This copy is a reprint which includes current pages from Change 1. Title was changed by Change 1.

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL DIRECT SUPPORT,

AND GENERAL SUPPORT MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

TEST SETS, BATTERY

TS-2530/UR

(NSN 6625-00-933-61 12)

AND

TS-2530A/UR

(NSN 6625-00-238-0223)

HEADQUARTERS, DEPARTMENT OF THE ARMY

OCTOBER 1973

TECHNICAL MANUAL

No. 11-6625-2631-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *30 October 1973*

Operator's, Organizational, Direct Support, and General Support Maintenance Manual Including Repair Parts and Special Tools Lists TEST SETS, BATTERY TS-2530/UR (NSN 6625-00-933-6112) AND TS-2530A/UR (NSN 6625-00-238-0223)

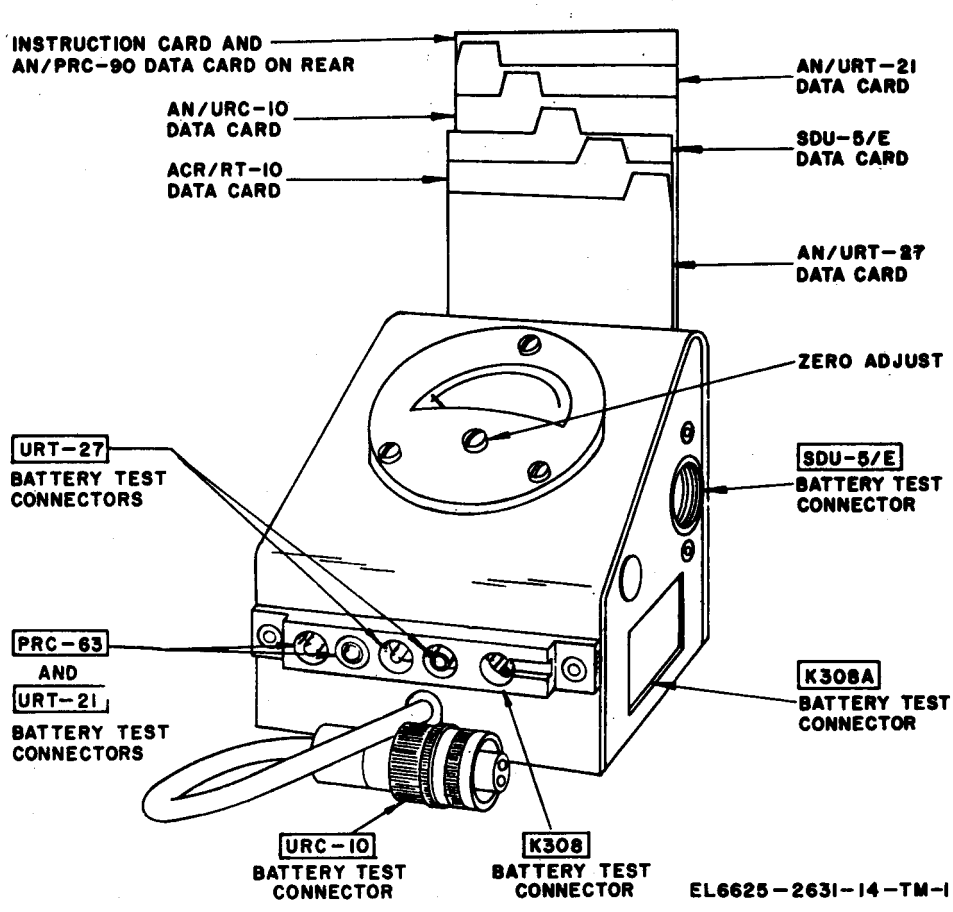


Figure 1-1. Battery Test Sat TS-2530/UR.

CHAPTER 1
INTRODUCTION

Section I GENERAL

1-1. Scope

a. This manual describes Teat Set, Battery TS-253/UR (fig. 1-1, FSN 6625-933-6112. Information provided herein includes description, installation, operation, functioning of equipment organizational and general support maintenance.

b. complete listing of applicable publications is provided in appendix A the maintenance allocation chart (MAC) is provided in appendix B and the repair parts and special tools list is provided in appendix C.

c. Appendix C is current as of 31 August 1978.

1-2. Indexes of Publications

a.DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to this equipment.

b. DA Pam 310-7. Refer to the latcst issue of DA Pam 310-7 to determine whether there are modification work oders (MWOs) pertaining to this equipment.

1-3. Forms and Records

a. Reports of Maintentnce and Unsatisfatory Equipment Maintenance forms records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribe by TM 38-750.

b. Report of Packaging and Handling Deficiencies Fill out and forward DD Farm 6 (Packaging Improvement Report) as prescribed in AR 700-58/NAVSUPINST 4030.29/AFR 71-13/MCO P403029& and DSAR 4145.8.

c. Discrepancy in Shipment Report (DLSREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 /NAVSUPINST 4610.33 A/AFR 75-18/MCO P461O.19B and DSAR 4500.15.

1-4. Destruction of Army Materiel To Prevent Enemy Use

Refer to TM 750-244-2 for procedures to he used for this equipment.

1-5. Administrative Storage

Refer to TM 750-90-1 for procedures to be used when equipment is to be placed in administrative storage.

1-6. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward direct to Commander, US Army Electronics Command, ATTN. DRSEL-MA-Q, Fort Monmouth, NJ 07703.

1-6.1. Reporting Equipment Improvement Recommendations (EIR)

EIR's will be prepared using DA Form 2407, Maintenance Request. Instructions for preparing EIR's are provided in TM 38-750, the Army Maintenance Management System. EIR's should be mailed direct to Commander, US Army Electronics Command, ATTN: DRSELMA-Q, Fort Monmouth, NJ 07703. A reply will be furnished direct to you.

Section II. DESCRIPTION AND DATA

1-7. Purpose and Use (fig. 1-1)

a.Purpose. Test Set Battery TS-2530/UR is a portable device which is used to check battery condition and determine remaining hours of life for batteries used in various types of radio sets and rescue lights. Test set meter reading s for batteries under test are converted into life-hour figures by the use of battery data cards for each type of battery.

b. Use . The test set is used principally by organizational maintenance personnel to determine the state of discharge of the batteries listed in paragraph c. The test provides a chart fcr each battery typewhich indicates the relation of the state of battry dischage to life expectancy at various temperature . Depending on the results obtained from interpreting the test set meter readings versus the respective battery data , a battery maybe acceptable for further use, or may be rejected and discarded.

c. *Appliation Data* Batteries used in the following equipments can be test by Test Set, Battery TS-2530/UR:

(1) Radio Set AN/URC-10.

NOTE

The TS-2530/UR and TS-2530A/UR battery data cards for the AN/PRC-90 are incorrect and are not to be used. Refer to paragraph 7-3 of data sheets for updated battery test information for both test set models when testing battery BA-1568/U.

(2) Radio Set ACR/RT-10.

(3) Radio set AN/URT-21.

(4) Radio set AN/URT-27.
(5) Radio set AN/PRC-63.
(6) Radio Set AN/PRC-90 (with Adapter, Battery Test MX-8801/PRC-90).
(7) Rescue Light SDU-5/E.

1-8. Tabulated Data

a. Common Nomenclature Table 1-1 lists the nomenclature, common name, and function for the equip ment.

Table 1-1. Nomenclature and Common Names

Nomenclature	Common name	Description and/or function
Test Set, Battery TS-2530/UR	Battery test set or test set	Tests batteries used in radio sets and rescue light listed in paragraph 1-7c.
Adapter, Battery Test MX-8801/PRC-90	Test adapter	Test fixture used to interface AN/PRC-90 batteries with the test set connector.

b. Items Comprising an Operable Test Set, Battery TS-2530/UR. The items listed in table 1-2 make up an operable Test Set, Battery TS-2530/UR. One copy of this manual is packed with each test set.

Table 1-2. Items Comprising an Operable Test Set, Battery, TS-2530/UR

Item	Dimensions (in.)				FSN
	Quantity	Height	Depth	Width	
Test Set, Battery TS-2530/UR consisting of:	1	5¼	5¼	4¼	6625-933-6112
AN/URT-27 data card	1	4½	...	3	
ACR/RT-10 data card	1	4½	...	3	
SDU-5/E data card	1	4½	...	3	
AN/URC-10 data card	1	4½	...	3	
AN/URT-21 data card	1	4½	...	3	
TS-2530/UR instruction card	1	4½	...	3	
AN/PRC-90 data card (decal affixed to rear of instruction card)	1	...	...	...	
Adapter, Battery Test MX-8801/PRC-90 (adapter cable length is 3 feet)	1	1⅝	2	5½	6625-480-6315

1-9. Description

(fig. 1-1)

The test set is a lightweight, self-contained portable unit requiring no power source other than that developed by tbe battery under test. Internal components are mounted on a printed wiring board and are accessible for maintenance once the unit is disassembled. The test set also includes an arbitrary-scale meter for computing remining hours of battery life in conjunction with the battery data cards contained up tive in a compartment on the rear of the unit. The battery data cards are shown in figure 1-2. In addition, the teat set provides front panel connectors, a test cable, and two battery insertion compartments for connection to the various batteries tested. Battery Teut Adapter MX-8801/PRC-90 (fig. 1-3) interfaces the PRC-90 battery with the test set front panel connectors

Figure 1-2.Battery data cards.
(Located in back of manual.)

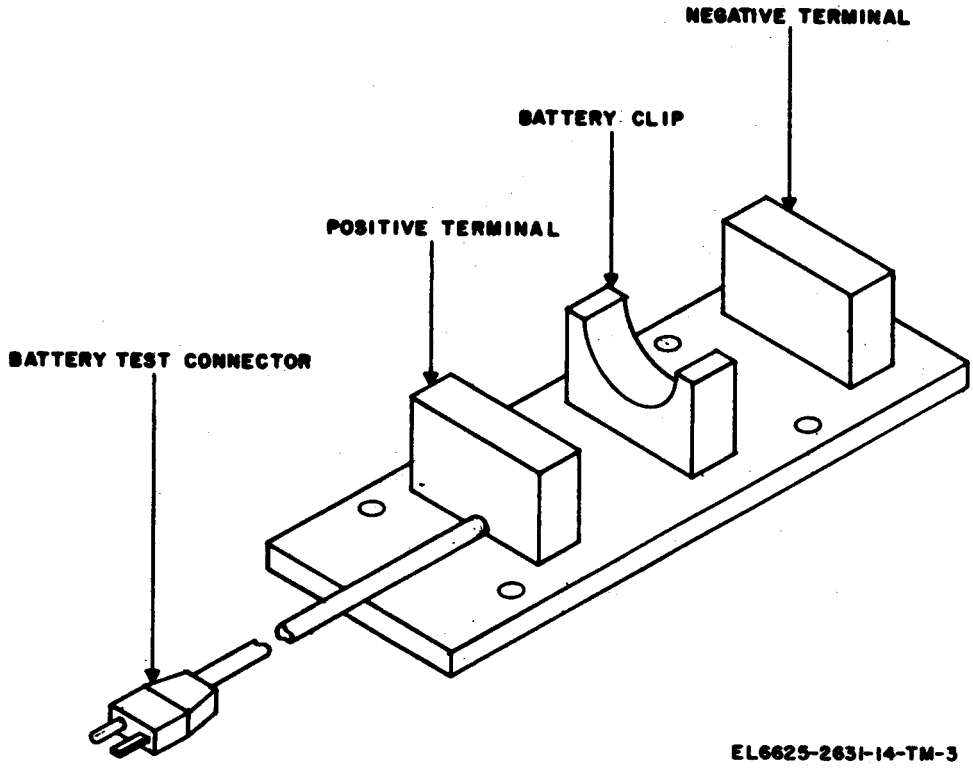


Figure 1-3. Adapter. Battery Test MX-8801 / PRC-90.

1-10. Additional Equipment Required

No additional requirements exist for equipment other than that listed in table 1-2 when the test set is used for its intended purpose.

CHAPTER 2

SERVICE UPON RECEIPT AND INSTALLATION

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

2-1. Unpacking

When packed for shipment, the test set, test adapter, and technical manual are inclosed together in a corrugated cardboard box. No special procedures are required for unpacking.

2-2. Checking Unpacked Equipment

a. Inspect the test set for damage incurred during shipment. If the test set has been damaged, report the dam age on DD Form 6.

b. Check to see that the test set is complete, as listed on the packing slip. If a packing slip is not available, check the contents against table 1-2. Report all discrepancies in accordance with TM 38-750.

c. Check to see whether the equipment has been changed by a modification work order (MWO). If the equipment has been modified, the MWO number will appear on the front panel. If modified, see that any operational instruction changes resulting from the modification have been entered in the equipment manual. Check also to see whether all MWO'S current at the time the equipment is placed in use have been applied.

NOTE

Current MWO'S applicable to the equipment are listed in DA Pam 310-7.

Section II. INSTALLATION INSTRUCTIONS

2-3. General

The TS-2530/UR is a hand-carried test equipment, packaged and shipped with Battery Test Adapter MX-8801 / PRC-90 as a complete unit with all parts and components installed. Therefore, no tools, materials, or installation instructions are required.

2-4. Initial Checking and Adjustment of Equipment

NOTE

Adjusting the TS-2530 / UR is limited to the meter zero adjustment. Use a non-metallic screwdriver to adjust meter zero, without any battery connected to the test set.

Perform a preliminary operational check on the TS-2530 / UR as follows:

a. Obtain an unused, fresh battery BA-1568/ U from Radio Set AN/ PRC-90.

b. Obtain an operable TS-2530 / UR and Battery Test Adapter MX-8801 / PRC-90.

NOTE

If possible, retain a TS-2530 / UR, MX-8801 / PRC-90. and BA-1568 / U for the AN / PRC-90 as a maintenance standard.

c. Perform the appropriate operating procedures indicated in paragraph 3-4.

CHAPTER 3

OPERATING INSTRUCTIONS

Section I. OPERATOR'S CONTROLS AND INSTRUMENTS

3-1. General

The TS-2530 / UR test set does not require any power source other than the power supplied by the battery under test. The TS-2530 / UR can be operated at a maintenance facility or hand-held on a flight line.

3-2. Controls, Connectors, and Indicators

Test aet operating controls, connectors, and indicators are shown in figure 1-1 and are described in table 3-1.

Table 3-1. Operator's Controls (fig. 1-1)

Control connector. or indicator	*Function*
URT-21 , PRC-63 connector	Provides connection for testing of Radio Set AN/ URT-21 battery, or Radio Set AN/ PRC-63 battery, or Radio Set AN/ PRC-90 battery (when test adapter MX-8801 / PRC-90 is used).
URT-27 connector	Provides connection for testing of Radio Set AN/ URT-27 battery.
URC-10 cable and connector	Provides cable connection for testing of Radio Set AN / URC-10 battery.
K308 connector	Provides connection for testing of type K308 batteries.
K308A connector recese	Provides matching connector receptacle for testing of Radio Set ACR / RT-10 battery.
SDU-5 / E connector recess	Provides matching connector receptacle for testing of Rescue Light SDU-5 / E battery.
Test meter	Provides an indication *of* relative battery condition and, when used with respective battery data cards, indicates remaining hour of battery life
Battery data cards	Plasticized data charts which indicate the relationship between the state of battery discharge to life expectancy at various temperatures for tested batteries

Section II. OPERATION

3-3. Preparation for Use

No special Procedures are required before operating the test act. However, the following precautions should be observed:

a. Always check the date of manufacture on the battery to be tested. Discard batteries that are more than two years old, regardless of battery teat indications.

NOTE

The date of battery manufacture is stamped on the battery casing and is abbreviated by a four digit code number: the first two digits represent the month; the last two digits represent the year.

b If the initial teat oat meter reading fluctuates during test of the battery, allow five minutes for reading to stabilize before evaluating the battery condition.

3-4. Normal Operating Procedures

a. Battery Test Connections. The types of batteries tested by the unit, and the respective test connectors are described in the following paragraphs:

(1) AN / URT-21 or AN / PRC63 batteries are connected to the test set with the male connector (red lead) to the + terminal; and the female connector (black lead) to the — terminal. Both terminals are located" on the front connector block beneath the URT-21, PRC-63 designations.

(2) AN / URT-27 batteries are connected to the test set with the male connector (red lead) to the + terminal; and the female connector (black lead) to the — terminal. Both terminals are located on the front connector block beneath the URT-27 designation.

(3) AN/ URC-1O batteries are connected to the test set via the molded cable / connector assembly located beneath the connector block, designated URC-10.

(4) SD U-5 / E batteries are screwed into a special receptacle located on the right side of the test set, designated SD U-5 / E. Battery terminal contact is made through the battery epoxy surface, which is penetrated by sharp rigid wire contacts with in the test set connector; be sure that the battery is fully screwed into the receptacle.

(5) ACR / RT-1O batteries are inserted into one of two receptacles on the test set. Two different battery configurations are used with this type of radio set. One type of battery is formed as part of the rear cover assembly and must be tested through its lead terminations at the connector designated K308 on the front connector block; the second type of battery is detachable from the rear cover and is tested by insertion into the receptacle designated K308A on the right side of the test set. This battery also uses an epoxy material over the battery contacts; to allow the test set wire contacts to penetrate this material, the battery must be firmly inserted and held in place while the meter readings are interpreted.

(6) AN/ PRC-90 batteries require the use of special Battery Test Adapter MX-8801 / PRC-90, to interface the battery terminals with the test set connector. The adapter leads are first connected to the battery test set connector block terminals designated PRC-63, with the male connector (red lead) to the + terminal; and the female lead (black lead) to the — terminal. The battery is then inserted into the adapter in accordance with the polarity markings. A typical test configuration for this battery is shown in figure 3-1.

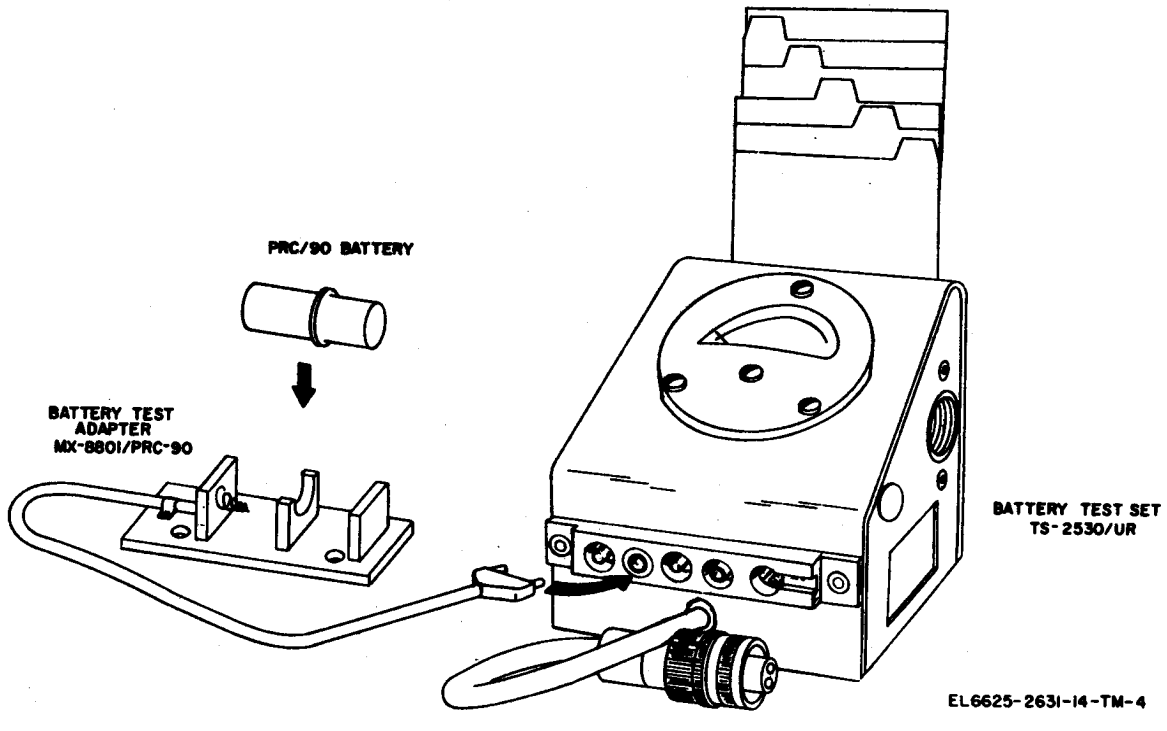


Figure 3-1. AN/ PRC-90 battery (BA-1568 / U) test setup.

b. Procedure. The following procedure describes a typical battery test:

CAUTION

Permanent damage may occur to the test set if battery polarity is not observed during test connections.

(1) Check the date of manufacture on the battery in accordance with the information in paragraph *3-3a*.

(2) Install the AN / PRC-90 battery and test adapter connections as described in *a* (6) above and figure 3-1.

(3) Observe the test set meter reading and convert the reading to APPROXIMATE HOURS OF OPERATING TIME REMAINING by reference to the AN / PR C-90 battery data card.

(4) Reject battery if battery test indicates that life hours remaining are less than 60%0f maximum; otherwise, battery is considered acceptable for further use.

(5) Remove the battery from the test adapter and disconnect the test adapter from the test set.

3-5. Operating Under Unusual Conditions

The test set is designed for use under field conditions, However, it should not be subjected to salt spray, dust, or rainstorms during use. For protection, during these conditions, the equipment should be used under cover.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

NOTE

The operator will perform organizational maintenance. All test set repairs will be referred to general support maintenance.

Section I. REPAINTING AND REFINISHING INSTRUCTIONS

4-1. Tools, Materials, and Test Equipment

Tools, materials, and test equipment prescribed for organizational maintenance are as follows:

a. Lint-free cloth.
b. Trichloroethane.
c. Sandpaper, fine (Number 000).
d. Small soft-bristled brush.
e. Tool Kit Electronic Equipment TK-101 / G.
f. Multimeter AN/ URM-105.

4-2. Cleaning and Lubrication

a. Cleaning. Inspect the exterior of the test set. The exterior surfaces should be free of dust, dirt, grease, and fungus.

(1) Remove dust and loose dirt with a clean soft cloth.

WARNING

The fumes of trichloroethane are toxic. Provide thorough ventilation whenever used. DO NOT USE NEAR AN OPEN FLAME. Trichloroethane is not flammable, but exposure of the fumes to an open flame or hot metal surface forms highly toxic phosgene gas.

(21) Remove grease, fungus, and ground-in dirt from the case with a cloth dampened (not wet) with trichloroethane.

(3) Remove, with a brush, dust and dirt from cabling and connectors. Remove grease and grime with a lint-free cloth moistened with trichloroethane.

(4) Clean meter glass with a cloth dampened (not wet) with trichloroethane.

(5) Use a soft, clean cloth to clean the front panel and connector block. If dirt is difficult to rem eve, dampen the cloth with water and use a mild soap, if necessary.

b. Lubrication. No lubrication is necessary.

4-3. Repainting and Refinishing

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper.. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to SB 11-573, Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment, to determine the paint or preservative to be used. Refer to TB 746-10, Field Instructions for Painting and Preserving Electronic Equipment, for applicable cleaning and refinishing practices.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

4-4. General

To insure that the TS-2530 / UR is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in tables 4-1 through 4-3. The item numbers indicate the sequence of and minimum. inspection required. defects discovered during operation of the unit will be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment. Record all deficiencies together with the corrective action taken.

4-5. Daily Preventive Maintenance Checks and Service

Preventive maintenance checks and services of the test set are required daily. A daily period is defined as 8 hours of equipment operation. Table 4-1 specifies cheeks and services that must be per-

formed daiIy or under the special conditions listed below:

a. When the equipment is initially received.

b. At least once a week, if the equipment is maintained in a *standby* condition.

Table 4-1. Daily Preventive Maintenance Checks and Services

Sequence number	Item to be inspected procedure	Work time (M /H)
	EXTERIOR SURFACES Clean the equipment (para 4-2) exterior surfaces end meter glass. If meter pointer is bent or if meter glass is cracked, refer to a higher category of maintenance for repairs.	0.1
2	CONNECTORS Check connectors for loose or insecure connection; tighten as required. Refer to a higher category of maintenance for repairs.	0.1
3	O P E R A T I O N During operation (para 3-4) be alert for any evidence of unusual performance or faulty operation. If the test set fails to operate properly, perform visual inspections; refer to a higher category of maintenance for repairs.	0.5

4-6. Monthly Preventive Maintenance Checks and Services

Perform the monthly preventive maintenance checks and services indicated in table 4-2 once each month in addition to those given in table 4-1, daily preventive maintenance checks and services. A monthly interval is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours per day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment used less than 8 hours per day, or maintained in a *standby* condition (ready for immediate operation) must have monthly preventive maintenance checks performed on it. Equipment in limited storage (requires services before operation) does not require monthly preventive maintenance. At the organizational category, monthly preventive maintenance consists of visual inspection of the TS-2530 / UR and MX-8801 / PRC-90 and a continuity check of the test adapter MX-8801 / PRC-90, as listed in table 4-2. Any corrective action will be taken at a higher category of maintenance.

Table 4.2. Monthly Preventive Maintenance Checks and Services

Sequence number	Item to be Inspccted procedure	Worktime (M/ H)
l	CONNECTORS, JACKS, AND SCREWS a. Hand-check these exterior items for looseness. Tighten as necessary, b. Check for missing hardware. Replace as necessary.	0.1
2	BATTERY TEST ADAPTER MX-8801 / PRC-90 lnspect cable assembly and connector termination for signs of chafing, cracked or frayed insulation, damaged or corroded contacts. Use multimeter to check continuity of adapter (para 4-9). Refer to higher category of maintenance for repair or replacement.	0. l
3	EXTERIOR SURFACES Inspect all exposed metal surfaces for rust and corrosion. Touch up surfaces (para 4-3).	0.1

4-7. Quarterly Preventive Maintenance Checks and Services

Perform the quarterly preventive maintenance checks and cervices indicated in table 4-3 once each 3 months (quarterly interval) in addition to the daily (table 4-1) and monthly (table 4-2) preventive maintenance checks and services. A quarterly interval is defined as 90 calendar days of 8-hour-per-day operation. All deficiencies or shortcomings will be recorded, and those not corrected during the

maintenance services and inspection will be immediately reported to higher category maintenance by the use of forms and procedures specified in TM 38-750. Equipment with a deficiency that cannot be corrected at the organizational category should be deadlined in accordance with TM 38-75.0.

Table 4-3. Quarterly Preventive Maintenance Checks and Services

Sequence number	Item to be inspected procedure	Work time (M/ H)
1	COMPLETENESS See that the test set is complete.	0.1
2	PUBLICATIONS Check DA' Pam 310-4 to see that all pertinent publications are available. The technical manuals must be complete and in usable condition without missing pages. All changes pertinent to the publications must he on hand.	0.1
3	MODIFICATION WORK ORDERS Check DA Pam 310-7 to see that all URGENT MWO'S have been applied to the equipment and that all NORMAL MWOS have been scheduled.	0.1

Section III. TROUBLESHOOTING INFORMATION

4-8. Troubleshooting

a. Troubleshooting this equipment at the organizational category is confined to a visual indication of the possible or actual trouble and is based on indications observed during performance of the appropriate preventive maintenance checks and services and actual equipment performance during operation. The only maintenance performed at this category is the continuity testing of Battery Test Adapter MX-8801 / PRC-90.

b. In the event that the test adapter is not defective, and the in malfunction is in the test set, repairs must he accomplished at general support category of maintenance.

4-9. Battery Test Adapter

a. Battery Test Adapter MX-8801 / PRC-90 (fig. 1-3) interconnects the AN/ PRC-90 battery with the TS-2530 / UR via the PRC-63 and URT. 21 test connector. Inspect the adapter for general appearance, tightness of contacts, and battery holder tension. Check spring (+) and base (—) contacts for corrosion. Sand lightly with No. 000 sandpaper to remove corrosion. Check cable for dam aged connectors, chafed or frayed wiring, loose connections.

b. Check cable and connector for continuity with multimeter AN / URM-105, as follows:

(1) Check for continuity between the (+) terminal block on the adapter and the male connector at the cable termination.

(2) Check for continuity between the (—) terminal block on the adapter and the female connector at the cable termination.

c. If cable continuity is not indicated, refer the MX-8801 / PRC-90 to higher category maintenance. If continuity is indicated, refer the test set to a higher category of maintenance.

CHAPTER 5

FUNCTIONING OF EQUIPMENT

5-1. General

Figure 5-1 is a functional block diagram of the test act, showing the test connectors, circuit board, arid test meter, M1, all of which comprise the battery test circuit. *A* schematic diagram of the test set is given in figure 5-2.

5-2. Functional Description

a. The batteries used with the ACR / RT-10 (K308, K308A) and AN / URC-10 radio sets are tested by an incremental voltmeter circuit. This circuit utilizes only a portion of the total battery voltage, as determined by the rating (breakdown) of Zener diode CR 1. The battery under test is loaded down by battery load resistor R 1 and the battery output voltage is connected across the Zener diode circuit R2, R3, CR 1. The Zener diode prevents voltages of less than 9.1 volts (approximately) from causing a meter deflection; therefore, the m meter zero point corresponds to this voltage and an expanded meter scale is provided which offers greater resolution in the more critical area of battery voltage (9.1 to 15.7 volts dc).

b. Batteries used in Radio Sets AN/ URT-21, AN/ PRC-63, AN/ URT-27, and AN/ PRC-90 are also tested by an incremental voltmeter circuit, R4, R5, R6, and Zener diode CR2. Zener diode CR 2 establishes the meter zero point at 3.8 volts (approximately) so that the expanded meter scale reads between 3.8 and 13.5 volts dc.

c. Battery type SDU-5 / E is tested through a separate connector, battery load R 7, and meter multiplier R8, which, with M 1, form a basic voltmeter circuit.

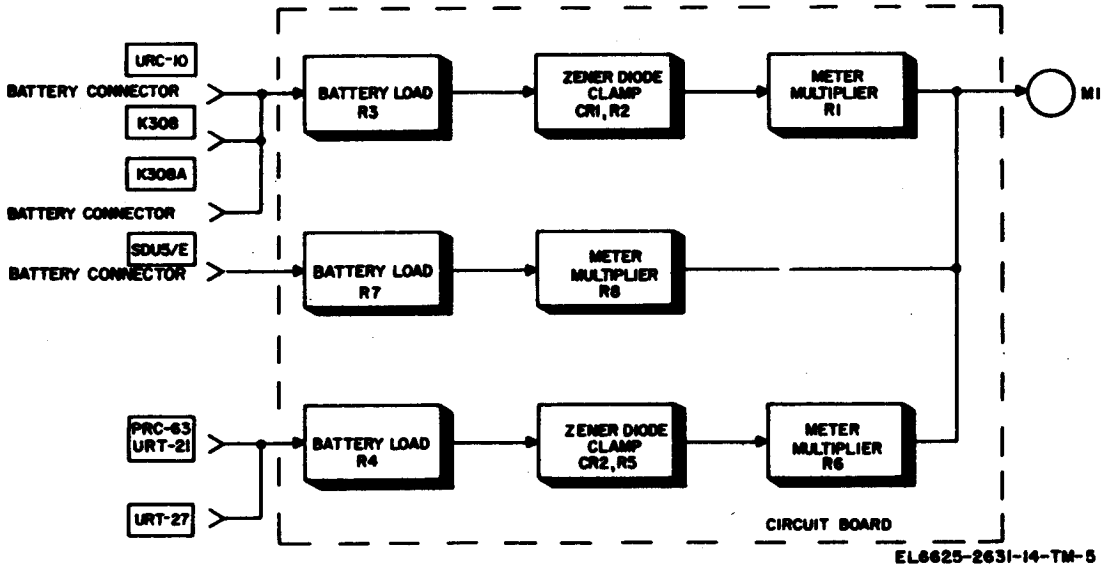


Figure 5-1. Test Set. Battery TS-2530 / UR. functional block diagram.

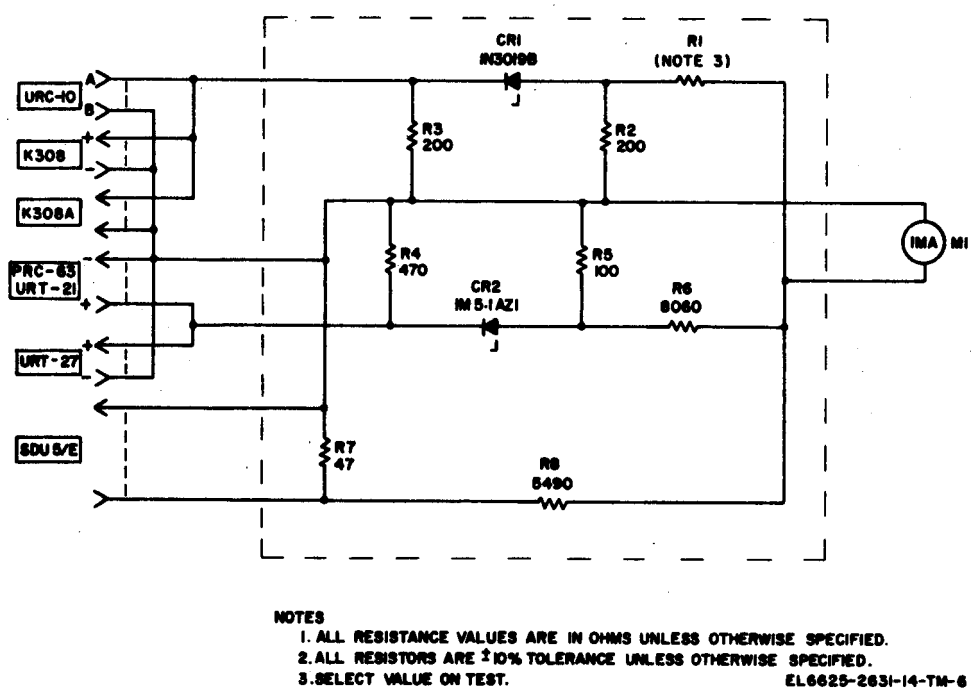


Figure 5-2. Test Set, Battery TS2530 / UR, schematic diagram.

CHAPTER 6

GENERAL SUPPORT MAINTENANCE

Section I. MAINTENANCE PROCEDURES

6-1. Scope of GS Maintenance

General support shops are responsible for all maintenance procedures on the test act. These procedure are listed below, together with reference to paragraphs covering the specific maintenance functions. Refer to paragraph 6-2 for a listing of required tools and test equipment.

a. Operatitonal tests (para 6-3).
b. Troubleshooting (para 6-4).
c. Alignment (para 6-5).
d. Repair (para 6-6).
e. Removal and Replacement (para 6-7).
f. Testing procedures (para 6-8).

6-2. Test Equipment, Tools, and Materials Required for GS Maintenance

All test equipment, tools, and materials required to perform the testing procedure given in this section are listed below.

a. Mutltimeter AN/ USM-223.
b. Power Supply PP-3940 / G or equivalent
c. Tool Kit, Electronic Equipment TK-100 / G.
d. Test batteries, one each of the following:
(1) K308A battery.
(2) AN/ PRC-63 battery.
(3) AN/ PRC-90 battery (BA-1568/U).
(4) SDU-5 / E battery.
(5) AN/ URC-1O battery.
(6) AN/ URT-21 battery.

6-3. Operational Tests

a. New batteries must be treed for these dynamic checks of test set operation.

b. Designate for repair any teat set that fails to provide test indications consistent with battery condition.

c. Perform the operational tests given in table 6-1.

Table 6-1. Test Set Battery TS-2530 / UR, Operational Tests

NOTE
Test only one battery at a time.

Step	*Test equipment*	*Procedure*	*Normal indication*
1	URT-27 battery	Connect battery to URT-27 test connector.	Greater than .80 meter reading.
2	URC-l0 battery	Connect battery to URC-10 test connector.	Greater than .80 meter reading.
3	K308A battery	Insert battery into *K308A* receptacle and seat firmly.	Greater than .80 meter reading.
4	PRC-63 battery	Connect battery to PRC-63 test connector.	Greater than .80 meter reading.
5	PRC-90 battery	Connect battery to URT-21 test connector via Battery Teat Adapter MX-8801 / PRC-90.	Greater than .80 meter reading.
	SDU-5 / E battery	Insert battery into SDU-5 / E receptacle and screw firmly into place.	Greater than .80 meter reading.

Section II. TROUBLESHOOTING, ALIGNMENT, REPAIR, REMOVAL, AND REPLACEMENT

6-4. Troubleshooting

The trobleshooting procedure given in table 6-2 are based on the failure of the teat eat to provide the normal indications listed in table 6-1, operational tests. These failures can be used as a diagnostic aid to determine which components are defective.

Table 6-2 lists typical test set failures and the componentS which should be checked and / or replaced. Refer to paragraph 6-5 for disassembly procedures; see figures 1-1, 6-1, and 6-2 for component locations.

Figure 6-1. Test Set, Battery TS-2530 / UR, exploded view.

(Located at back of manual.)

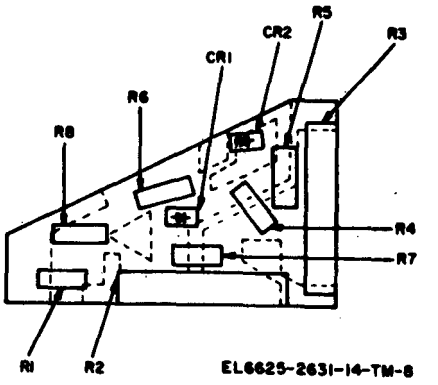


Figure 6-2. Circuit board, parts location.

Table 6-2. Troubleshooting TS-2530 / UR

Item No.	*Malfunction*	*Probable cause*	Corrective action
1	Meter does not return to zero or rests below zero when batteries are not connected.	*a.* Movement not properly zeroed: *b.* Sticking movement, broken pivots. bent pointer.	*a.* Zero meter. using zero adjustment. *b.* Replace test set.
2	Meter indication is irregular.	*c.* Sticking movement. broken pivots, bent pointer.	*a.* Replace test set.
		b. Loose or dirty connector contacts.	*b.* Clean or tighten contacts as required.
3	No meter indication regardless which type of battery is tested.	*a.* Defective meter. *b.* Defective wiring.	*a.* Replace test set. *b.* Check wiring against schematic diagram (fig. 5-2). Repair wiring.
4	No meter indication or faulty meter indication only when tasting K308, K308A, URC-10 batteries.	*a.* Defective resistor in incremental voltmeter circuit.	*a.* With AN / USM-223, check values of RI, R2, R3 against schematic diagram (fig. 5-2). Replace defective resistors.
		b. Defective Zener diode.	*b.* With AN/ USM-223 connected across CR 1 [positive lead to cathode: negative lead to anode). and any one of the three tested batteries connected. check that the voltage drop across CR 1 does not exceed 9.1 volts ± 5%. Replace CR 1 if incorrect voltage is obtained.
		c. Defective wiring.	*c.* Check wiring and circuit board terminations against fig. 5-2. Repair or replace, as necessary.
5	No meter indication or faulty meter indication only when testing AN/ URT-21, AN/ PRC-63, AN/ URT-27, or AN/ PRC-90 batteries.	*a.* Defective resistor in incremental voltmeter circuit.	*a.* With AN/ USM-223, check value of R4, R5, R6 against schematic diagram, figure 5-2. Replace defective resistors.
		b. Defective *Zener* diode.	*b.* With AN/ USM-223 connected across CR 2 [positive lead to cathode; negative lead to anode), and any one of the four tested batteries connected, check that the voltage drop across CR 2 does not exceed 3.8 volts ± 5% . Replace CR2 if incorrect voltage is obtained.
		c. Defective wiring.	*c.* Check wiring and circuit board terminations against schematic diagram (fig. 5-2). Repair or replace, as necessary.
6	No meter indication. or faulty meter indication only when testing SDU-5 / E battery.	a. Defective resistor in voltmeter circuit.	*a.* With AN/ USM-223, check value of R7, R8 against schematic diagram (fig. 5-2). Replace defective resistors.
		b. Defective wiring.	*b.* Check wiring and circuit board terminations against schematic diagram (fig. 5-2). Repair or replace, as necessary.
	No meter indication, or faulty meter indcation when only one type of battery is tested.	Defective test connector or related wiring.	Check connector and wiring for continuity. Repair or replace, as necessary.

6-5. Alignment

The test set requires no alignment. Tolerances allowed for individual load resistors are sufficient to permit slight variations in resistive values and still keep the test set within specifications.

6-6. Repair

Careless replacement of parts often creates new faults. Observe good workmanship at all times. When performing repairs by replacement of parts, follow the general techniques and cautions given in the following paragraphs.

a. Before a part is unsoldered, note the position of the leads. If the part to be replaced has a number of connections, tag each of the leads.

b. Be careful not to damage other leads by pulling or pushing them out of the way.

c. Do not allow drops of solder to fall into the equipment; they may cause short circuits.

d. Make well-soldered joints; a carelessly soldered joint may create a new fault, and a poorly soldered joint is one of the most difficult faults to find.

e. Do not use a high-wattage soldering iron when soldering small components or semi-conductor devices. Excessive heat may damage the component or change its value.

f. When a part is replaced, it must be positioned exactly as the original part. A defective part may be replaced with one which has the same electrical value but a different physical size, if space permits. Pay particular attention to proper grounding when replacing a part. Use the same ground as a original wiring. Failure to observe these precautions may result in intermittent operation.

g. When replacing parts which have factory-selected values, use replacements which have a value equal to that of the part removed. The selection is originally made by slightly varying the value of the part until the desired operation is obtained. Factory-selected parts are indicated on the schematic diagram. A choice of four values of resistor R1 is available as indicated in appendix C. Use the AN / USM-223 and PP-3940 / G to select resistor R1 (6040, 6190, 6490, or 6810 ohms) as follows:

(1) Set power supply output to zero.

(2) Connect power supply positive and negative outputs to pins A and B. respectively. of the URC-1 cable connector.

(3) Connect multimeter across power supply output and adjust power supply for 15.7 volts.

(4) Select the replacement value for resistor R1 from one of the resistors listed above. The correct replacement will provide a scale reading of 1.0 ±½ scale division on the test set meter. Install resistor.

(5) Disconnect test equipment.

6-7. Removal and Replacement

Figure 6-1 is an exploded view of the test set with all components identified on the associated legend. Figure 6-2 is a parts location diagram for the circuit board. External test set components are identified on figure 1-1. To gain access to internal components, or to remove the meter or test connectors, the unit must be disassembled. The following paragraphs provide a brief description of the steps required for disassembling the test set to gain access to and to remove the terminal board and component parts.

a. Unit Disassembly and Reassembly (fig. 6-1).

(1) Remove six screws (23) from the bottom chassis (13) and carefully slide the cover section (21) from the chassis.

(2) Reassemble by replacing the cover section (2) over the chassis (13) and replace the six screws (23) removed in step (1).

b. Battery Data and Instruction Cards. The battery data and instruction cards (3 through 8) are retained within the compartment on the rear of the unit by two screws (25) and a spring clip (26). If cards are to be replaced, remove the two screws, slide out and replace the particular card. The spring does not have to be removed. Replace the two screws after the cards are inserted.

c. *Circuit Board Removal and Replacement* (fig. 6-1). The circuit board, figure 6-2 (24 fig. 6-1). is secured to the test set case by "pop" rivets, as are other components within the unit. In each case. when a respective component is to be removed from the unit, the "pop" rivets must be drilled out with a l/8-inch drill bit. When the component is replaced. it is optional whether "pop" rivets are again used for attachment, or whether MS hardware is used instead. To remove the circuit board, proceed as follows:

(11) Unsolder and tag leads to circuit board (24).

(2) Drill out "pop" rivets (16) and spacers (15) which secure the circuit board to the cover.

(3) To replace the circuit board (24), solder the leads removed in step (11) and replace the attaching hardware with either rivets or screws, lock wahers, and nuts (3 each).

d. Connector Block Removal and Replacement. The connector block (19. fig. 6-1) is also secured by "pop" rivets (17). Follow the same type of removal and replacement technique as described for the circuit board (c above).

e. Battery Compartments. Two battery compartments are used for testing the SDU-5 / E and K308A batteries, items 9 and 14, respectively. Each is attached by "pop" rivets and is to be removed using the same type of procedures as described for the circuit board (para c).

j. *Meter Removal and Replacement.*

NOTE

Meter is not an authorised repair part.

(1) With the unit disassembled, as in paragraph a., remove three screws (1), washers (1A, 22A), and nuts (22).

(2) Tag and unsolder the two leads to the meter terminals.

(3) Install the meter by attaching to the cover with three screws (1), washers (1A, 22A) and nuts (22). Solder the two leads removed in step (2) to the respective meter terminals.

Section III. TESTING PROCEDURES

6-8. General

a. This section describes step-by-step bench test procedures for Test Set, Battery TS-2530 / UR, to be performed at the general support maintenance category. The bench tests are performed to determine the effectiveness of equipment maintenance and to indicate the expected level of performance of the teat set.

b. The perform ante tests are to be performed whenever indicated by the following:

(1) Following installation, to determine if the test set is functioning correctly after shipment or storage.

(2) When the teat set is suspected of improper operation, as indicated by perform ante during actual operation.

(3) Whenever components are repaired or replaced, or after the test set is reassembled.

(4) During scheduled maintenance, to verify equipment operability.

6-9. Operation of Test Equipment

Detailed operation of test equipment is covered in manuals separately provided for those equipments. The test parameters given herein are based on readings obtained on the test set panel meter, and the monitoring test equipment.

6-10. Performance Tests

a. Test Equipment and Materials Required.

(1) Multimeter AN / USM-223.

(2) Variable voltage dc Power Supply PP-3940 / G or equivalent.

b. Test Connections and Conditions. A typical test setup is shown in figure 6-3. Note that in each test, the power supply output must be set to the required test value before the test connections are made to the test connector on the unit.

c. *Procedure.* Perform the steps listed in table 6-3.

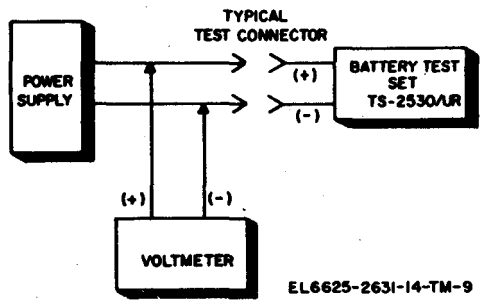


Figure 6-3. Bench Test Setup.

Table 6-3. TS-2530 / UR Performance Tests

step No.	*Test equipment control settings*	*Test procedure*	*Performance standard*
1	Power supply set to 15.7 volts: AN / USM-223 on appropriate range.	Connect power supply positive and negative output to pins A and B, respectively, of the URC-10 cable connector.	Test set meter reads 0.98 ±: 1 scale division.
2	Disconnect power supply and set output to 13.5 volts.	Connect power supply positive and negative outputs, respectively, to the male (+) and female (—) contacts of the URT-21 connector.	Test set meter roads 0.98 ±1 scale division.
3	Disconnect power supply and set output to 5.7 volts; AN/ USM-223 on appropriate *range.*	Connect power supply positive and negative outputs, respectively, to the brass threaded contact (+) and center contact (—) of the SDU-5 / E receptacle.	Test set meter reads 0.98 ±1 scale division.
4	Disconnect test equipment.	NA	NA

CHAPTER 7
DIFFERENCE DATA

DIFFERENCE DATA SHEET

Test SET, BATTERY **TS-2530A/UR**
(NSN 6625-00-238-0223)

THE INFORMATION CONTAINED IN CHAPTERS 1 THROUGH 6 AND APPENDIXES B AND C OF THIS TECHNICAL MANUAL ARE APPLICABLE TO THIS MODEL EXCEPT FOR THE DIFFERENCES CITED IN THIS DIFFERENCE DATA SHEET

7-1. Introduction

Test Set, Battery TS-2530A/UR (fig. 7-1) is the same as the TS-2530/UR except that the TS-2530A/UR does not require the use of the MX-8801/PRC-80 for testing battery used in the AN/PRC-90. For the Ts-2530A/UR the URC-10 battery test connector cable has been removed and replaced with a hard wired-in test cable for testing Battery BA-1568/U used in the AN/PRC-90. The red lead (postive) and black lead (negative) of this cable are terminated with plastic molded cups which are used to connect the battery being tested.

7-2. Service Upon Receipt and Installation

Same as for TS-2530/UR, except test cable is used in place of MX-8801/PRC-90.

7-3. Operating Instructions

Same as for TS-2530/UR except cable is used in place of MX-8801/PRC-90. Also the following updated battery test information applies to both modles when testing Battery BA-1568/U:

a.The PRC-90 battery data card is not to be used Test meter reading given in *b* below is used to determine if battery tested is considered acceptable far further use.

b. Meter reading below 0.74 indicated a weak BA-1568/U battery and these batteries should be rejected. Meter reading of 0.74 and above indicates an acceptable BA-1568/U battery.

7-4. Organizational Maintenance lnstructions.

Same as for TS-2530/UR except for continuity check of TS2530A/UR test cable. Checck continuity of test cable red lead between red lead termination cap and PRC-63 and URT-21 positive (+) connector on the front panel. Check continuity of test cable black lead between black lead termination cap and PRC-63 and URT-21 negative (-) connector on the front panel.

7-5. Functioning of Equipment

Same as far TS-2530/UR except fur changes in block diagram and schematic diagram as shown in figures 7-2 and 7-8.

7-6. General Support Maintenance

Same as for TS-2530/UR except for the following

a. Test able of TS-2530A/UR is used in place of MX-8801/PRC-90 for operational test of PRC-90 battery.

b. When replacing TS-2530/UR test cable, use grommet part No. A1-18-0257-3 and test cable part No. A3-06-0511.

7-7. Appendix B. Maintenance Allocation

Same as for TS-2530/UR except TS-2530A/UR test cable is used in place of MX-8801/PRC-90.

7-8. Appendix C. Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List

Same as for TS-2530/UR except that TS-2530A/UR used grommet part No. A1-18-0257-3 and test cable part No. A3-06-0511.

7-9. Illustrations

The following figures 7-1, 7-2, and 7-8 apply to TS-2530A/UR only:

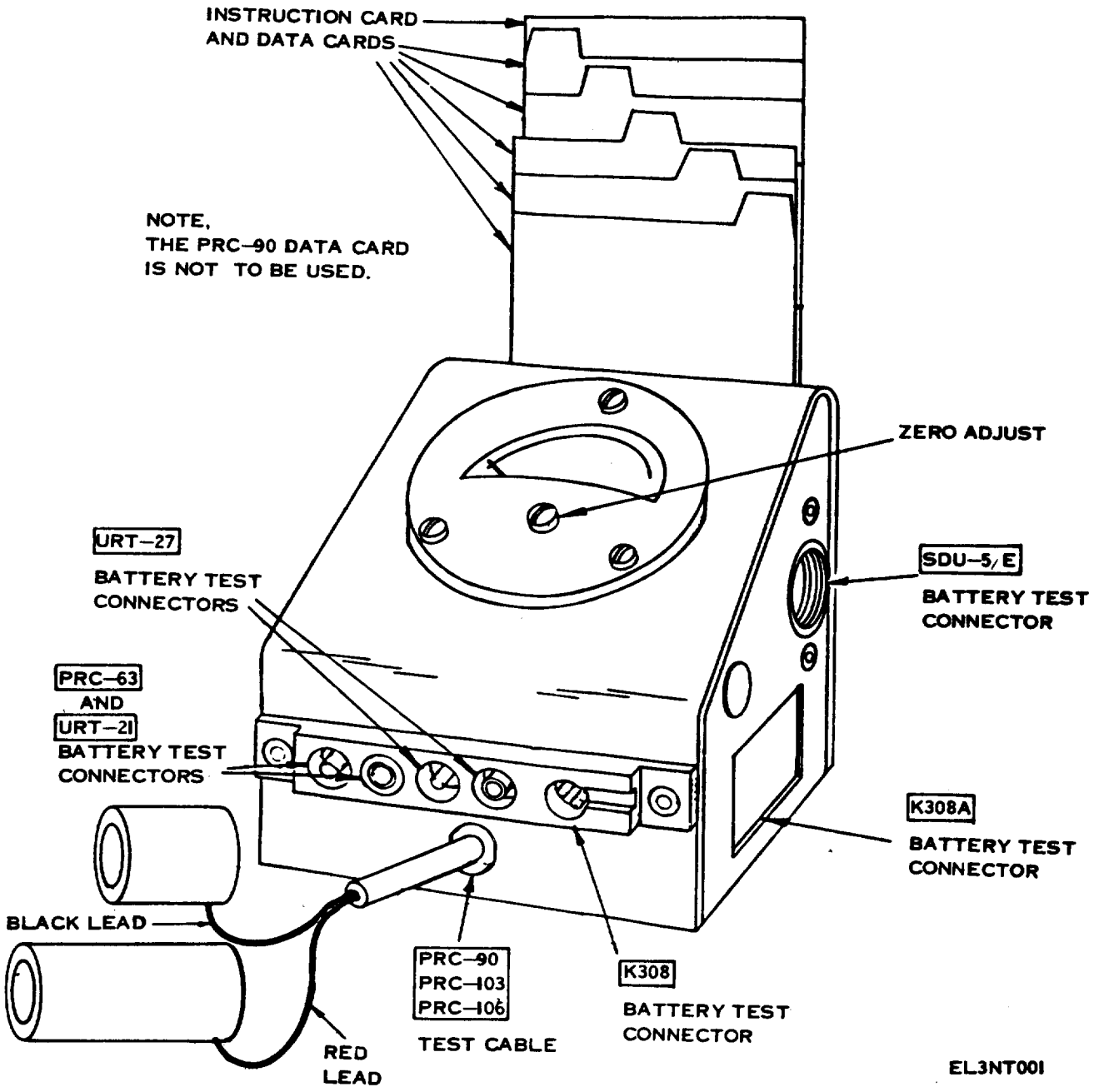


Figure 7-1. Test Set, Battery TS-2530A/UR

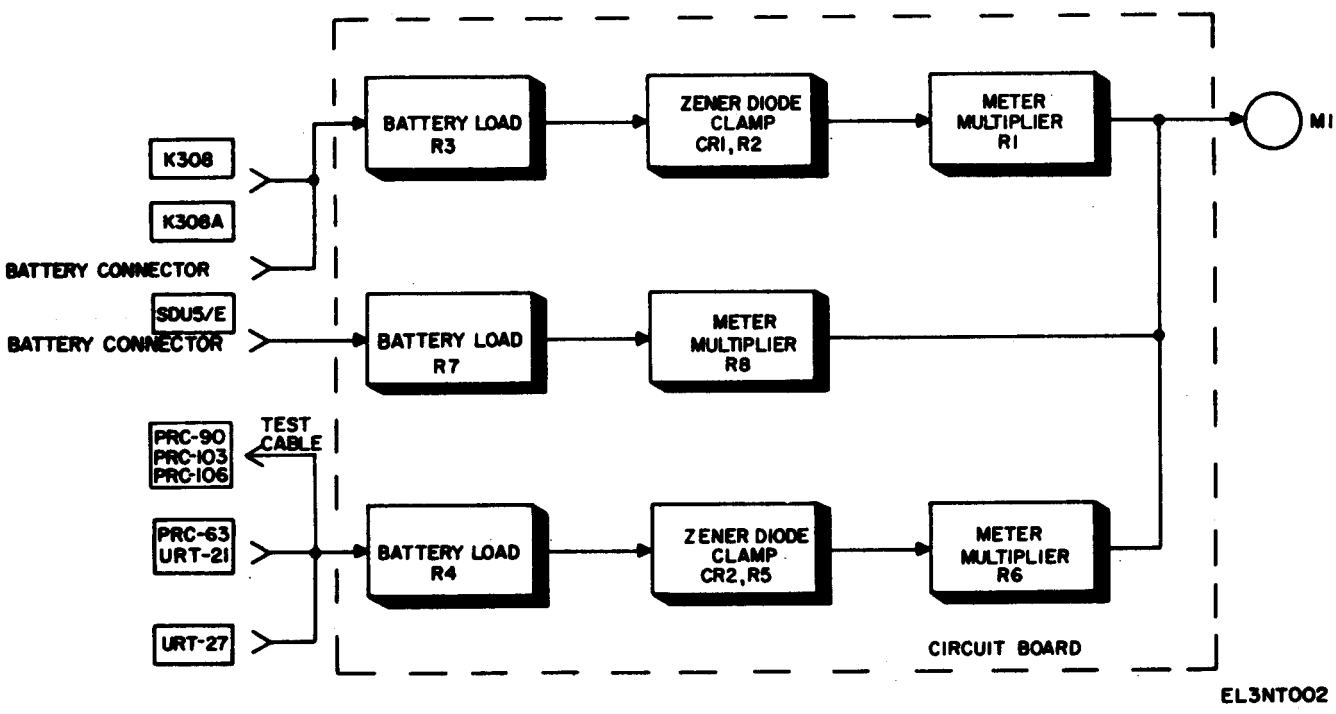
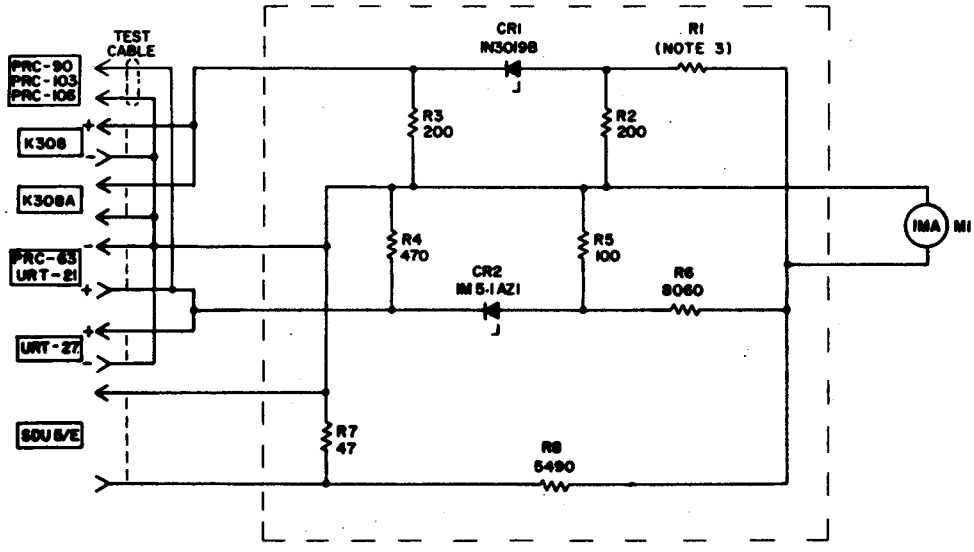


Figure 7-2. Test Set, Battery TS-2530A/UR, functional block diagram.



NOTES
1. ALL RESISTANCE VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE ±10% TOLERANCE UNLESS OTHERWISE SPECIFIED.
3. SELECT VALUE ON TEST.

EL3NT003

Figure 7-3. Test Set, Battery TS-2530A/UR, schematic diagram.

APPENDIX A

REFERENCES

Following is a list of references available to the Organizational and General Support Maintenance personnel of Test Set, Battery TS-2530 / UR:

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	US Army Equipment Index of Modification Work Orders
SB 11-573	Painting and Preservation Supplies Available for Field Use For Electronics Command Equipment
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies, and Equipment Used by the Army.
SC 5180-91-CL-R13	Sets, Kits, and Outfits Components List: Tool Kit, Electronic Equipment TK-101/G.
SC 5180-91-CL-S21	Sets, Kits, and Outfits Components List: Tool Kit, Electronic Equipment TK-1OO/G.
TB 746-10	Field Instructions for Painting and Preserving Electronics Command Equipment
TM 114625-203-12	Operator and Organizational Maintenance Manual: Multimeter AN/URM-105, including Multimeter ME-77/U
TM 11-6625-654-14	Operator's, Organizational, and General Support Maintenance Manual for Multimeter AN/USM-223 (To be published)
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 740-90-1	Administrative Storage of Equipment
TM 750-244-2	Procedures for Destruction of Electronic Materiel to Prevent Enemy Use (Electronics Command)

APPENDIX B

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature. It authorises categories of maintenantce for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2. Maintenance Functions

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and / or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure of measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. *Service.* Operations required periodically to keep an item in proper operating condition, i.e., to clean, preserve, drain, paint, or to replenish fuel / lubricants/ hydraulic fluids or compressed air supplies.

d. Adjust. Maintain within prescribed limits by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

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

f.. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipment used to precision measurement. Consists of the comparison 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.

g. lnstall. The act of emplacing, seating, or fixing into position an item, part, module (component *or* assembly) in a manner to allow the proper functioning of the equipment / system.

h. Replace. The act of substituting a serviceable like-type part, subassembly, module (component or assembly) in a manner to allow the proper functioning of an equipment/ system.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, rem remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module / component / assembly, end item or system.

j. Overhaul. That maintenance effort (service / action) necessary to restore an item to a completely serviceable / operational condition as prescribed by maintenance standards (e.g., DMWR) in pertinent technical manuals. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

k. 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 [hours. miles, etc) considered in classifying Army equipment / components.

l. Symbols. The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

B-3. Explanation of Format

a. Group Number. Column 1 lists group numbers. the purpose of which is to match components, assemblies, subassemblies and modules with the next higher assembly.

b. Functional Group. Column 2 lists the next higher assembly group and the item names of components. assemblies. subassemblies and modules within the group for which maintenance is authorized.

c. Maintenance Functions. Column 3 lists the twelve maintenance functions defined in B-2 above.

Each maintenance function required for an item is specified by the symbol among those listed in *d* below which indicates the level responsible for the required maintenance. Under this symbol is listed an appropriate work measurement time value determined as indicated in *e* below.

d. Use of Symbols. The following symbols are used to prescribe work function responsibility:

C—Operator / Crew
O—Organization
F—Direct Support
H—General support
I)— Depot

e. Work Measurement Time. The active repair time required to perform the maintenance function is included directly below the symbol identifying and category of maintenance. The skill levels used to obtain the measurement times approximate those found in typical TOE units. Active repair time is the average aggregate time required to restore an item (subassembly, assembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, fault isolation / diagnostic time, and QA / QC time in addition to the time required to perform specific maintenance functions identified for the tasks authorized in the maintenance allocation chart. This time is expressed in man-hours and carried to one decimal place (tenths of hours).

f. Tools and Test Eaquipment. This column is used to specify, by code, those tools and teat equipment required to perform the designated function.

g. *Remarks.* Self-explanatory.

B-4. Explanation of Format of Table I and Test Equipment Requirements

The columns in table I follows:

a. Tools and Equipment. The numbers in this column coincide with the numbers used in the tools and equipment column of the maintenance allocation chart. The numbers indicate the applicable tool for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. *Nomenclature.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the Federal stock number of the specific tool or test equipment.

e. Tool Number. Not used.

SECTION II

MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY NOMENCLATURE	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	01 Group, Battery Test Set TS-2530/UR	0 0.1	0 0.1	0 0.1	0 0.1								1	
										H 0.5			3,4	
0101	Circuit Board									H 0.5			3,4	Replacement of piece parts.
	02 Group, Battery Test Adapter MX-8801/PRC-90 (Used with but not part of TS-2530/UR)	0 0.1	0 0.1						H 0.1				2	Non-repairable

TABLE I

TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
1	O	Tool Kit, Electronic Equipment TK-101/G	5180-064-5178	
2	O	Multimeter AN/URM-105	6625-581-2036	
3	H	Multimeter AN/USM-223	6625-999-7465	
4	H	Tool Kit, Electronic Equipment TK-100/G	5180-605-0079	

APPENDIX C

ORGANIZATIONAL DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

C-l. Scope

This manual list repair parts required for the performance of general support maintenance of the TS-2530 / UR.

C-2. General

This Repair Parts List is divided into the following sections:

a. Repair Parts List-Section II. Not applicable.

b. Special Tools List-Section III. Not applicable.

c. Repair Parts List-Section IV. A list of repair parts authorized at the general support level for the performance of maintenance. The list also includes parts which must be removed for the replacement of the authorized parts. Parts lists are composed of functional groups in ascending numerical sequence, with parts in each group listed in figure and item number sequence.

d Special Tools List-Section V. Not applicable.

e. Federal Stock Number and Reference Number Index-Section VI. Not applicable.

C-3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings:

a. Source, Maintenance, and Recoverability Codes (SMR).

(1) Source code. Source codes are assigned to support item to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code Format as follows:

Code	*Definition*
PA—	Item procured and stocked for anticipated or known wage.
PB—	Item procured and stocked for insurance purposes because essentiality dictates that a minimun quanity be available in the supply systems
PC—	Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
PD—	Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfittings. Not subject to automatic replenishment.
PE—	Support equipment procured and stocked for initial issue or outfitting to specified maintennace repair activities.
PF—	Support equipment which will not be stocked but which will be centrally procured on demand.
PG—	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which because of probable discontinuance or shutdown of production facilities would prove uneconomical to reproduce at a later time.
KD—	An item of depot overhaul / repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.
KF—	An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB—	Item included in both a depot overhaul / repair kit and a maintenance kit.
M0—	Item to be manufactured or fabricated at organizational level.
MF—	Item to be manufactured or fabricated at direct suport maintenance level.
MH—	Item to be manufactured or fabricated at general support maintenance level.
MD—	Item to be manufactured or fabricated at depot maintenance level.
AO—	Item to be assembled at organizational level.
AF—	Item to be assembled at direct support maintenance level.
AH—	Item to be assembled at general support maintenance level.
AD—	Item to be asembled at depot maintenance level
XA—	Item is not procured or stacked because the requirements for the item will result in the replacement of the next higher assembly.

Code	*Definition*
XB—	Item is not procured or stocked. If not available through salvage, requisition.
XD—	Support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE. Cannibalization or salvage may be used as a source of supply for any items source coded above except those coded XA, XD, and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code Format as follows:

USE (THIRD POSITION): The maintenance code entered in the third position indicates the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position indicates one of the following levels of maintenance.

Code	*Application / Explanation*
C -	Crew or operator maintenance performed within organizational maintenance.
O -	Support item is removed, replaced, used at the organizational level.
I -	Support item is removed, replaced, used by the direct support element of integrated direct support maintenance.
F -	Support item is removed, replaced, used at the direct support level.
H -	Support item is removed, replaced, used at the general support level.
D -	Support items that are removed, replaced, used at depot, mobile depot, Specialized Repair Activity only.

Note: Codes "I" and "F" will be considered the same by direct support units.

REPAIR (FOURTH POSITION): The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code	*Application/Explanation*
O -	The lowest maintenance level capable of complete repair of the support item is the organizational level.
F -	The lowest maintenance level capable of complete repair of the support item is direct support level.
H -	The lowest maintenance level capable of complete repair of the support item is general support level.
D -	The lowest maintenance level capable of complete repair of the support item is the depot level, performed by (enter applicable activity) depot, mobile depot, or Specialized Repair Activity.
L -	Repair restricted to designated Specialized Repair Activity.
Z -	Non-repairable. No repair is authorized.
B -	No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

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

Recoverability Code	*Definition*
Z -	Non-reparable item. When unserviceable, condemn and dispose at the level indicated in position three.
O -	Reparable item. When uneconomically reparable, condemn and dispose at organizational level,
F -	Reparable item. When uneconomically reparable; condemn and dispose at the direct support level.
H -	Reparable item. When uneconomically reparable, condemn and dispose at the general support level.
D -	Reparable item When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L -	Reparable item. Repair, condemnation, and disposal not authorized below depot / Specialized Repair Activity level.
A -	Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manual/ directive for specific instructions.

b. Federal Stock Number. Indicates the Federal Stock Number assigned to the item and will be used for requisitioning purposes.

c. *Description.* Indicates the Federal item name and a minim urn description required to identify the item. The last line indicates the reference number followed by the applicable Federal Supply Code for Manufacturer (FSCM) in parentheses. The FSCM is used as an element in item identification to designate manufacturer or distributor or Government agency, etc, and is identified in SB 708-42.

d. Unit of Measure (U/M). Indicates the standard or basic quantity by which the listed item is used in performing the actual maintenance function. This measure is expressed by a two. character alphabetical abbreviation, e.g., ea, in, pr, etc, and is the basis used to indicate quantities and

allowances in subsequent columns. When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

e. Quanity Incorporated in Unit. 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.

f. 30-Day GS Maintenance Allowances. The repair parts indicated by asterisk entries in separate allowance columns for GS represent those authorized for use at that category of maintenance to be requisitioned on an "as required" basis.

g. Illustration. This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item number.* Indicates the callout number used to reference the item on the illustration.

C-4. Special Information

(Not applicable).

C-5. How to Locate Repair Parts

(Not applicable).

C-4. Abbreviations

(Not applicable).

SECTION IV. REPAIR PARTS LIST

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number and Mfr. Code — Usable on Code	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30-DAY DS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(7) 30-DAY GS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(8) 1-YR ALW PER 100 EQUIP CNTGCY	(9) DEPOT MAINT ALW PER 100 EQUIP	(10) ILLUSTRATION (a) FIGURE NO.	(b) ITEM NO.
		GROUP 01 TEST SET, BATTERY TS-2530/UR												
PA H ZZ	5305-050-6813	SCREW, TAPPING, PAN HEAD, STAINLESS STEEL, TYPE B 6-32 x 1/4 IN. LG. MS24642-22 (96906)	EA	6				*	*	*			1	1
PA H ZZ	5905-810-3286	RESISTOR, FIXED, FILM 6040 OHM ± 1%, .25 WATT RN65C6041F (81349)	EA	1				*	*	*			1	2
		OR												
PA H ZZ	5905-813-0177	RESISTOR, FIXED, FILM 6190 OHM ± 1%, .25 WATT RN65C6191F (81349)	EA	1				*	*	*			1	2
		OR												
PA H ZZ	5905-814-0731	RESISTOR, FIXED, FILM 6490 OHM ± 1%, .25 WATT RN65C6491F (81349)	EA	1				*	*	*			1	2
		OR												
PA H ZZ	5905-835-6675	RESISTOR, FIXED, FILM 6810 OHM ± 1%, .25 WATT RN65C6811F (81349)	EA	1				*	*	*			1	2
PA H ZZ	5905-923-8538	RESISTOR, FIXED, WIREWOUND 200 OHM ± 1%, 10 WATT RWP23F2000F (81349)	EA	2				*	*	*			1	3
PA H ZZ	5905-299-2051	RESISTOR, FIXED, COMPOSITION 470 OHM ± 5%, 1 WATT RC32GF471J (81349)	EA	1				*	*	*			1	4
PA H ZZ	5905-279-1979	RESISTOR, FIXED, COMPOSITION 100 OHM ± 5%, 1 WATT RC42GF101J (81349)	EA	1				*	*	*			1	5
PA H ZZ	5905-823-3527	RESISTOR, FIXED, FILM 8060 OHM ± 1%, .25 WATT RN65C8061F (81349)	EA	1				*	*	*			1	6
PA H ZZ	5905-279-2637	RESISTOR, FIXED, COMPOSITION 47 OHM ± 5%, 1 WATT RC32GF470J (81349)	EA	1				*	*	*			1	7
PA H ZZ	5905-899-2934	RESISTOR, FIXED, FILM 5490 OHM ± 1%, 1/8 WATT RN60C5491F (81349)	EA	1				*	*	*			1	8
PA H ZZ	5961-849-4176	SEMICONDUCTOR DEVICE, DIODE 1N3019B (81349)	EA	1				*	*	*			1	9
PA H ZZ	5961-408-8713	SEMICONDUCTOR DEVICE, DIODE 1N5. 1ZS1 (04713)	EA	1				*	*	*			1	10
PA H ZZ	6625-480-6315	ADAPTER, BATTERY TEST MX-8801/PRC-90	EA	1				*	*	*			1	11

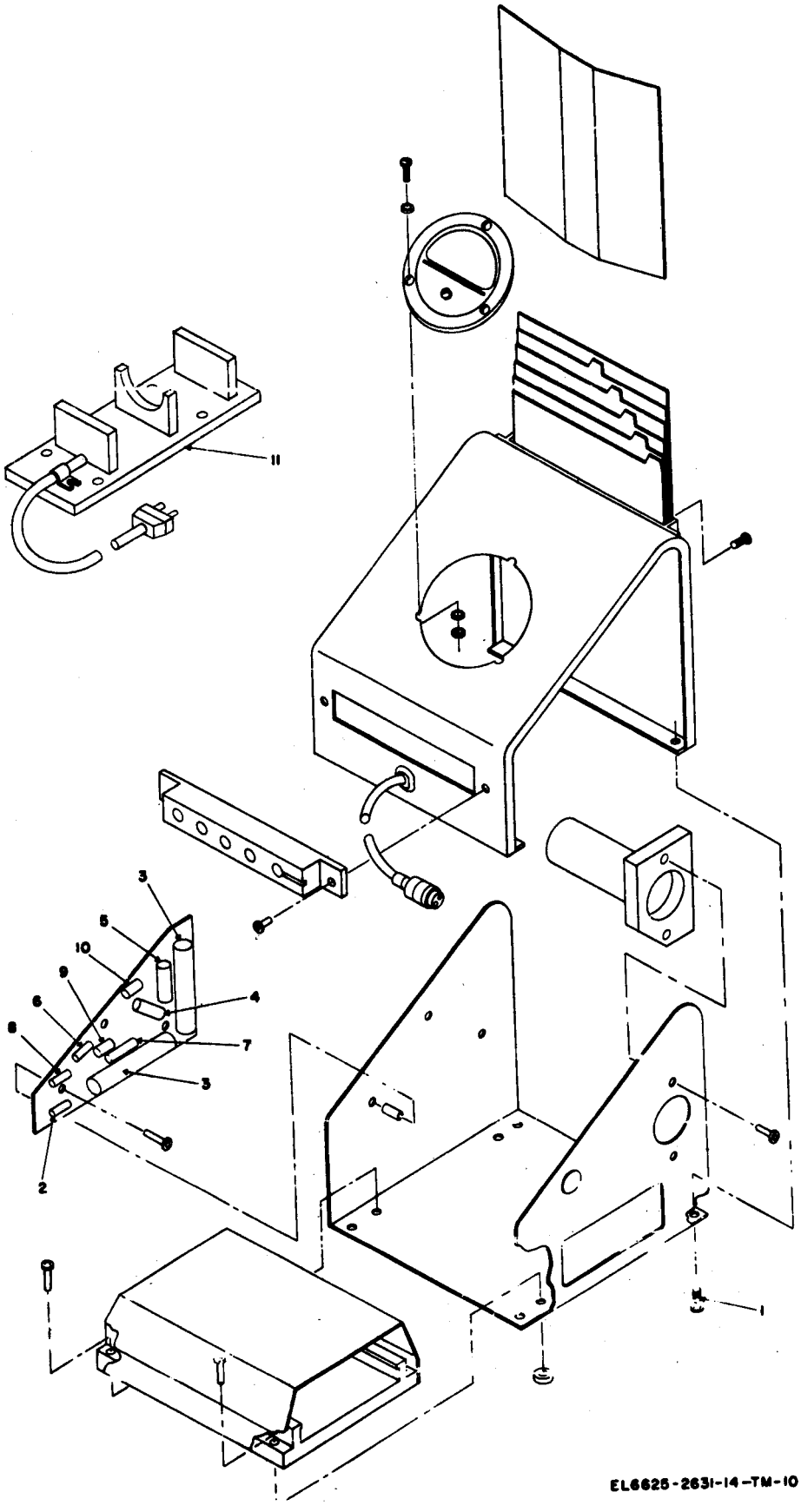


Figure 1. Test Set. Battery TS-2530 / UR

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CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:
VERNE L. BOWERS
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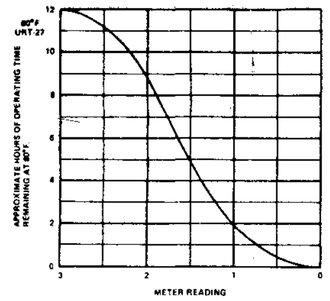
URT-27 BATTERY DATA CARD



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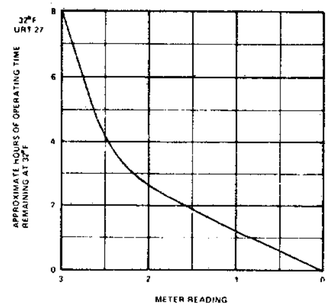
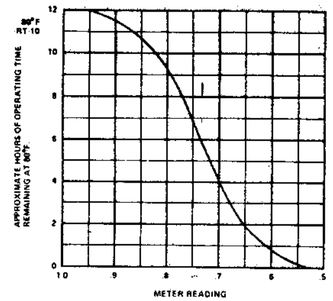


REAR

RT-10 BATTERY DATA CARD



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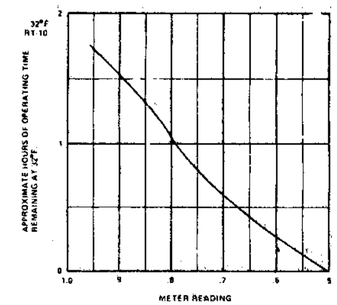
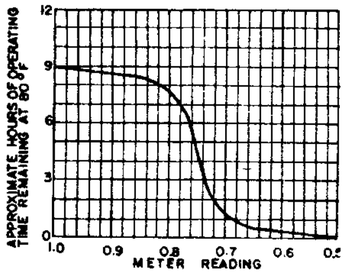


REAR

SDU-5/E BATTERY DATA CARD



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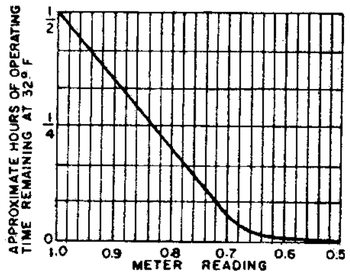

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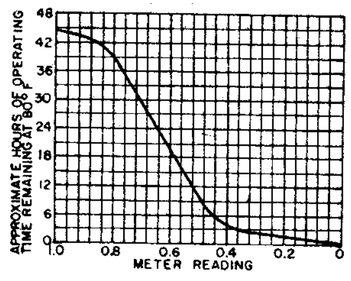

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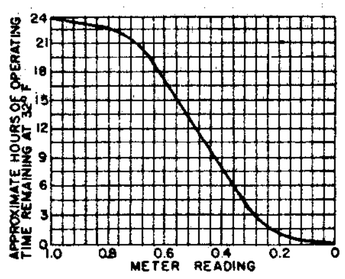
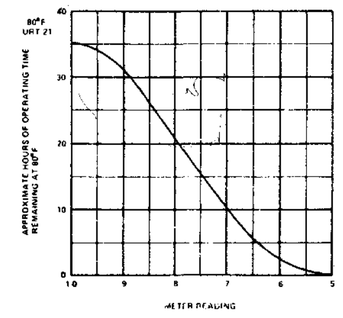


REAR

URT-21 BATTERY DATA CARD



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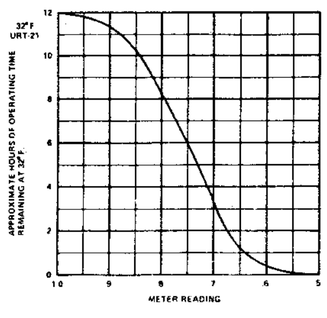
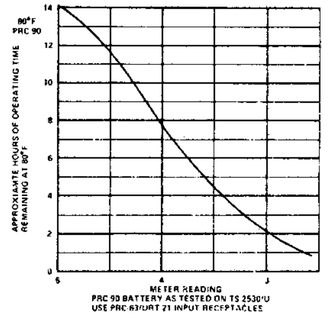


REAR

PRC-90 BATTERY DATA CARD



REAR

INSTRUCTION CARD

TS 2530/UR
Operating Instructions*

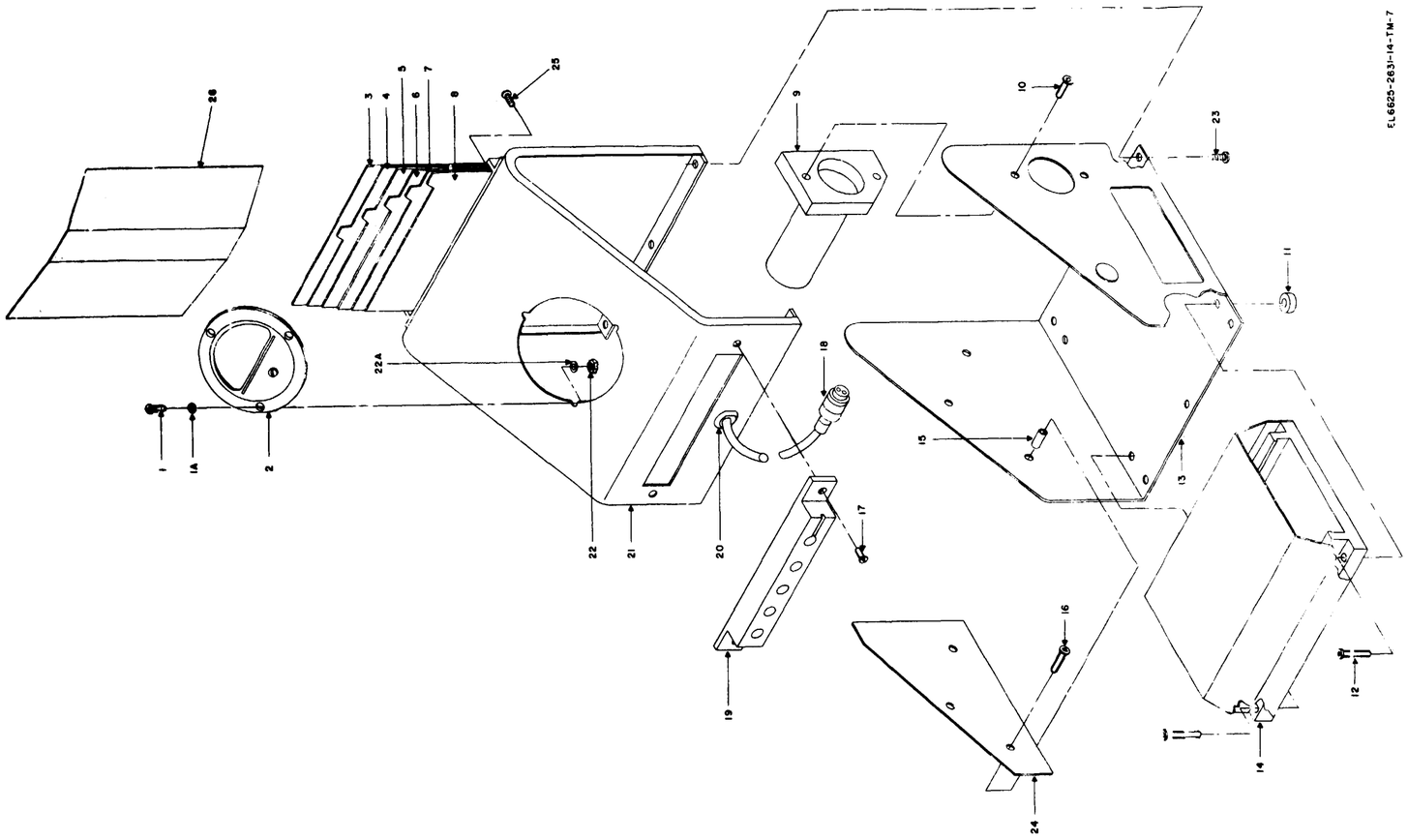
1. Connect battery to be tested to the appropriate connector. Read Meter. If reading is stable, go to 3.
2. If reading is momentarily stable, then drops, allow five (5) minutes for reading to stabilize.
3. Convert meter reading to "hours remaining" using appropriate graph.

* For detailed instructions and description, See Technical Manual.

FRONT

EL6625-2631-14-TM-2

Figure 1-2. Battery data cards.



Item Number	*Item Name*
1	Screw
1A	Washer
2	Meter
3	Instruction card / PRC-90 battery data card
4	URT-21 battery data card
5	URC-10 battery data card
6	SDU-5 / E battery data card
7	RT-10 battery data card
8	URT-27 battery data card
9	SDU-5 / E battery test compartment
10	Rivet
11	Rubber bumper
12	Rivet
13	Chassis
14	K308A battery test compartment
15	Spacer
16	Rivet
17	Rivet
18	Cable Assembly (URC-10 battery test connector)
19	Terminal / connector block
20	Grommet
21	Cover
22	Nut
22A	Washer
23	Screw
24	Printed circuit board assembly
25	Screw
26	Spring clip

Figure 6-1. Test Set, Battery TS-2530/UR, exploded view.