 1. GENERAL INFORMATION

1-1. SCOPE

Universal Portable Battery Charger PP-8444/U or PP-8444A/U, fig. 1-1, are portable chargers used for rapid charging of various types of field equipment batteries. Use this manual for unit and direct support maintenance of the battery charger.

1-2. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS

Refer to the latest issue of DA PAM 25-30 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

1-3. MAINTENANCE FORMS, RECORDS, AND REPORTS

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, as contained in Maintenance Management Update.

b. Reporting of Item and Packaging Discrepancies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2.

c. Transportation Discrepancy Report (TDR) (SF 361). Fill out and forward Transportation Discrepancy Report (TDR) (SF 361) as prescribed in AR 55-38.

1-4. DESTRUCTION OF ARMY ELECTRONICS MATERIEL

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-5. ADMINISTRATIVE STORAGE

Administrative storage of equipment issued to, and used by, Army activities will have preventive maintenance performed in accordance with the Preventive Maintenance Checks and Services (PMCS) charts. When removing the equipment from administrative storage, the PMCS should be used to assure the operational readiness of the equipment.

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LEO-D-CS-CFO, Fort Monmouth, New Jersey 07703-5000. We'll send you a reply.

1-7. NOMENCLATURE CROSS-REFERENCE LIST

<u>Common Name</u>	<u>Official Nomenclature</u>
Battery Charger	Charger, Battery PP-8444/U or PP-8444A/U
24V DC Cable	Cable Assembly, DC J-6362/V
BB-388/U Battery	Battery, Storage BB-388/U
BB-390A/U Battery	Battery, Storage BB-390A/U
BB-503A/U Battery	Battery, Storage BB-503A/U
BB-516A/U Battery	Battery, Storage BB-516A/U
BB-2847/U Battery	Battery, Storage BB-2847/U
BB-388/U Battery Adapter	Adapter, Battery Terminal, J-6357/P
BB-390A/U Battery Adapter	Adapter, Battery Terminal, J-6358/P
BB-503A/U Battery Adapter	Adapter, Battery Terminal, J-6355/P
BB-516A/U Battery Adapter	Adapter, Battery Terminal, J-6356/P
BB-2847/U Battery Adapter	Adapter, Battery Terminal, J-6354/P

Section II. EQUIPMENT DESCRIPTION AND DATA

1-8. DIFFERENCES BETWEEN MODELS

This manual provides coverage for the following models of the battery charger: Charger, Battery PP-8444/U; and Charger, Battery PP-8444A/U. The only difference between these models is Power Supply Circuit Board Assembly A1. The power supply in PP-8444/U units operates on 90 to 125 volts AC; the power supply in PP-8444A/U units operates from 100 to 250 volts AC. The power supplies are NOT interchangeable.

In addition, Battery Charger PP-8444A/U will require a locally-supplied AC adapter, which will vary in accordance with the AC power receptacle available in the country in which the battery charger will be used. In all other respects, both units operate and are maintained in the same manner.

1-9. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

a. Components. The battery charger components are housed in a non-conductive ABS equipment case, as shown in Figure 1-1. The assembled unit is air-tight when the gasketed cover is latched securely and the pressure equalizer relief valve on the bottom of the case is closed.

b. Battery Adapter Assemblies. The battery adapters listed below may be used with the battery charger. Depending on the battery type being charged, the appropriate battery adapter is installed on the panel and connected to the adapter connector. Each battery adapter can accept and simultaneously charge up to two batteries of the same type within a two-hour period; however, BB-2847/U batteries may require an additional 1-1/2 hours (at trickle charge rate) to be fully charged.

<u>Adapter Type</u>	<u>NSN</u>	<u>Description</u>
J-6358/P	5940-01-427-9110	BB-390A/U Adapter (Plate)
J-6357/P	5940-01-427-8601	BB-388/U Adapter (Plate)
J-6356/P	5940-01-427-9183	BB-516A/U Adapter (Plate)
J-6355/P	5940-01-427-9247	BB-503A/U Adapter (Cable)
J-6354/P	5940-01-427-9278	BB-2847/U Adapter (Plate)

c. **Battery Charge Cycles.** Charge and float/trickle cycles are automatically programmed for each of the batteries listed below. Battery status is continuously displayed by panel LED indicators.

<i>Battery Type</i>	<i>NSN</i>	<i>Description</i>
BB-390A/U	6140-01-419-8187	Nickel Metal Hydride
BB-388/U	6140-01-419-8190	Nickel Metal Hydride
BB-516A/U	6140-01-419-8191	Nickel Cadmium
BB-503A/U	6140-01-419-8193	Nickel Cadmium
BB-2847/U	6140-01-419-8194	Lithium Ion

d. **Battery Charger Power Input Voltages.** The battery charger is designed with a dual-voltage supply feature. For AC operation, an integral 5-foot AC power cable can be connected to the local AC supply receptacle; for DC operation (field usage), a separate cable assembly (J-6362/V) is provided for connection to the 24-volt DC source via the battery box NATO slave connector in the vehicle (i.e. HMMWV). Input power selection is accomplished by two power ON/OFF rocker switches on the panel. Both switches are electrically interlocked to assure that only one power source at a time (AC or DC) can be used to operate the charger.

1-10. EQUIPMENT DATA

Dimensions 13.25 in. (337 mm) W x 10.5 in. (267 mm) D x 7 in. (178 mm) H

Weight 10 lbs 12 oz (4.88 kg) uncrated

Power Requirements

AC operation(PP-8444/U) . . 90 to 125 volts AC, single-phase, 60 Hz, 2 amperes; with
. 5 ft. (152 cm) integral three-wire power cord

AC operation(PP-8444A/U) . 100 to 250 volts AC, automatic voltage selection, single-
phase, 47 to 420 Hz, 250 VA max., with 5 ft. (152 cm)
integral three-wire power cord

DC operation 24 volts DC, 8 amperes; with 12 ft (366 cm) DC Cable
Assembly J-6362/V (with integral 15 ampere fuse)

Charging Output Voltage . . . Automatically selected for each battery type

Duty Cycle Continuous

Protective Features Replaceable panel fuses for AC (5A) and DC (10A) input
supplies

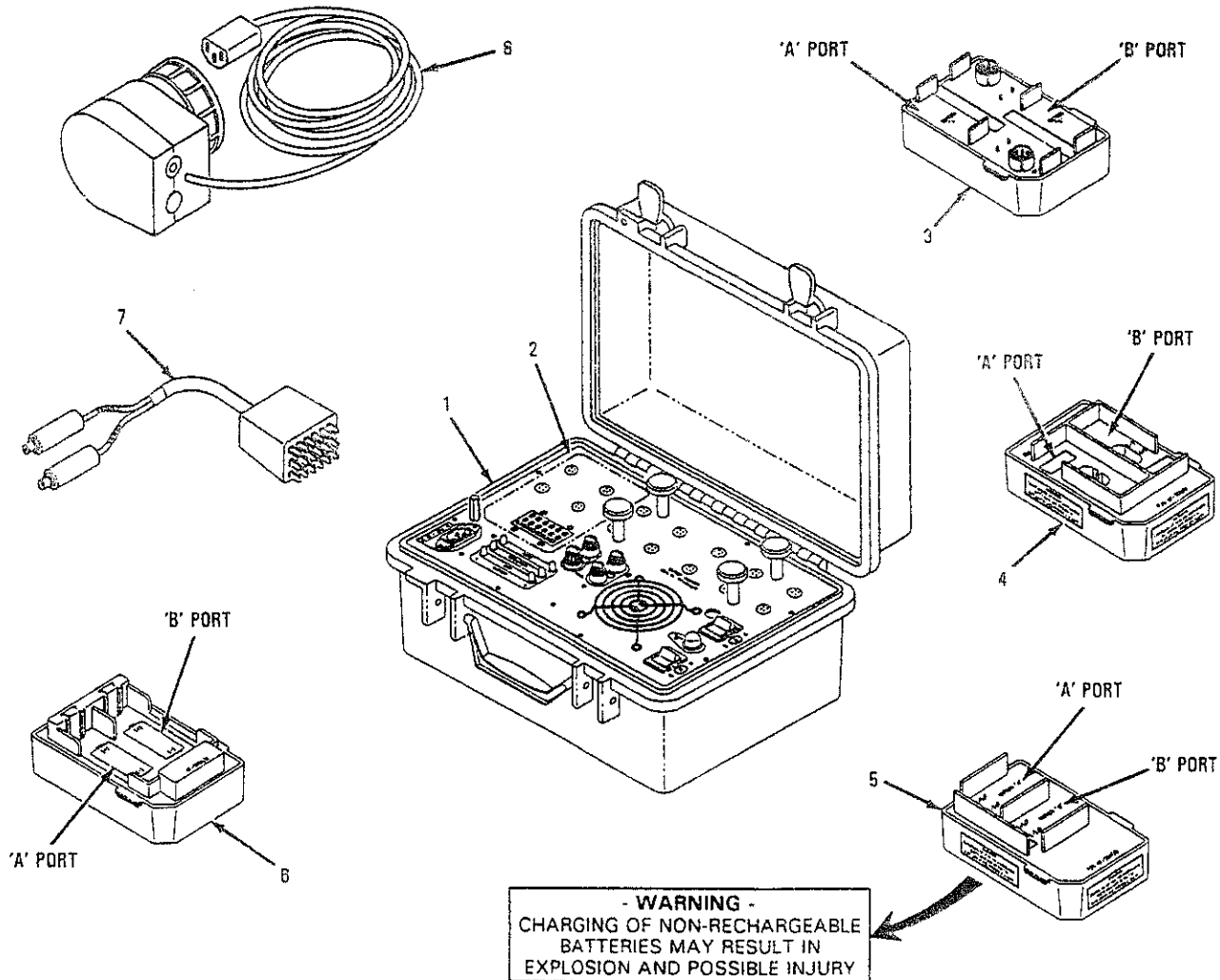
Operating Temp. Range 32°F. (0°C.) to 122°F. (50°C.)

Storage Temp. Range -40°F. (-40°C.) to 158°F. (70°C.)

Battery Adapters Data

<i>Type</i>	<i>Weight</i>	<i>Dimensions</i>
J-6358/P	9.2 oz (262 gm)	3.5 in. (89 mm) L x 5.5 in. (139 mm) W x 1.7 in. (43 mm) H
J-6357/P	5.4 oz (153 gm)	3.5 in. (89 mm) L x 5.5 in. (139 mm) W x 1.7 in. (43 mm) H
J-6356/P	5.3 oz (150 gm)	3.5 in. (89 mm) L x 5.5 in. (139 mm) W x 1.8 in. (46 mm) H
J-6355/P	5.5 oz (156 gm)	18 in. (457 mm) L
J-6354/P	5.3 oz (150 gm)	3.5 in. (89 mm) L x 5.5 in. (139 mm) W x 1.8 in. (46 mm) H

1-11. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS



The battery charger is housed within a portable transit case (1). It consists of:

- Control Panel Assembly (2) - includes all necessary controls and indicators required for equipment operation.

The following additional authorized items (3) through (8) are also used with the battery charger. (See Appendix D.)

- Battery Adapter J-6358/P (3) - installed when charging BB-390A/U battery
- Battery Adapter J-6357/P (4) - installed when charging BB-388/U battery
- Battery Adapter J-6354/P (5) - installed when charging BB-2847/U battery
- Battery Adapter J-6356/P (6) - installed when charging BB-516A/U battery
- Battery Adapter J-6355/P (7) - installed when charging BB-503A/U battery
- 24V DC Cable J-6362/V (8) - allows battery charger to operate from 24V DC power source

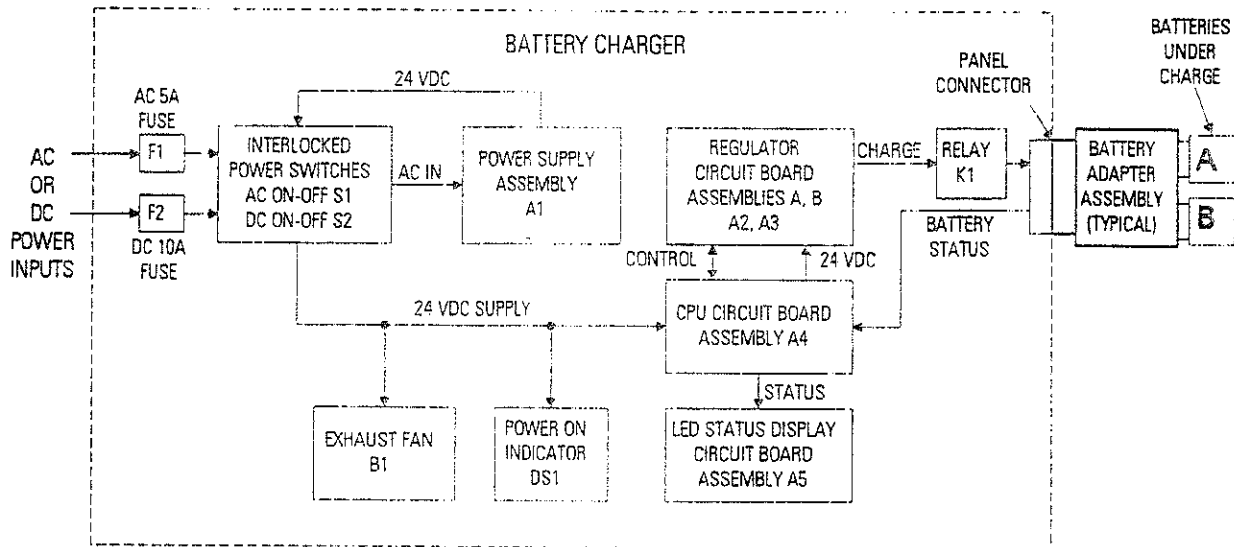


Figure 1-2. Battery Charger, Functional Block Diagram

Section III. PRINCIPLES OF OPERATION

1-12. FUNCTIONAL BLOCK DIAGRAM DESCRIPTION

As shown in Figure 1-2, AC or DC input voltages are separately fused and supplied through interlocked power ON-OFF switches. AC input power is applied via AC fuse F1 and AC power ON-OFF switch S1; DC input power is applied via DC fuse F2 and DC power ON-OFF switch S2. Switches S1 and S2 are electrically interlocked so that only one input supply, AC or DC, can be connected to battery charger circuits. For AC operation, S1 is ON and S2 is OFF; for DC operation, S2 is ON and S1 is OFF.

When the charger is operated from AC power, AC is applied to power supply assembly A1 via fuse F1. The 24 volt DC output from A1 is connected through the interlocked POWER switches and supplied to exhaust fan B1, POWER ON indicator DS1, and CPU circuit board assembly A4.

For DC operation, the external 24 volt DC supply is connected through fuse F2 and interlocked POWER switches directly to the charger circuits.

The 24 volt DC supply is distributed through CPU circuit board A4 to regulator circuit boards A and B, A2 and A3, respectively.

Charge control and switching circuits on regulator circuit boards A and B regulate battery charging at the respective battery adapter ports A and B via control inputs from CPU circuit board assembly A4.

Each of the battery types capable of being charged by the unit is connected to the charging circuits via a respective battery adapter (plate or cable) which can charge two batteries simultaneously. The appropriate battery adapter is installed on the control panel and serves as the electrical interface between the battery or batteries being charged and the charger circuits.

Battery charger control circuits constantly monitor the following battery conditions during the charge cycle, as appropriate, to ensure that the battery is properly being charged:

- a. Temperature (T)
- b. Voltage (V)
- c. Time (t)
- d. Voltage rate change (ΔV)
- e. Temperature rate change ($\Delta T/\Delta t$)

Prior to initiation of a normal charge cycle, a low current is applied to the battery. If battery voltage increases to approximately 1 volt per cell within a timed interval, the battery is considered acceptable for charge. If the battery fails to meet this minimum standard, it is assumed to be unusable or defective and the FAULT indicator (red) lights steadily.

Charger operation during a typical charge sequence is automatic and battery status is shown by panel LED indicators on status display circuit board, A5, as follows:

- a. A timed fast charge cycle brings the battery to approximately 90 to 95% of full charge. The CHARGE (amber) indicator is lit steadily during this cycle.
- b. When fast charging is completed, the CHARGE indicator extinguishes and a timed slow (trickle) charge cycle brings the battery to a fully charged condition. The TRICKLE/READY (green) indicator blinks during this cycle.
- c. When slow charge cycle ends, the TRICKLE/READY indicator (green) stops blinking and lights steadily to advise the operator that the battery is fully charged and should be removed from the charger.

Relay K1 isolates the charger output so that battery charge does not trickle off if the battery (or batteries) remain installed in the adapter and charger power is switched off.

NOTE

All batteries, except the BB-2847/U, will be fully charged within two hours or less. BB-2847/U batteries will be charged to specified limits (20 watt-hours) within two hours; however, greater battery capacity (25 watt-hours) will be assured if the battery remains on trickle charge for an additional 1-1/2 hours.

CHAPTER 2 OPERATING INSTRUCTIONS

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

2-1. CONTROLS, INDICATORS AND CONNECTORS

The controls, indicators and connectors associated with the battery charger are described in table 2-1 and their locations are shown in figure 2-1.

Table 2-1. Controls, Indicators and Connectors.

Item Number	Controls, indicators and connectors	Function
1	AC ON-OFF switch	Turns battery charger AC supply on or off.
2	POWER ON indicator	Lights when power is applied to charger circuits.
3	DC ON-OFF switch	Turns battery charger DC supply on or off.
4	B FAULT indicator	Red LED lights if battery B is defective or will not accept charge.
5	B TRICKLE/READY indicator	Green LED blinks while battery B is being slow-charged (TRICKLE); and lights steadily when battery is fully charged (READY) and ready to be removed for use.
6	B CHARGE indicator	Amber LED lights while battery B is being fast-charged.
7	A FAULT indicator	Red LED lights if battery A is defective or will not accept charge.
8	A TRICKLE/READY indicator	Green LED blinks while battery A is being slow-charged (TRICKLE); and lights steadily when battery is fully charged (READY) and ready to be removed for use.
9	A CHARGE indicator	Amber LED lights while battery A is being fast-charged.
10	24 VOLT DC IN connector	Input connection for 24 VDC cable assembly.
11	Battery adapter connector	Provides interface connection for battery adapter.

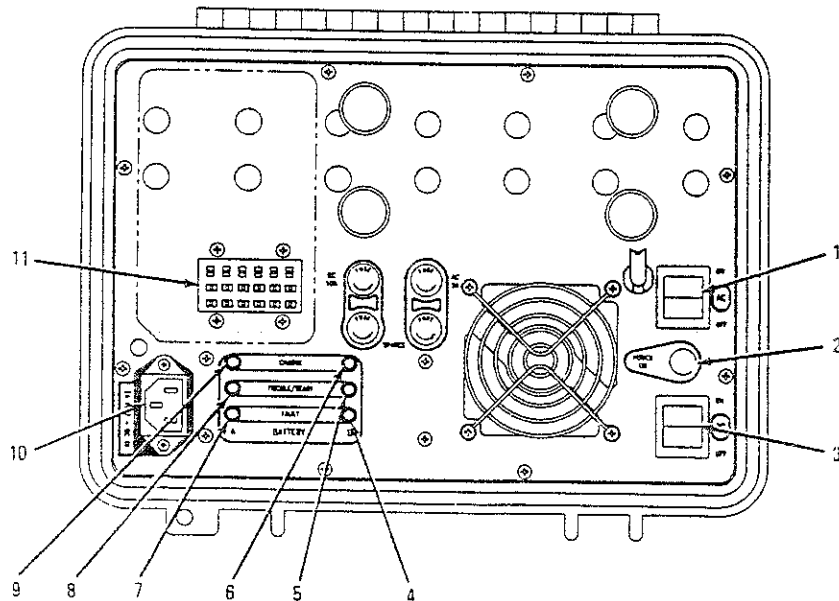


Figure 2-1. Battery Charger Controls, Indicators and Connectors

Section II. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (OPMCS)

2-2. ROUTINE SERVICES

Routine services are a collection of checks and observations performed by the operator at all times. The following should be performed as necessary:

- Clean
- Dust
- Check for cut or frayed cables
- Check for dented, bent, or broken components
- Cover unused receptacles
- Check for loose connectors
- Check that fasteners are secure
- Check for damaged panel controls and indicators
- Check for completeness of equipment
- Check that 5A and 10A fuses are installed in SPARE fuseholders
- Check for corrosion
- Clean filter element
- Check that pressure relief valve screw is in place

Section III. OPERATION UNDER USUAL CONDITIONS

2-3. ASSEMBLY AND PREPARATION FOR USE

a. Place unit on a level, stable work surface. Unscrew pressure equalizing valve (on bottom of case) in a counter-clockwise direction about two full turns.

b. Unfasten cover latches, and open cover.

2-4. OPERATING PROCEDURES

CAUTION

Battery Charger PP-8444/U is designed to operate on AC supply voltages in the range of 90 to 125 volts AC; Battery Charger PP-8444A/U is designed to operate on AC supply voltages in the range of 100 to 250 volts AC.
BE SURE TO USE CORRECT SUPPLY VOLTAGES OR DAMAGE MAY OCCUR!

CAUTION

Do NOT energize the PP-8444/U or PP-8444A/U Battery Charger 24 VDC input with a 115VAC power connector. This will result in equipment damage.

a. *Preliminary Setup Procedures.* Connect the battery charger to the AC or DC power source and prepare the unit for battery charging as follows:

Step 1. Set AC and DC power ON-OFF switches, figure 2-1, to OFF position.

Step 2. *For operation on AC power:* Connect AC power cord to AC power source and set AC power ON-OFF switch to ON position (DC power ON-OFF switch *must* be in OFF position). Observe that POWER ON indicator lights, fan operates, and all three pair of LED status indicators (red, green, amber) blink briefly when power is first applied. Use locally-supplied adapter for PP-8444A/U AC operation.

Step 3. *For operation on DC power:* Connect DC cable J-6362/V between battery charger 24 VOLT DC IN connector and DC power source (slave connector). Set DC power ON-OFF switch to ON position (AC power ON-OFF switch *must* be in OFF position). Observe that POWER ON indicator lights, fan operates, and all three pair of LED status indicators (red, green, amber) blink briefly when power is first applied.

Step 4. Observe that both red FAULT indicators are steadily lit. This occurs when a battery adapter plate (or cable) is *not* installed on the unit.

Step 5. Install appropriate battery adapter (plate or cable) for battery type to be charged on panel, aligning locating pin on panel with corresponding cutaway front section of adapter plate. Be sure that battery adapter and connector are fully seated. All battery adapters are interchangeable, only battery connections are different.

Step 6. Observe, after a short delay, both red FAULT indicators extinguish and amber CHARGE indicators blink. This shows battery charger circuits are initialized to the selected battery adapter and are ready to accept a battery (or batteries) for charging.

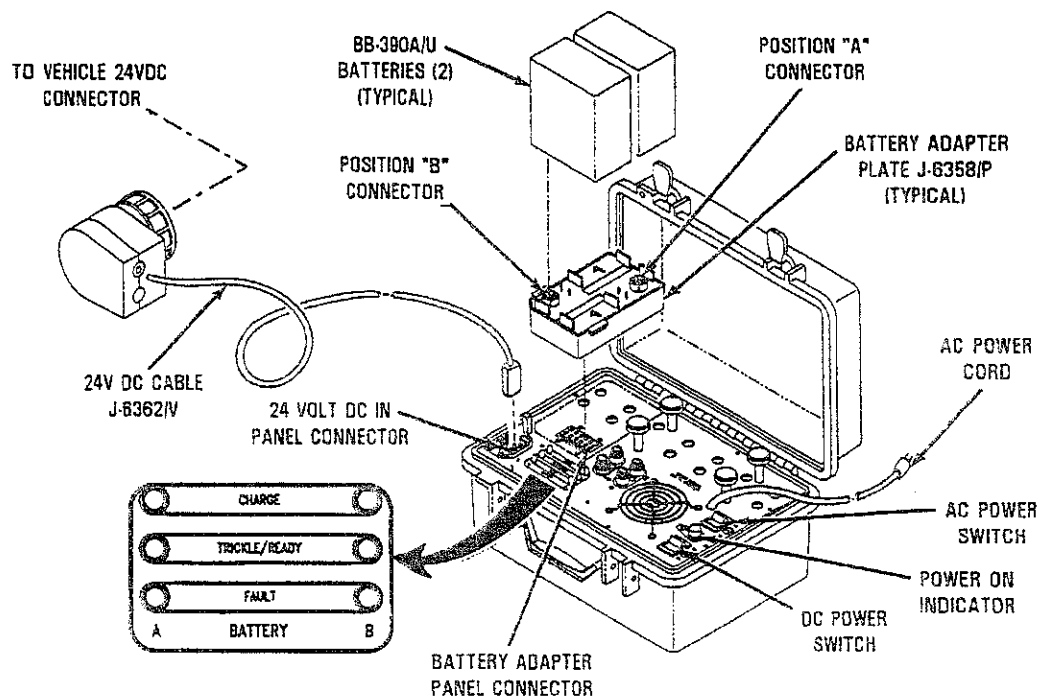


Figure 2-2. Typical Battery Installation

WARNING

Do NOT attempt to charge a non-rechargeable lithium battery, or a rechargeable BB-590/U or BB-490/U in the PP-8444/U or PP-8444A/U Battery Charger. It could result in serious injury.

b. How to Distinguish a Rechargeable Battery from a Non-Rechargeable Battery.

(1) Rechargeable batteries do not have a Complete Discharge Device (CDD) button.

(2) Type designation for rechargeable batteries is "BB". Type designation for non-rechargeable batteries is "BA".

(3) The State of Charge indicator for the rechargeable batteries, except the BB-516A/U, is an LCD that, when lit, shows a series of black bars (five bars maximum for a fully charged battery). The BB-516A/U State of Charge indicator is an LCD that is visible through five apertures in the battery top cover. The new non-rechargeable batteries will have a State of Charge indicator that will consist of two green lights. The BB-516A/U has white lettering only. The BB-503A/U has black lettering only.

(4) The BB-390A/U and BB-388/U batteries have three white stripes silk-screened on the battery front cover to indicate that they are Nickel Metal Hydride rechargeable batteries. Their non-rechargeable battery counterparts have no stripes.

(5) The BB-2847/U batteries have three yellow stripes on the front cover and all-yellow lettering silk-screening to indicate that they are Lithium Ion rechargeable batteries. Their non-rechargeable battery counterparts have no stripes.

c. Operating Procedures - Charging BB-503A/U Batteries. BB-503A/U batteries use a coaxial battery connector. The J-6355/P battery adapter cable includes a connector which plugs into panel connector J2, and two charging connectors, A and B.

Step 1. With battery adapter cable installed, connect battery to be charged to battery charging cable connector A, figure 2-3. Observe that CHARGE (amber) indicator for position A is lit; CHARGE indicator for position B will continue to blink if position B is empty. If two batteries are being charged in positions A and B both CHARGE indicators will be lit. If red FAULT indicator (A or B) is lit, battery may be defective. Check by removing battery and adapter, then reconnect adapter and battery. If FAULT indicator again lights, discard battery via Defense Reutilization Management Office (DRMO) in accordance with local regulations.

Step 2. After fast charging, the CHARGE indicator extinguishes and the battery is slow-charged to full capacity, as indicated by the TRICKLE/READY indicator (green) blinking. When the battery is fully charged, the TRICKLE/READY indicator lights steadily and the battery may be removed and returned to service and another battery may be installed for charging.

NOTE

Battery charger power may be left ON while batteries and/or adapters are removed or replaced.

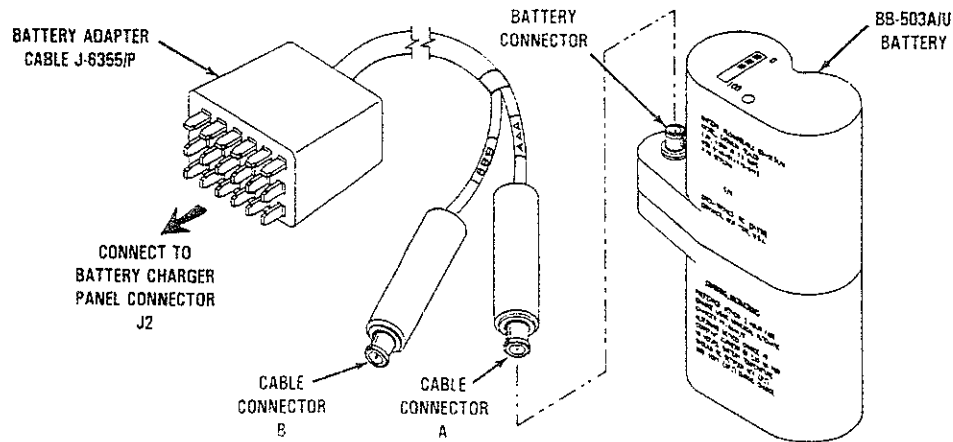


Figure 2-3. BB-503A/U Battery Charging Connections

d. Operating Procedures - All Other Batteries.

Step 1. With appropriate battery adapter installed, insert battery to be charged in position A. Observe that CHARGE (amber) indicator for position A is lit; CHARGE indicator for position B will continue to blink if position B is empty. If two batteries are charged in positions A and B both CHARGE indicators will be lit. If red FAULT indicator (A or B) is lit, battery may be defective. Check by removing battery and adapter, then reinstall adapter and another battery that is known to be good. If the second battery tests good, then discard original battery via Defense Reutilization Management Office (DRMO) in accordance with local regulations.

Step 2. After fast charging, the CHARGE indicator extinguishes and the battery is slow-charged to full capacity, as indicated by the TRICKLE/READY indicator (green) blinking. When the battery is fully charged, the TRICKLE/READY indicator lights steadily and the battery may be removed and returned to service and another battery may be installed for charging.

NOTE

BB-390A/U batteries include two 12-volt sections which are charged alternately in five-minute (approximate) intervals. A relay "clicking" may be heard from the J-6358/P adapter when battery sections are switched.

NOTE

Battery charger power may be left ON while batteries and/or adapters are removed or replaced.

NOTE

If the adapter thermistor contacts are dirty or tarnished, clean them with a pencil eraser.

CAUTION

To avoid damage to adapter plate or panel connectors, always remove adapter plates by grasping the front section finger-grips firmly and lifting straight up from panel. **DO NOT** attempt to remove the adapter by pulling upward from the rear.

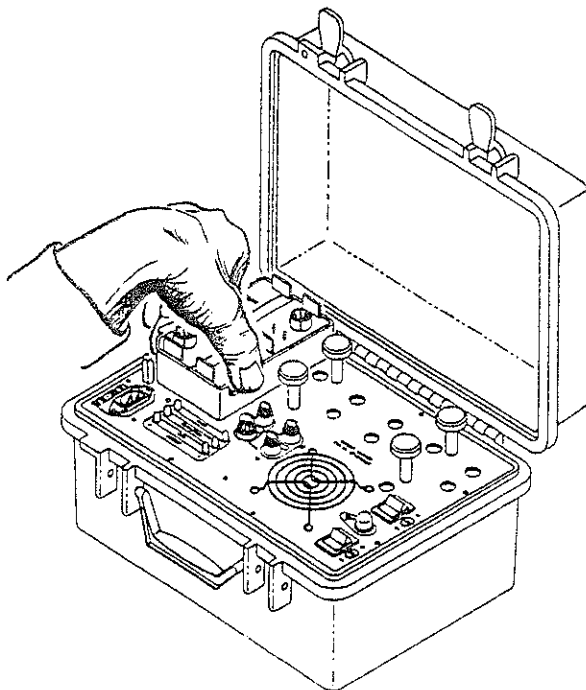


Figure 2-4. Typical Battery Adapter Removal

e. Summary of LED Status Indicator Displays

Amber	Green	Red	Status	Remarks
F	F	F	Charger startup	Flashes for a fraction of a second when charger is first turned on.
		S	Charger startup	Follows within 1 to 5 seconds to indicate charger is ready for adapter to be installed.
F			Adapter installed	Adapter is installed without battery.
F			Adapter installed with a good battery	Defective adapter.
S			Battery fast-charging	Lights while battery is in fast charge.
	F		Battery trickle-charging	Remains blinking while battery is in trickle charge.
	S		Battery charge complete	Remove charged battery.
		S	Fault condition	Remove defective battery.

F = Flashing S = Steady

NOTE

After fully charging a new rechargeable battery for the first time, there may be instances where the State of Charge (SOC) indicator does not show the battery to be fully charged (all five bars in the SOC are lit) while the PP-8444/U or PP-8444A/U indicates that the battery is fully charged (steady green light). The new battery is probably fully charged (the SOC indicator is independent of the charging circuit).

If you experience the above condition, do the following:

Preferred Method: Discharge the battery using an automatic discharger, such as the PP-8448/U, and replace it in the battery charger for one or two more charging cycles.

Alternate Method: Discharge the battery by using it in the end item; or, discharge the battery by any method within its current rating, then recharge.

f. Interruptions in Charging Sequence.

(1) When the battery charger is turned OFF with a battery in place on the adapter the battery remains at the most recent state of charge.

(2) When the battery charger is turned ON with a battery and adapter connected the status LED's proceed through the normal startup sequence, the amber LED flashes briefly until the battery and adapter are identified by the charger circuits, then lights steadily.

(3) When batteries are removed before being fully charged, and then later replaced, the battery charger operates as if a fully-discharged battery is installed and terminates fast charging when the battery charge is at the correct level.

(4) When the battery charger is turned ON with the battery adapter installed, the LED's sequence briefly and the amber LED flashes until a battery is installed on the adapter.

g. State-of- Charge (SOC) Battery Displays. Batteries equipped with state-of-charge features indicate battery charge status on a five-segment LCD display by the number of segments activated, as follows:

For BB-390A/U, BB-388/U,
BB-516A/U and BB-503A/U Batteries

<u>Segments</u>	<u>State-of-Charge</u>
0	0% (fully discharged)
1	0 to 24%
2	24 to 42%
3	42 to 65%
4	65 to 92%
5	92 to 100% (fully charged)

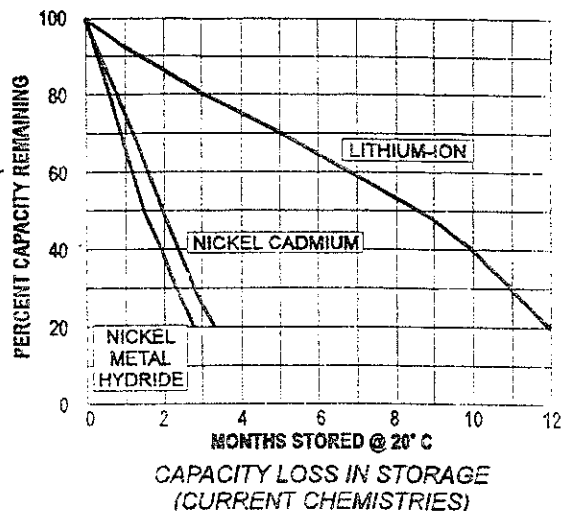
For BB-2847/U Battery

<u>Segments</u>	<u>State-of-Charge</u>
0	0% (fully discharged)
1	0 to 18%
2	18 to 37%
3	37 to 61%
4	61 to 78%
5	78 to 100% (fully charged)

NOTE

BB-390A/U batteries have two State of Charge (SOC) indicators. Both indicators have to be 100% for the battery to be 100%.

h. Battery Capacity Retention. As shown in the adjoining graph, fully-charged batteries that are stored lose a portion of their charge due to battery chemistry. This is normal and should not be interpreted as battery failure. Storage at higher temperatures increases capacity losses.



i. Battery Charger Cover Label. Shown below are the instructions contained on the "SHORT FORM - OPERATING PROCEDURE" label, attached inside the battery charger cover.

PP-8444A/U - BATTERY CHARGER

NSN 6130-01-443-0970

AC INPUT: 100 TO 250 VAC DC INPUT: 24 VDC

SHORT FORM - OPERATING PROCEDURE

1. Connect input power.
2. Turn "ON" power switch.
For AC Operation - AC switch "ON"/DC switch "OFF" - Red Power Light illuminates in "ON" position.
For DC Operation - DC switch "ON"/AC switch "OFF" - Red Power Light illuminates in "ON" position.
3. Select and install the appropriate adapter plate or adapter cable for the battery(s) to be charged.
4. Insert battery(s) onto the adapter plate or cable.

LIGHT INDICATIONS FOR EACH BATTERY

Amber	Green	Red	Meaning	Remarks
F	F	F	Charger Start-up	All lights appear momentarily when charger is turned on.
		S	Power on, no adapter present	Adapter must be installed.
F			Power on, adapter present, no battery present	Install Battery(s) onto adapter plate or cable.
S			Battery is fast charging	Lights while battery is fast charging.
	F		Battery is trickle charging	Remains flashing during trickle charge.
	S		Battery charging complete	Battery should be removed.
		S	Fault, with battery in place, Do Not Use	Consult Standard Operating Procedure.

F = Flashing

S = Steady

2-5. ALTERNATE METHOD OF CHARGING BATTERIES

a. The BB-390A/U, BB-388/U, BB-516A/U, and BB-503A/U batteries can also be slow charged in the PP-7286 Battery Charger with the appropriate cable. Charging parameters for each battery are provided on the battery front label under "ALTERNATE METHOD".

b. The approximate charging times for a fully discharged battery are as follows:

WARNING

Do not exceed the recommended times.

BATTERY TYPE	CURRENT SETTING	TIME (HRS)
BB-390A/U	360 mA	12
BB-388/U	150 mA	10-12
BB-516A/U	45 mA	6-7
BB-503A/U	530 mA	10

2-6. PREPARATION FOR MOVEMENT

- a.* Set POWER switches to OFF.
- b.* Remove any installed batteries.
- c.* Remove any installed battery adapters from panel connector.
- d.* Wrap ac power cable around posts.
- e.* Close cover and secure cover latches.
- f.* Close pressure relief valve on bottom of unit by turning screw fully clockwise.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-7. OPERATION IN UNUSUAL WEATHER

Observe these precautions when the battery charger is operated in areas where severe climatic conditions may exist:

a. Operation in Arctic Climates. The battery charger is designed to function in temperatures as low as 32°F. (0°C.). However, the following precautions should be observed:

NOTE

When charged in a 32°F. (0°C.) environment, the BB-2847/U does not provide the required capacity. (It provides only 86% capacity.) Full capacity can be obtained at 41°F. (5°C.) or higher.

- (1) Handle equipment carefully.
- (2) Keep equipment clean and dry.
- (3) Prevent ice from forming on the equipment. Ice formations may prevent proper electrical connections.

b. Operation in Desert Climates. Temperature extremes to 122°F. (50°C.) and dryness associated with desert environment will not affect equipment operation. However, dust storms may cause poor electrical connection and prevent proper equipment operation.

NOTE

When charged in a 122°F. (50°C.) environment, the BB-390A/U does not provide the required capacity. (It provides only 85% capacity.) Full capacity can be obtained at 113°F. (45°C.) or lower.

NOTE

When charged in a 122°F. (50°C.) environment, the BB-388/U does not provide the required capacity. (It provides only 88% capacity.) Full capacity can be obtained at 113°F. (45°C.) or lower.

c. Operation in Salt Spray. Keep equipment clean and dry at all times and immediately wipe salt spray from exposed surfaces, cables and connectors. When not in use, be sure that cover is fully latched and pressure relief valve (on bottom of unit) is fully closed (in a clockwise direction).

NOTE

Battery charge acceptance varies with ambient temperature conditions. At temperatures lower than 32° F. (0° C.) or higher than 104° F. (40° C.) it may be necessary to initiate two complete charging cycles to secure a fully-charged battery.

CHAPTER 3 UNIT MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3-1. LUBRICATION

Lubrication is not required.

Section II. UNIT MAINTENANCE INSTRUCTIONS

3-2. FUSE REPLACEMENT

Unit level maintenance is responsible only for correcting equipment failures which can be remedied by replacement of the battery charger AC or DC power fuse; or the built-in fuse contained in 24 VDC cable J-6362/V. All other maintenance and troubleshooting procedures are to be accomplished at DS maintenance level.

a. If POWER ON indicator does not light *and* exhaust fan does not operate when battery charger is connected to AC input power, AC power switch is set to ON position, and DC power switch is set to OFF position, replace AC fuse.

b. If battery charger operates on ac power, but does not function on DC power, DC power switch is set to ON position, and AC power switch is set to OFF position, replace DC fuse in 24 VDC cable; if battery charger still does not operate on DC, replace DC fuse on battery charger panel.

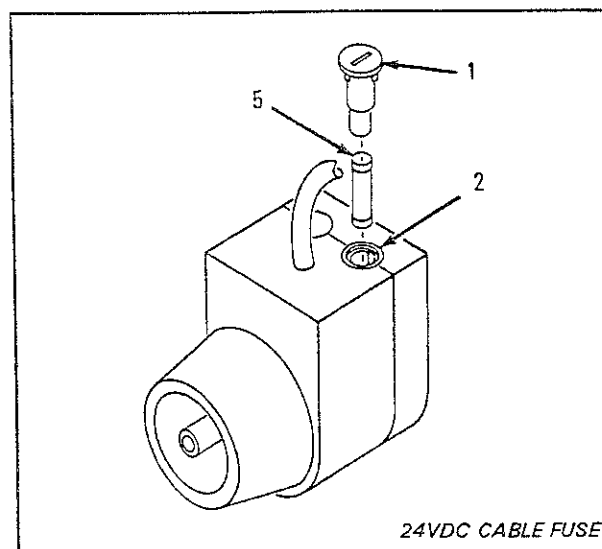
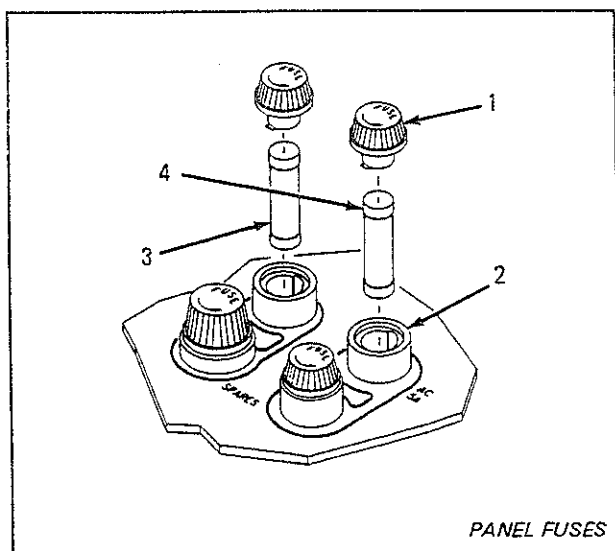
c. If a replacement fuse continues to "blow", this indicates an equipment overload or short circuit. Refer the unit to DS maintenance.

<u>Materials Required</u>	<u>Description</u>
Fuse F1 (AC fuse)	Type AGC, 5 ampere
Fuse F2 (DC fuse)	Type AGC, 10 ampere
24 VDC cable fuse	Type AGC, 15 ampere

NOTE

Spare 5 ampere and 10 ampere fuses are included in SPARES fuseholders for the AC and DC panel fuses. If a SPARE fuse is used to replace a panel fuse, always be sure to replace the SPARE with the same type fuse so it is available for future use.

STEP	ACTION
1.	- For battery charger panel fuses: Press in and turn (ccw) to remove appropriate fuseholder cap (1) from fuseholder (2). - For 24 VDC cable fuse: Use a flat-blade screwdriver in fuseholder cap slot, push down slightly and turn (ccw) to release cap (1) from fuseholder (2).
2.	Remove defective DC fuse (3), AC fuse (4), or 24 VDC cable fuse (5) from fuseholder cap.
3.	Insert replacement fuse into fuseholder cap.
4.	Insert fuse and cap into fuseholder and replace cap into fuseholder.



CHAPTER 4

DS MAINTENANCE INSTRUCTIONS

Section I. GENERAL

4-1. SCOPE

This chapter contains instructions for fault isolation, testing, component replacement procedures, and checkout of the equipment after component replacement for direct support (DS) maintenance of Battery Charger PP-8444/U or PP-8444A/U and DC Cable Assembly J-6362/V. Direct support maintenance personnel will perform tests and replacements of only those parts and assemblies described in Section II.

Section II. TROUBLESHOOTING

4-2. CHECKOUT AND TROUBLESHOOTING PROCEDURES

This section contains instructions for troubleshooting the battery charger. Direct support personnel will replace faulty components, which are limited to those described in this section.

- a. *Visual Inspection.* Before performing tests, visually inspect the battery charger to find faults. Prevent tests that are unnecessary to locate an easily-seen fault, such as charred wiring, loose or broken connections, and so on.
- b. *Troubleshooting Method.* Equipment failures may appear when only one type of battery is being charged, or the charger may not operate regardless of which battery is being charged. Troubleshooting is based on observing problems that occur during operation on AC or DC input power, and under conditions that occur during normal use of the unit. Proceed with step-by-step checkout of charger components until the defective part is found and replaced and the problem is corrected.
- c. *Operational Checkout.* Perform the operating procedures given in para. 2-4. Note at which point in the procedures that the battery charger does not function or operates improperly.
- d. *Fault Isolation.* Refer to Table 4-1.

CAUTION

Battery Charger PP-8444/U is designed to operate on AC supply voltages in the range of 90 to 125 volts AC; Battery Charger PP-8444A/U is designed to operate on AC supply voltages in the range of 100 to 250 volts AC.
BE SURE TO USE CORRECT SUPPLY VOLTAGES OR DAMAGE MAY OCCUR!

CAUTION

Do NOT energize the PP-8444/U or PP-8444A/U Battery Charger 24 VDC input with a 115 VAC power connector. This will result in equipment damage.

Table 4-1. Troubleshooting Procedures

WARNING

Unless otherwise noted, troubleshooting and repair procedures are performed with power switches OFF and power cables disconnected from power source.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. Battery charger does not operate on AC source but operates on 24 VDC source; fuse F1 is good and DC power switch is in OFF position.	Step 1. Remove and swing aside panel assembly by removing 8 screws and washers securing panel to case (figure 4-1). Inspect interior visually for damaged components (burned or broken). Check continuity between:	• AC power cable plug line pin and AC power switch S1-A. • AC power cable plug neutral pin and DC power switch S2-D. • AC power cable plug ground pin and chassis ground.
	If no continuity or high resistance is obtained on any measurement, replace power cable (para 4-4).	
	Step 2. Set AC power ON-OFF switch S1 to ON position and check for continuity between:	• Switch terminals S1-A and S1-C.
	Set S1 to OFF and check for continuity between:	• Switch terminals S1-D and S1-E.
	If no continuity or high resistance is obtained on any measurement, replace switch S1 (para 4-4).	
Step 3. Check electrical interlock continuity with S1 ON and S2 OFF, between:	• AC power cable plug neutral pin and DC switch S2-E.	If no continuity or high resistance is obtained, replace switch S2 (para 4-4).
Step 4. Check interconnecting wiring between:	• Switch terminal S1-C and power supply A1 connector CN1, pin 6. • Switch terminal S2-E and power supply A1 connector CN1, pin 4.	If no continuity or high resistance is obtained on any measurement, repair/replace interconnecting wiring; if continuity is obtained, replace power supply assembly A1 (para 4-5).

Table 4-1. Troubleshooting Procedures (continued)

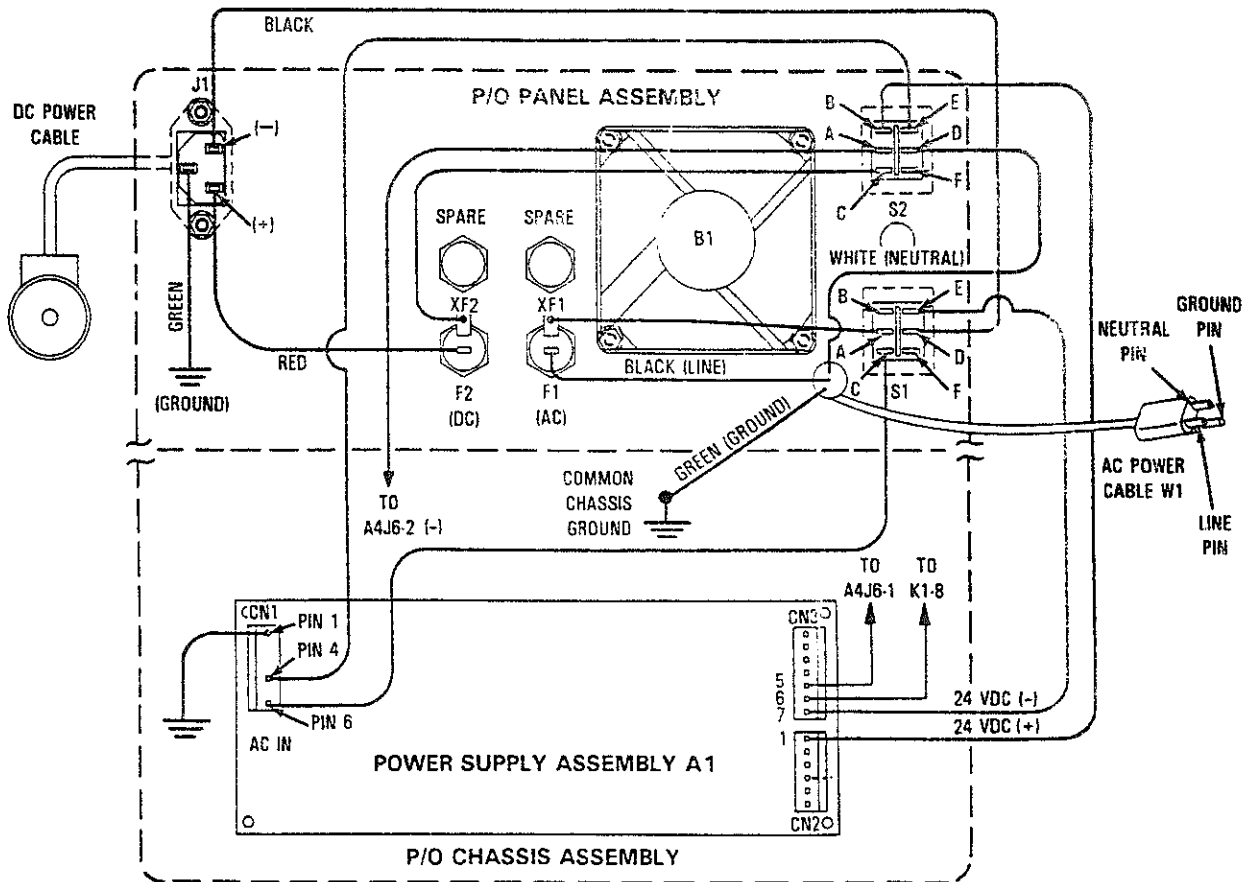
WARNING

Unless otherwise noted, troubleshooting and repair procedures are performed with power switches OFF and power cables disconnected from power source.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION



2. **Battery charger does not operate on 24 VDC source but operates on AC source; 24VDC cable fuse is good; DC panel fuse F2 is good; AC power switch is in OFF position.**

Step 1. Remove and swing aside panel assembly by removing 8 screws. Inspect interior visually for damaged components (burned or broken). Connect corresponding 24VDC cable connector to panel connector J1 (DO NOT connect other end of cable) and check continuity between:

- DC cable connector J1 (+) and DC power switch S2-C.
- DC cable connector J1 (-) and AC power switch S1-D.

If no continuity or high resistance is obtained on any measurement, replace 24VDC power cable.

Table 4-1. Troubleshooting Procedures (continued)

WARNING

Unless otherwise noted, troubleshooting and repair procedures are performed with power switches OFF and power cables disconnected from power source.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
2. Continued		
	Step 2.	Set DC power ON-OFF switch S2 to OFF position and check for continuity between: • Switch terminals S2-D and S2-E • Switch terminals S2-A and S2-B Set S2 to ON position and check for continuity between: • Switch terminals S2-A and S2-C. If no continuity or high resistance is obtained on any measurement, replace switch S2 (para 4-4).
	Step 3.	Check interconnecting wiring between: • Switch terminal S2-B and power supply A1 connector CN2-1. • Switch terminal S2-A and CPU circuit board A4 connector J6-2. • Switch terminal S1-E and power supply A1 connector CN3-7. If no continuity or high resistance is obtained on any measurement, repair/replace interconnecting wiring; if continuity is obtained, replace power supply circuit board assembly (para 4-5).
3.	Battery charger does not operate on either AC or DC input power; fuses F1 and F2 are good, fan does not operate, and POWER ON indicator does not light. Replace power supply assembly A1 (para 4-5).	
4.	Battery installed in adapter A section does not charge; no LED status indicators light.	
	Step 1.	Connect charger to AC power source.
	Step 2.	Replace with another battery adapter of the same type and operate the unit. If CHARGE A indicator now lights, discard faulty adapter.
	Step 3.	Insert battery in adapter section B. • If CHARGE B indicator lights, disconnect unit from power, remove battery, and replace regulator A circuit board assembly A2 (para 4-5). • If CHARGE B indicator also does not light, disconnect unit from power, remove battery, and replace CPU control circuit board assembly A4 (para 4-5).

Table 4-1. Troubleshooting Procedures (continued)

WARNING

Unless otherwise noted, troubleshooting and repair procedures are performed with power switches OFF and power cables disconnected from power source.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
5.	Battery installed in adapter B section does not charge; no LED status indicators light.	Step 1. Connect charger to AC power source. Step 2. Substitute another battery adapter of the same type and operate the unit. • If CHARGE B indicator now lights, discard faulty adapter. Step 3. Insert battery in battery adapter section A. • If CHARGE A indicator lights, disconnect unit from power, remove battery, and replace regulator B circuit board assembly A3 (para 4-5). • If CHARGE A indicator also does not light, disconnect unit from power, remove battery, and replace CPU control circuit board assembly A4 (para 4-5).
6.	Charger does not cycle automatically from CHARGE to TRICKLE, or LED status indicators do not illuminate or follow established sequence; battery is not defective.	Verify that battery is good, then replace CPU control circuit board assembly (para 4-5).
7.	CHARGE A and/or CHARGE B LED status indicators continue to blink even though batteries are installed in adapter section(s) A and/or B.	Replace isolation relay K1 (para 4-5).
8.	Charger operates normally; LED status indicators do not operate or operate intermittently.	Replace LED status control circuit board assembly A5 (para 4-5).

WARNING

Unless otherwise noted, repair procedures are performed with power cables disconnected from power source.

4-3. DISASSEMBLY AND REPLACEMENT

4-4. REMOVAL AND REPLACEMENT OF PANEL COMPONENTS

Refer to figure 4-1 for removal of panel assembly.

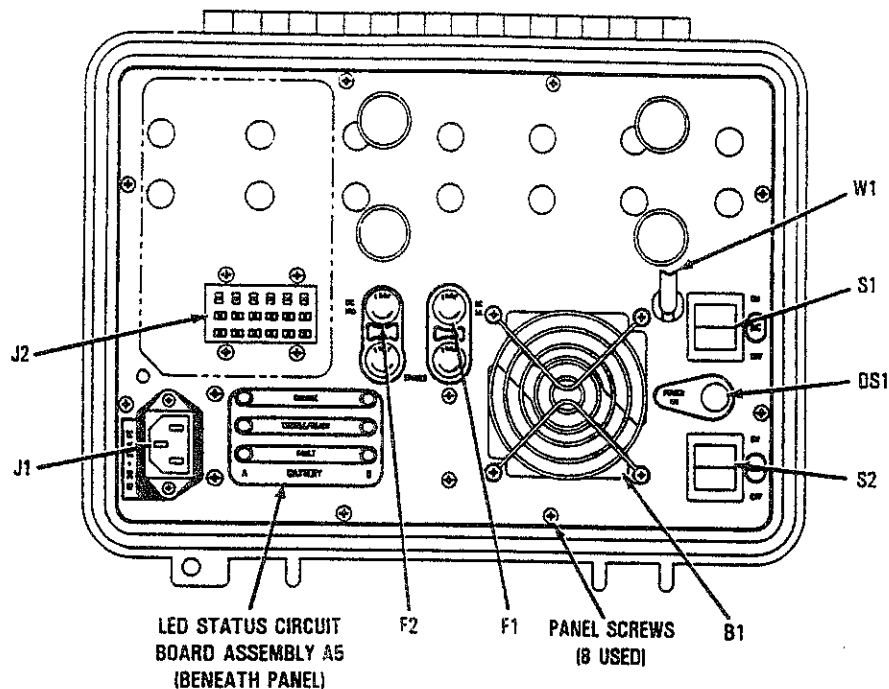


Figure 4-1. Battery Charger, Removal of Panel Assembly

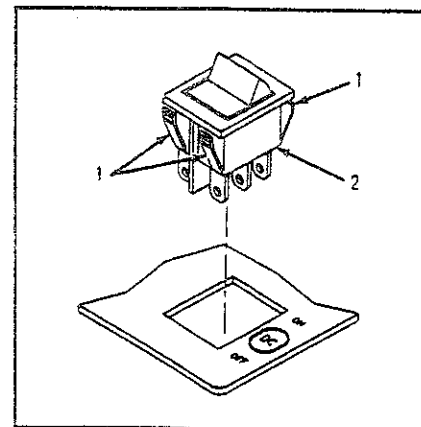
To remove panel assembly and gain access to panel and chassis components, remove eight screws, lock washers, and flat washers, and swing panel forward.

CAUTION

In some instances, terminal leads are soldered to switches.

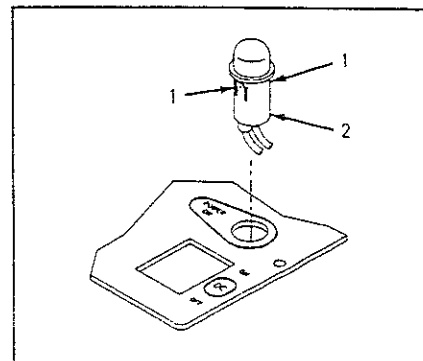
a. Switches S1 and S2 - These switches are installed in panel cutouts and secured in place by tension clips that are part of the switch assembly. To remove a switch, proceed as follows:

- (1) Disconnect leads to switch terminals, tagging leads for identification.
- (2) Compress tension clips (1) and remove switch (2) through top of panel.
- (3) Replace switch in reverse order of removal.



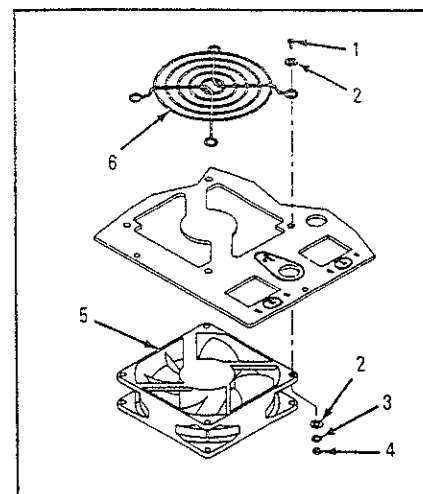
b. Indicator DS1 - The indicator is installed in a panel cutout and secured in place by tension clips. To remove the indicator assembly, proceed as follows:

- (1) Disconnect indicator leads from switch terminals S1-25 and S2-24.
- (2) Compress tension clips (1) and remove indicator assembly (2) through top of panel.
- (3) Replace indicator in reverse order of removal.



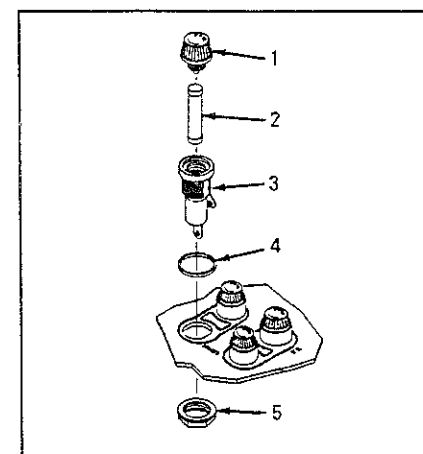
c. Exhaust Blower B1 - The exhaust blower and grill are secured to the panel by four screws, flat washers, lock washers, and nuts. Remove the blower as follows:

- (1) Disconnect blower leads from switch terminals S2-24 (red) and S1-25 (black).
- (2) Remove four screws (1), flat washers (2), lock washers (3), and nuts (4) which secure blower (5) to panel and remove from beneath panel. Remove metal grill (6).
- (3) Replace blower and grill in reverse order of removal.



d. Fuses and Fuseholders F1 and F2 - Remove fuses by pressing in and turning fuseholder cap (1) ccw and pulling fuse (2) from cap. Fuseholders (3) attach to the panel with a nut and are removed as follows:

- (1) Disconnect leads to fuseholder terminals, tagging leads for identification.
- (2) Remove nut (5) and washer (4) and remove fuseholder (3) from top of panel.
- (3) Replace fuseholder in reverse order of removal.



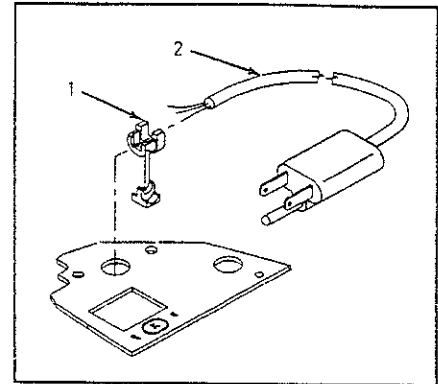
WARNING

TO AVOID ELECTRICAL SHOCK HAZARD, BE SURE THAT POWER CABLE GROUND LEAD IS SECURELY CONNECTED TO CHASSIS GROUND TERMINAL.

e. Cable Assembly W1 - Electrical cable assembly W1 is terminated at one end with a standard three-prong molded connector with ground pin; the other end of the cable

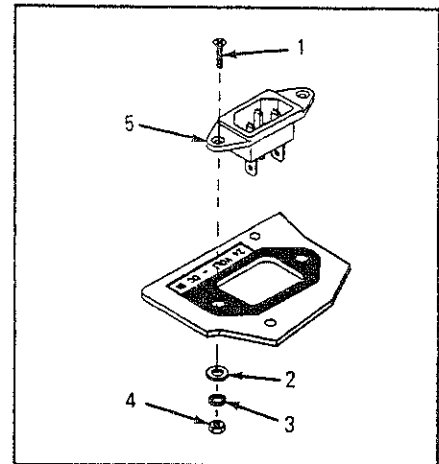
includes a ground lead (green) and terminal lug, line (black) and neutral (white) leads. Remove and replace cable as follows:

- (1) Disassemble and remove cable strain relief (1).
- (2) Tag terminals, disconnect cable leads and remove ground lead terminal screw, flat washer, and lock washer. Remove cable (2).
- (3) Replace cable in reverse order of removal.



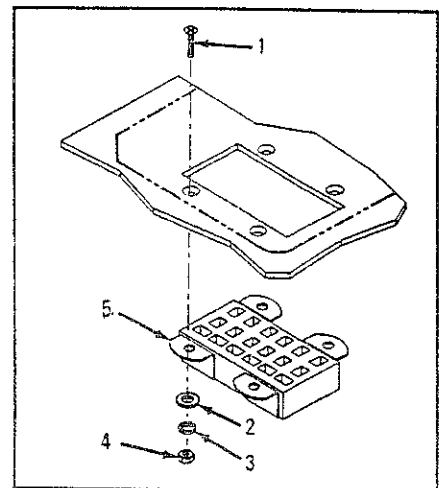
f. DC Cable Connector J1 - The connector is secured in place with two screws, washers, lock washers, and nuts. Remove and replace connector (5) as follows:

- (1) Disconnect three leads from connector terminals, tagging for identification.
- (2) Remove attaching screws (1), flat washers (2), lock washers (3) and nuts (4). Remove connector (5) from panel.
- (3) Replace connector in reverse order of removal.



g. Battery Adapter Assembly Connector J2 - The connector is secured in place with four screws, washers, lock washers, and nuts. Remove and replace connector (with wiring harness and dual connectors) as follows:

- (1) Disconnect wiring harness connectors from corresponding regulator circuit boards A and B, tagging for identification.
- (2) Remove attaching screws (1), flat washers (2), lock washers (3) and nuts (4). Remove connector (5) and wiring harness from beneath panel.
- (3) Replace connector in reverse order of removal.

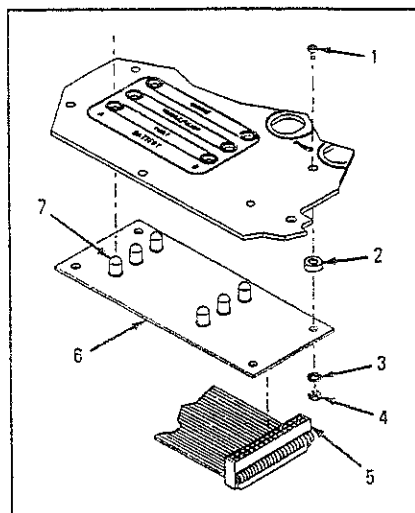


h. LED Status Circuit Board Assembly A5 - Circuit board assembly A5 is secured beneath the panel assembly with four screws, spacers, lock washers, and nuts. Remove and replace as follows:

- (1) Disconnect connector (5) from circuit board.
- (2) Remove attaching screws (1), spacers (2), lock washers (3) and nuts (4). Remove circuit board (6) from panel.
- (3) Replace circuit board in reverse order of removal, using care to insert LED's (7) through corresponding panel holes.

NOTE

When connector (5) is replaced, red-striped lead on connector harness must be located at J1 pin 1.



4-5. REMOVAL AND REPLACEMENT OF CHASSIS COMPONENTS

Refer to figure 4-2 for chassis assembly parts location. With the panel assembly removed, power supply A1, regulator circuit boards A and B, A2, A3, CPU control circuit board A4, and isolation relay K1 are accessible for removal and replacement.

CAUTION

PP-8444/U Power Supply Assembly A1 differs from PP-8444A/U Power Supply Assembly A1. Power supplies are NOT interchangeable.

a. Power Supply Assembly A1 - Power supply A1 is secured to the chassis with five screws, washers, lock washers, and nuts. Remove and replace as follows:

- (1) Disconnect three connectors from circuit board at CN1, CN2, and CN3.
- (2) Remove five attaching screws, flat washers, and lock washers. Remove power supply from chassis.
- (3) Replace power supply in reverse order of removal,

b. Regulator Circuit Boards A and B, A2 and A3 - Remove and replace as follows:

- (1) Disconnect two connectors from circuit board at J1 and J3.
- (2) Using a small slotted-head screwdriver, loosen screws securing leads to connector J2, disconnect and tag leads.
- (3) Lift circuit board up from guides and remove from chassis.
- (4) Replace circuit board in reverse order of removal.

c. *CPU Control Circuit Board, A4* - Remove and replace as follows:

- (1) Disconnect three connectors from circuit board at J2, J3, and J5.
- (2) Using a small slotted-head screwdriver, loosen screws securing leads to connectors J4 and J6, disconnect and tag leads.
- (3) Lift circuit board up from guides and remove from chassis.
- (4) Replace circuit board in reverse order of removal.

d. *Relay K1* - Remove and replace as follows:

- (1) Disconnect leads from relay terminals, tagging leads for identification.
- (2) Remove screw, flat washer, and lock washer securing hold-down bracket, and remove bracket.
- (3) Replace relay K1 in reverse order of removal.

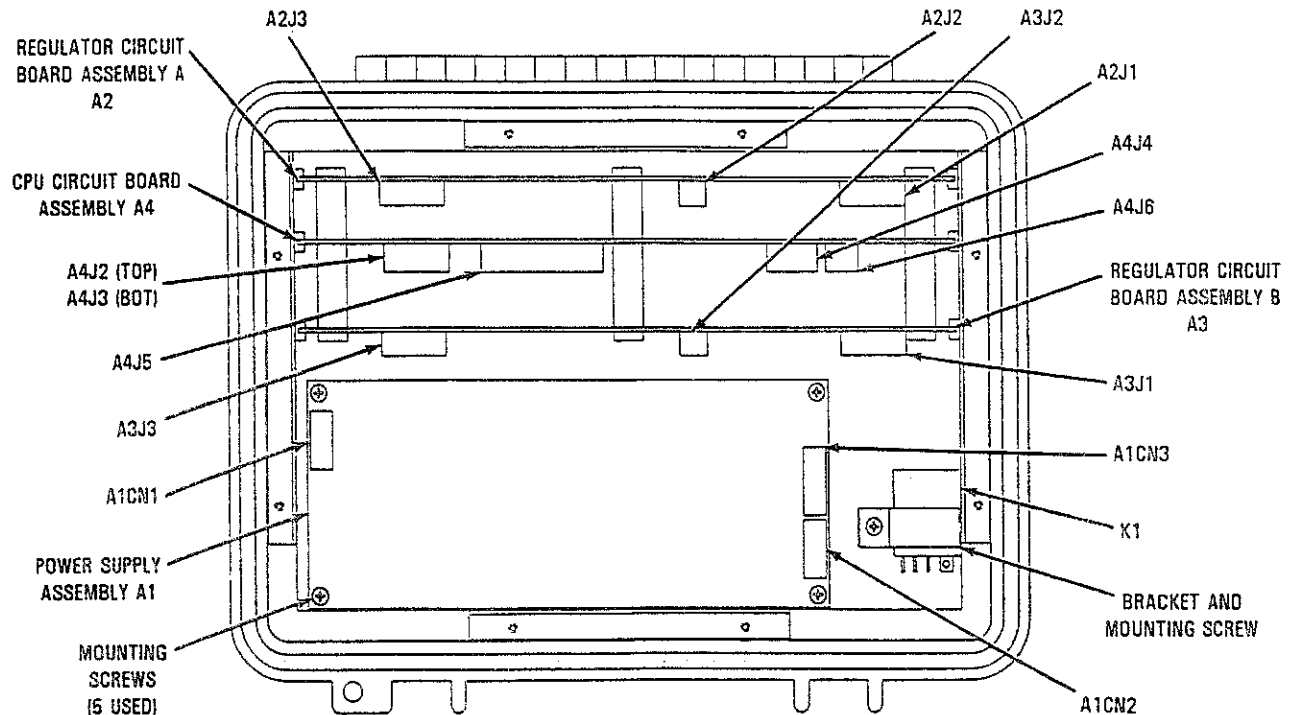


Figure 4-2. Battery Charger Chassis Assembly, Parts Location

4-6. CHECKOUT AFTER REPAIR

Repeat operating (checkout) procedures in para. 2-4. If unit operates normally, return to service.

4-7. WIRING DIAGRAM

Refer to figure 4-3 for battery charger interconnecting cabling diagram.

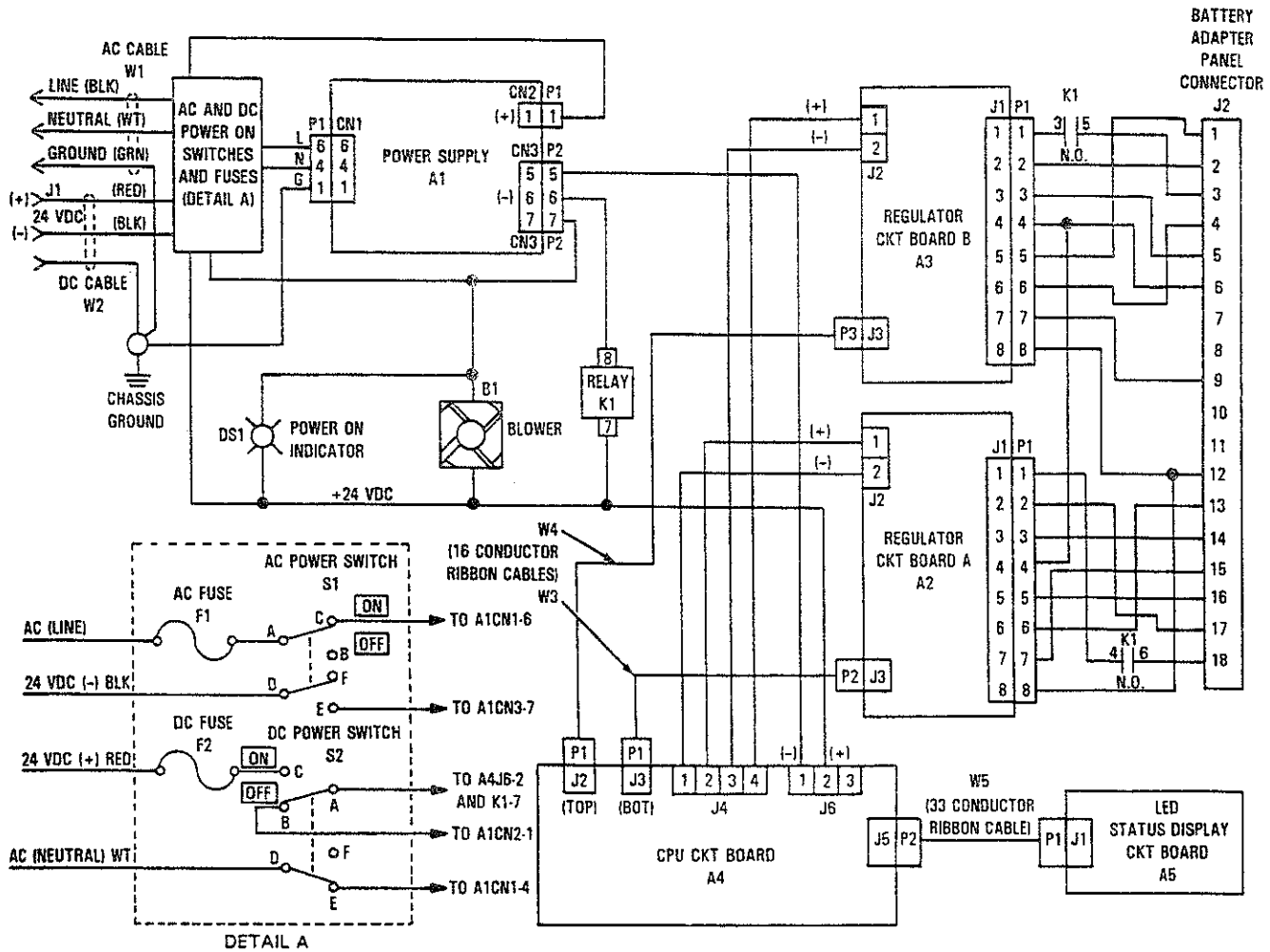


Figure 4-3. Battery Charger Interconnecting Cabling Diagram

APPENDIX A

REFERENCES

Scope

This appendix lists all forms and publications referenced in this manual.

Forms

Component Removal and Repair/Overhaul Record	DA Form 2410
Product Quality Deficiency Report	SF 368
Transportation Discrepancy Report	SF 361
Recommended Changes to Equipment Technical Publications	DA Form 2028-2
Recommended Changes to Publications and Blank Forms	DA Form 2028

Army Regulations

Reporting of Transportation Discrepancies in Shipments	AR 55-38
Reporting of Item and Packaging Discrepancies	AR 735-11-2

Pamphlets

Consolidated Index of Army Publications and Blank Forms	DA Pam 25-30
The Army Maintenance Management System (TAMMS)	DA Pam 738-750

Field Manuals

First Aid for Soldiers	FM 21-11
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Technical Manuals

Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command)	TM 750-244-2
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APPENDIX B
MAINTENANCE ALLOCATION CHART (MAC)

SECTION I
INTRODUCTION

B.1 The Army Maintenance System MAC.

B.1.1. This Introduction (Section I) provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System Concept.

B.1.2. The Maintenance Allocation Chart (MAC) in Section II designates overall authority and responsibility for the performance of maintenance functions on Universal Portable Battery Charger, PP-8444/U or PP-8444A/U. The application of the maintenance functions to this equipment will be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit - includes two subcolumns: C (operator/crew); and
O (unit) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

Depot - includes a D subcolumn

B.1.3. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

B.1.4. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B.2. Maintenance Functions. Maintenance functions are limited to and defined as follows:

B.2.1. *Inspect.* To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

B.2.2. *Test.* To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item/end item and comparing those characteristics with prescribed standards.

B.2.3. *Service.* Operations required periodically to keep an items in proper operating condition: e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

B.2.4. *Adjust.* To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.

B.2.5. *Align.* To adjust specified variable elements of an item to bring about optimum or desired performance.

B.2.6. *Calibrate.* To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment used in precision measurement. Consisting of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

B.2.7. *Remove/Install.* To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an item or system.

B.2.8. **Replace.** To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the 3rd position code of the SMR code.

B.2.9. **Repair.** The application of maintenance services¹ including fault location/troubleshooting², removal/installation, and disassembly/assembly³ procedures, and maintenance actions⁴ to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

B.2.10. **Overhaul.** That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

B.2.11. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

¹Services - Inspect, test, service, adjust, align, calibrate, and/or replace.

²Fault Location/troubleshooting - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

³Disassembly/assembly - The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

⁴Actions - Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

B.3. Explanation of Columns in the MAC, Section II

B.3.1. *Column 1, Group Number.* Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly.

B.3.2. *Column 2, Component/Assembly.* Column 2 contained the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

B.3.3. *Column 3, Maintenance Function.* Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B.2.)

B.3.4. *Column 4, Maintenance Level.* Column 4 specifies each level of maintenance authorized to perform each function listed in Column 3, by indicating work time required (expressed as man-hours in whole hours or decimals) in the appropriate subcolumn. This work-time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate work-time figures are shown for each level. The work-time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (condition/follow-on tasks), including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance function authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

NOTE

When a complete replace or repair task performed at higher level maintenance includes lower level maintenance tasks (equipment condition/follow-on tasks), the lower level work-time figures in the MAC must be added to the higher level work time shown in the MAC to determine the total to accomplish that maintenance function.

C	Operator or crew maintenance
O	Unit maintenance
F	Direct support maintenance
H	General support maintenance
D	Depot maintenance

B.3.5. *Column 5, Tools and Test Equipment Reference Code.* Column 5 specifies, by code, those common tools sets (not individual tools), common TMDE, and special tools, special TMDE, and special support equipment required to perform the designated function. Codes are keyed to tools and test equipment in Section III.

B.3.6. *Column 6, Remarks.* When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks contained in Section IV.

B.4. *Explanation of Columns in Tool and Test Equipment Requirements, Section III.*

B.4.1. *Column 1, Reference Code.* The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

B.4.2. *Column 2, Maintenance Level.* The lowest level of maintenance authorized to use the tool or test equipment.

B.4.3. *Column 3, Nomenclature.* Name or identification of the tool or test equipment.

B.4.4. *Column 4, National Stock Number.* The National Stock Number of the tool or test equipment.

B.4.5. *Column 5, Tool Number.* The manufacturer's part number, model number, or type number.

B.5. *Explanation of Columns in Remarks, Section IV.*

B.5.1. *Column 1, Remarks Code.* The code recorded in column 6, Section II.

B.5.2. *Column 2, Remarks.* This column, along with the related codes, should be used to clarify maintenance and inspection functions by different MOS' involved in maintaining some components.

Section II. MAINTENANCE ALLOCATION CHART
FOR
UNIVERSAL PORTABLE BATTERY CHARGER, PP-8444/U OR PP-8444A/U

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			UNIT		DIRECT SUPPORT	GENERAL SUPPORT	DEPOT		
			C	O	F	H	D		
00	BATTERY CHGR	INSPECT		0.2					A
		SERVICE	0.2						B
		TEST		1.0				1	C
		TEST			1.0			1, 2	C
		REPLACE		0.1					
		REPAIR		0.5				1	G
		REPAIR			2.0			1, 2	F, H
01	PANEL ASSEMBLY	TEST			1.0			1, 2	C, E,
		REPAIR			1.0			2	F
02	MAIN ASSEMBLY	TEST			0.5			1, 2	C, E
		REPAIR			1.0			2	H

SECTION III. TOOLS AND TEST EQUIPMENT
FOR
UNIVERSAL PORTABLE BATTERY CHARGER, PP-8444/U OR PP-8444A/U

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	C, F	MULTIMETER, DIGITAL	6625-01-265-6000	AN/PSM-45A
2	C, F	TOOL KIT, ELECTRONIC EQUIP	5180-00-610-8177	TK-105/G

SECTION IV. REMARKS
FOR
UNIVERSAL PORTABLE BATTERY CHARGER, PP-8444/U OR PP-8444A/U

REMARKS CODE	REMARKS
A	EXTERNAL
B	PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
C	PERFORMANCE TEST
D	REPLACE UNIT/ASSEMBLY
E	COMPONENT TEST
F	REPAIR BY REPLACEMENT OF LED CIRCUIT BOARD ASSEMBLY (A5), BLOWER, POWER SWITCHES (S1 & S2), INDICATOR LIGHT (DS1), FUSES (F1 & F2), CONNECTORS (J1 & J2) AND POWER CABLES (W1)
G	FUSE REPLACEMENT ONLY
H	REPAIR BY REPLACEMENT OF POWER SUPPLY ASSEMBLY (A1), REGULATOR CIRCUIT BOARD ASSEMBLIES A AND B (A2 AND A3), AND CPU CIRCUIT BOARD ASSEMBLY (A4)

APPENDIX C

REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

C-1. SCOPE

This RPSTL lists and authorizes spares and repair parts, special tools, special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of operator's, unit and direct support maintenance of Universal Portable Battery Charger PP-8444/U or PP-8444A/U. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

C-2. GENERAL

This repair parts and special tools list is divided into the following sections:

a. Section II, Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. This list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Items listed are shown on the associated illustration.

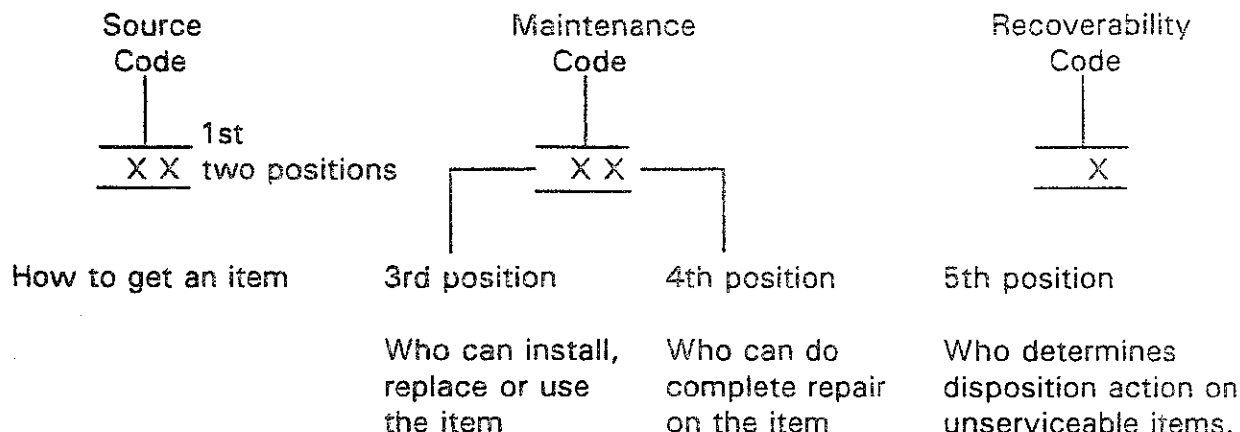
b. Section III, Special Tools List. Not Applicable.

c. Section IV, Cross-Reference Indexes. There are two cross-reference indexes in this RPSTL: the National Stock Number Index and the Part Number Index. The National Stock Number Index refers you to the figure and item number. The Part Number Index refers you to the figure and item number.

C-3. EXPLANATION OF COLUMNS (SECTION II)

a. ITEM NO., Column (1). Indicates the number used to identify items called out on the illustration.

b. SMR CODE, Column (2). The source, maintenance, and recoverability (SMR) code contains supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout:



NOTE

Complete repair: Maintenance, capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

(1) **Source Code.** The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Source Code	Application/explanation
PA	Stock items: Use the applicable NSN to requisition/request items with this source code. They are authorized to the level indicated by the code entered in the third position of the SMR code.
XB	If an item is not available from salvage, order it using the CAGEC and part number.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes.

(2) **Maintenance Code.** Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third position of the SMR code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use the item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

Maintenance Code	Application/Explanation
---------------------	-------------------------

O - Unit level maintenance can remove, replace, and use the item.

F - Direct support maintenance can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the maintenance allocation chart and SMR codes.

Maintenance Code	Application/Explanation
---------------------	-------------------------

F - Direct support is the lowest level that can do complete repair of the item.

Z - Nonreparable. No repair is authorized.

(3) **Recoverability Code.** Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	Application/Explanation
------------------------	-------------------------

Z - Nonreparable item. When unserviceable, condemn and dispose of at the level of maintenance shown in the third position of the SMR code.

F - Repairable item. When uneconomically repairable, condemn and dispose of the item at the direct support level.

c. *CAGEC, Column (3).* The commercial and government entity code is a five-digit code which is used to identify the manufacturer, distributor, or government agency/activity that supplies the item.

d. *PART NUMBER, Column (4).* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the number listed.

e. *DESCRIPTION AND USABLE ON CODE, Column (5).* This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item. Following the description is the Usable On Code (UOC) which identifies the equipment model in which the listed part is used. Usable On Codes include:

- LBL Part is used only in Battery Charger PP-8444/U
- LHW Part is used only in Battery Charger PP-8444A/U

If no UOC is provided, the listed part is commonly used in both battery chargers.

(2) The statement "END OF FIGURE" appears just below the last item description in column (5) for a given figure.

f. *QTY, Column (6).* The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

C-4. EXPLANATION OF INDEX FORMAT AND COLUMNS (SECTION IV)

a. *National Stock Number (NSN) Index.*

(1) *STOCK NUMBER Column.* This column lists the NSN in national item identification number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN.

NSN	When using this column to locate an item, ignore the first four digits of the NSN. Use the complete NSN (13 digits) when requisitioning items by stock number.
(e.g., 5385-01-574-1475)	
NIIN	

(2) *FIG. Column.* This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II.

(3) *ITEM Column.* The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. Part Number Index. Part numbers in this index are listed by part number in ascending alphanumeric sequence (vertical arrangement of letters and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

(1) *PART NUMBER Column.* Indicates the part number assigned to the item.

(2) *FIG. Column.* This column lists the number of the figure where the item is identified/located in Section II.

(3) *ITEM Column.* The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

5. **REFERENCE DESIGNATOR INDEX** (Not applicable.)

6. **SPECIAL INFORMATION** (Not applicable.)

7. **HOW TO LOCATE REPAIR PARTS**

a. When National Stock Numbers or Part Numbers are Not Known.

(1) *First.* Using the table of contents, determine the assembly or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) *Second.* Find the figure covering the functional group or the subfunctional group to which the item belongs.

(3) *Third.* Identify the item on the figure and note the item number.

(4) *Fourth.* Look in the repair parts list for the figure and item numbers. The part numbers are on the same line as the associated item numbers.

b. When National Stock Number or Part Number is Known.

(1) *First.* If you have the national stock number, look in the STOCK NUMBER column of the National Stock Number Index. The NSN is arranged in national item identification (NIIN) sequence (see paragraph 4a). Note the figure and item number next to the NSN.

(2) *Second.* Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

NOTE

If you have the part number, look in the PART NUMBER column of the part number index. Identify the figure in section II.

C-8. **ABBREVIATIONS** (Not applicable)

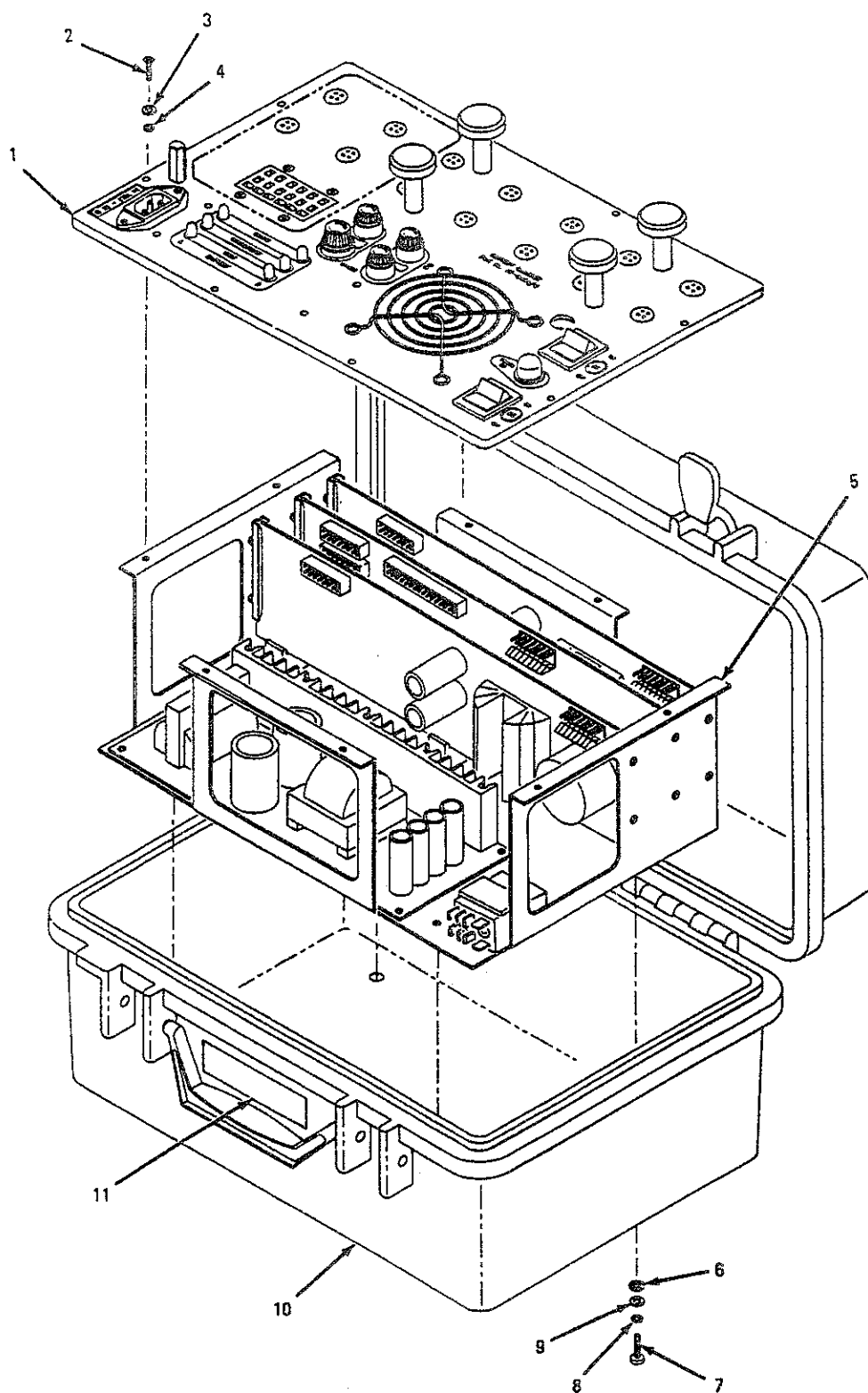


Figure C-1. Universal Portable Battery Charger, PP-8444/U or PP-8444A/U

SECTION II			TM11-6130-489-13&P		(6)	(7)
(1)	(2)	(3)	(4)	(5)		
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
GROUP 00 UNIVERSAL PORTABLE BATTERY CHARGER, PP-8444/U OR PP-8444A/U						
FIGURE C-1						
1	XBFFF		51828	470170-CHARGER	PANEL ASSY SEE FIG C-2 FOR PARTS BREAKDOWN.....	1
2	PAFZZ		51828	570132	SCREW,MACHINE 6-32 X 1/2 IN. LG PH.	3
3	PAFZZ		51828	570126	WASHER,LOCK NO. 6.....	3
4	PAFZZ		51828	570133	WASHER,FLAT NO. 6.....	3
5	XBFFF		51828	470182-CHARGER	MAIN CHASSIS ASSY SEE FIG. C-3 FOR PARTS BREAKDOWN.....	1
					UOC:LBL	
5	XBFFF		51828	470182-CHARGER-1	MAIN CHASSIS ASSEMB SEE FIGURE C-3 FOR PARTS BREAKDOWN.....	1
					UOC:LHW	
6	PAFZZ		2V507	90130A009	WASHER,FLAT NO. 8.....	4
7	PAFZZ		51828	570129	SCREW,MACHINE 8-32 X 1/2 IN. LG PH.	4
8	PAFZZ		51828	570131	WASHER,FLAT NO. 8.....	4
9	PAFZZ		51828	570130	WASHER,LOCK NO. 8.....	4
10	XBFFZ		51828	450221-1	CASE, MODIFIED.....	1
11	XBFFZ		51828	700284	PLATE, IDENT.....	1
					UOC:LBL	
11	XBFFZ		51828	690190	PLATE,IDENTIFICATIO.....	1
					UOC:LHW	

END OF FIGURE

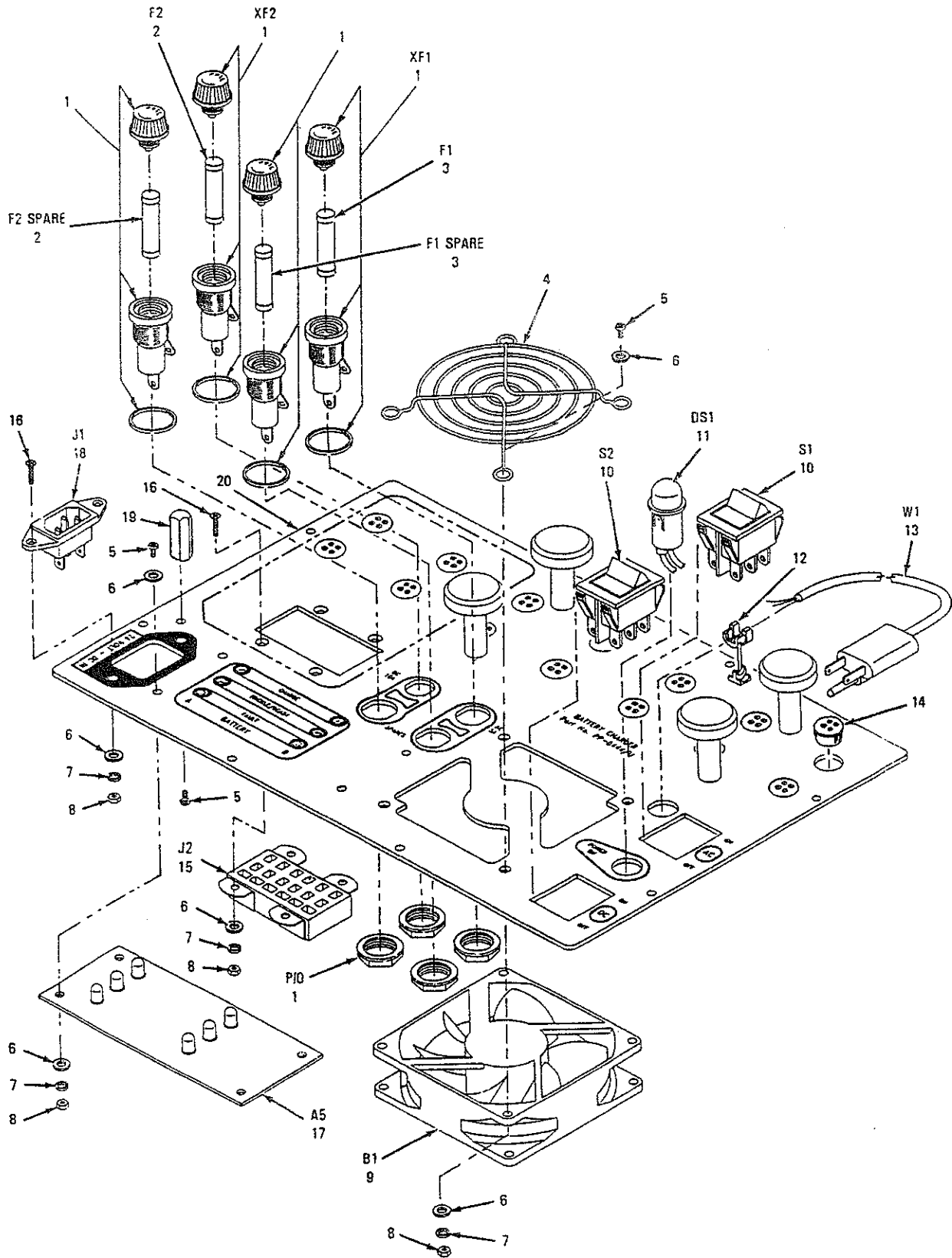


Figure C-2. Panel Assembly

SECTION II			TM11-6130-489-13&P			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
GROUP 01 PANEL ASSEMBLY						
FIGURE C-2						
1	PAFZZ	5920008588161	75915	342-048	FUSEHOLDER, EXTRACTO.....	4
2	PAOZZ	5920003089743	75915	312010	FUSE, CARTRIDGE 10 AMPERE 3AG.....	2
3	PAOZZ	5920002846787	81349	F02A250V5A	FUSE, CARTRIDGE 5 AMPERE 3AG.....	2
4	XBFZZ		OACZ1	08172	GRILL, METAL.....	1
5	PAFZZ		51828	570132	SCREW, MACHINE 6-32 X 1/2 IN. LG PH.	9
6	PAFZZ		51828	570133	WASHER, FLAT NO. 6.....	26
7	PAFZZ		51828	570126	WASHER, LOCK NO. 6.....	14
8	PAFZZ		51828	570134	NUT, PLAIN, HEXAGON 6-32.....	14
9	PAFZZ		OD1M6	3110KL-05W-B40	FAN, TUBEAXIAL.....	1
10	PAFZZ		27192	2602-11E	SWITCH, ROCKER DPDT.....	2
11	PAFZZ		91802	1090A28	LIGHT, INDICATOR.....	1
12	XBFZZ		51828	570138	STRAIN RELIEF.....	1
13	PAFZZ		51828	590233	CABLE ASSEMBLY, POWE.....	1
14	XBFZZ		51828	630126	CAP, VENT.....	14
15	PAFZZ	5935002012473	71785	S318-AB	CONNECTOR, RECEPTAC.....	1
16	PAFZZ		51828	570125	SCREW, MACHINE 6-32 X 1/2 IN. LG FH.	6
17	PAFZZ	5998014344329	51828	590221	CIRCUIT CARD ASSEMB.....	1
18	PAFZZ		OGV90	PX0575/15/48	CONNECTOR, PLUG, ELEC.....	1
19	PAFZZ		51828	570127-1	PIN, STRAIGHT, HEADLE.....	1
20	XBFZZ		51828	470170-1	PANEL, BLANK.....	1

END OF FIGURE

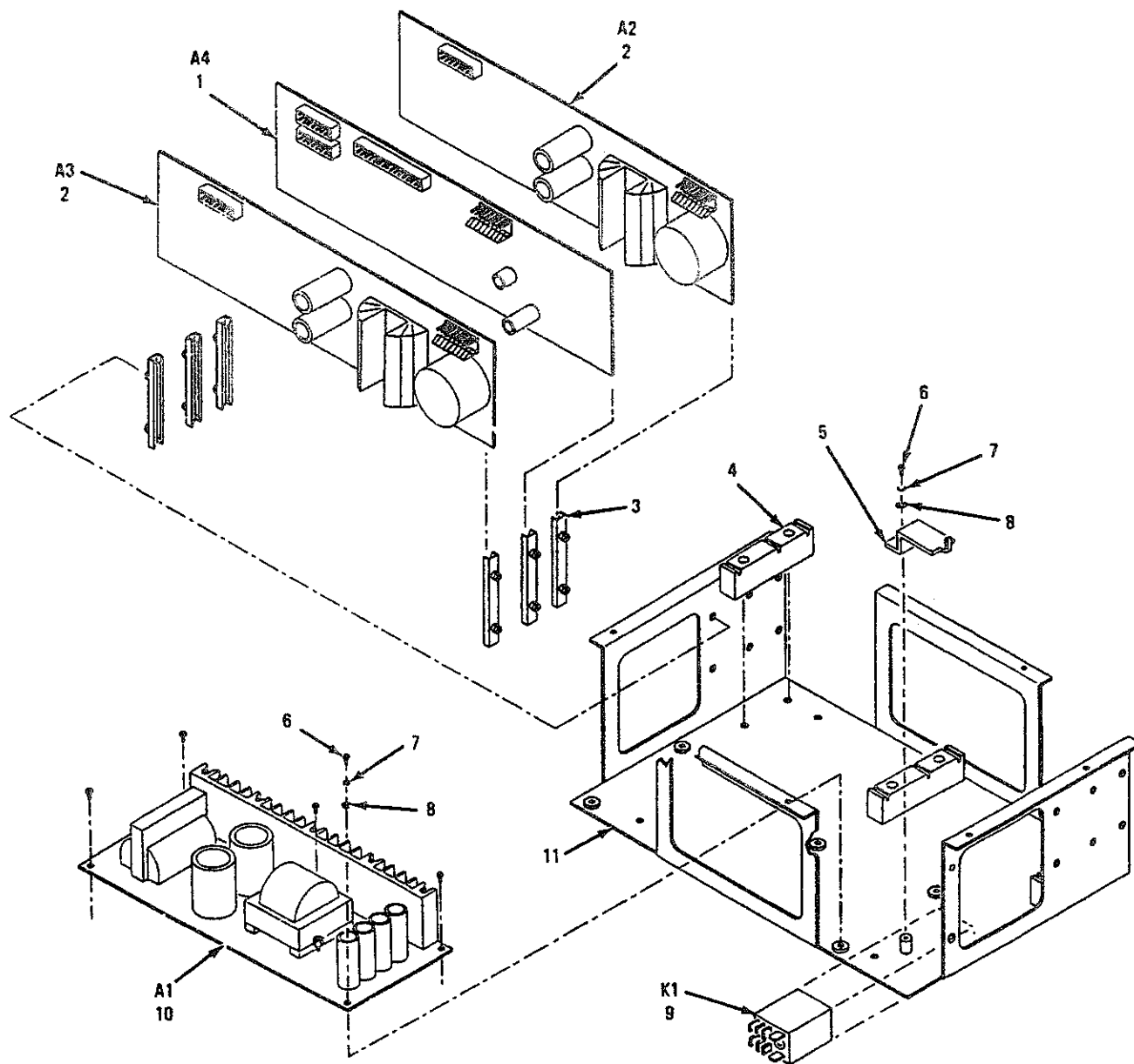


Figure C-3. Main Chassis Assembly

SECTION II			TM11-5130-489-13&P			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
GROUP 02 MAIN CHASSIS ASSEMBLY						
FIGURE C-3						
1	PAFZZ	5998014344330	51828	590219	CIRCUIT CARD ASSEMB.....	1
2	PAFZZ	5998014344326	51828	590220	CIRCUIT CARD ASSEMB.....	2
3	XBFZZ		51828	590232	GUIDE, CKT CARD.....	6
4	XBFZZ		51828	450360	SPACER, PLATE.....	3
5	XBFZZ		51828	470186	BRACKER,ANGLE.....	1
6	PAFZZ		51828	570132	SCREW,MACHINE 6-32 X 1/2 IN. LG PH.	5
7	PAFZZ		51828	570126	WASHER,LOCK NO. 6.....	5
8	PAFZZ		51828	570133	WASHER,FLAT NO. 6.....	5
9	PAFZZ		61964	LY2DC24	RELAY,ARMATURE.....	1
10	PAFZZ	6130014344327	51828	590178	POWER SUPPLY.....	1
					UOC:LBL	
10	PAFZZ		51828	590199	POWER SUPPLY ASSEMB.....	1
					UOC:LHW	
11	XBFZZ		51828	470182	CHASSIS.....	1
					UOC:LBL	
11	XBFZZ		51828	470189-1	CHASSIS.....	1
					UOC:LHW	

END OF FIGURE

SECTION IV

TM11-6130-489-138P

CROSS-REFERENCE INDEXES

STOCK NUMBER	NATIONAL STOCK NUMBER INDEX		FIG.	ITEM
	FIG.	ITEM		
5935-00-201-2473	2	15		
5920-00-284-6787	2	3		
5920-00-308-9743	2	2		
5920-00-858-8161	2	1		
5945-01-399-2243	3	9		
5998-01-434-4326	3	2		
6130-01-434-4327	3	10		
5998-01-434-4329	2	17		
5998-01-434-4330	3	1		

SECTION IV

TM11-6130-489-13&P

CROSS-REFERENCE INDEXES

CAGEC	PART NUMBER	PART NUMBER INDEX STOCK NUMBER	FIG.	ITEM
81349	F02A250V5A	5920-00-284-6787	2	3
61964	LY2DC24	5945-01-399-2243	3	9
QGV90	PX0575/15/48		2	18
71785	S318-AB	5935-00-201-2473	2	15
0ACZ1	08172		2	4
91802	1090A28		2	11
27192	2602-11E		2	10
0D1M6	3110KL-05W-B40		2	9
75915	312010	5920-00-308-9743	2	2
75915	342-048	5920-00-858-8161	2	1
51828	450221-1		1	10
51828	450360		3	4
51828	470170-CHARGER		1	1
51828	470170-1		2	20
51828	470182		3	11
51828	470182-CHARGER		1	5
51828	470182-CHARGER-1		1	5
51828	470186		3	5
51828	470189-1		3	11
51828	570125		2	16
51828	570126		1	3
			2	7
			3	7
51828	570127-1		2	19
51828	570129		1	7
51828	570130		1	9
51828	570131		1	8
51828	570132		1	2
			2	5
			3	6
51828	570133		1	4
			2	6
			3	8
51828	570134		2	8
51828	570138		2	12
51828	590178	6130-01-434-4327	3	10
51828	590199		3	10
51828	590219	5998-01-434-4330	3	1
51828	590220	5998-01-434-4326	3	2
51828	590221	5998-01-434-4329	2	17
51828	590232		3	3
51828	590233		2	13
51828	630126		2	14
51828	690190		1	11
51828	700284		1	11
2V507	90130A009		1	6

APPENDIX D**ADDITIONAL AUTHORIZATION LIST**

Section I. INTRODUCTION**D-1. SCOPE**

This appendix lists additional items that you are authorized for the support of Battery Charger PP-8444/U or PP-8444A/U.

D-2. GENERAL

This list identifies items that do not have to accompany the battery charger and do not have to be turned in with it. These items are authorized to you by CTA, MTOE, TDA, or JTA.

D-3. EXPLANATION OF LISTING

National Stock Numbers, description, and quantities are provided to help you identify and request the additional items you require to support this equipment. If the item required differs for different models of this equipment, see the "Used On Code" column for the applicable model or models. Codes used are:

USED ON CODE**MODEL**

Not applicable

Section II. ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description CAGEC &Part Number Used On Code	(3) U/M	(4) Qty Rcm
5940-01-427-9110	ADAPTER, BATTERY TERMINAL J-6358/P (51828) AP-390A/U	ea	1
5940-01-427-8601	ADAPTER, BATTERY TERMINAL J-6357/P (51828) AP-388/U	ea	1
5940-01-427-9247	ADAPTER, BATTERY TERMINAL J-6355/P (51828) AP-503A/U	ea	1
5940-01-427-9183	ADAPTER, BATTERY TERMINAL J-6356/P (51828) AP-516A/U	ea	1
5940-01-427-9278	ADAPTER, BATTERY TERMINAL J-6354/P (51828) AP-2847/U	ea	1
5940-01-427-9395	CABLE ASSEMBLY, DC J-6362/V (51828) AP HUMMER	ea	1
N/A	COMMERCIAL 220 ADAPTER PLUG	as	1



SOMETHING WRONG WITH THIS PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
 Commander
 Stateside Army Depot
 ATTN: AMSTA-US
 Stateside, N.J. 07703-5007

DATE SENT
 10 July 1975

PUBLICATION NUMBER

TM 11-5840-340-14&P

PUBLICATION DATE

23 Jan 74

PUBLICATION TITLE

Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
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2-25	2-28		
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3-10	3-3		
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5-6	5-8		
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FO-3

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Recommend that the installation antenna alignment procedure be changed throughout to specify a 2⁰ IFF antenna lag rather than 1⁰.

REASON: Experience has shown that with only a 1⁰ lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing stress to the drive train. Hunting is minimized by adjusting the lag to 2⁰ without degradation of operation.

Item 5, Functions of Chann. Change "2 dB" to "3 dB".

REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 dB (500 watts) adjustment to light the TRANS POWER FAULT indicator.

and new step f.1 to read, "Replace cover plate removed in step above."

REASON: To replace the cover plate.

Zone C 3. On J1-2, change "+24 VDC" to "+5 VDC".

REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SSG I. M. DeSpirito 999-1776

SIGN HERE

DA FORM 2028-2
1 JUL 79PREVIOUS EDITIONS
ARE OBSOLETE

P.S. - IF YOUR OUTFIT WANTS TO KNOW ABOUT OUR
 RECOMMENDATION MAKE A CARBON COPY OF THIS
 AND GIVE IT TO YOUR HEADQUARTERS.

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REVERSE OF DA FORM 202K-2

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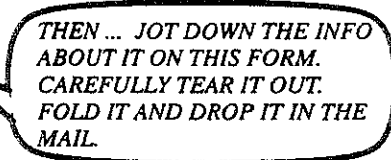
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AND WHAT SHOULD BE DONE ABOUT IT:**

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NO

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ABOUT IT ON THIS FORM.
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FOLD IT AND DROP IT IN THE
MAIL.

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Chief of Staff

Official:


JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army

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