# TM 11-5820-473-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

Power Plug Bendix
10-419344-25

## ORGANIZATIONAL MAINTENANCE MANUAL

William Perry Connectors

# RADIO SET AN/TRC-77 AND AN/TRC-77A

## (INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS)

HEADQUARTERS, DEPARTMENT OF THE ARMY
OCTOBER 1965

# TRC-77 TUNING PROCEDURE
## (RECEIVER)

A. Preliminary

(1) Remove the receiver crystal retainer holddown plate.

(2) Insert 6 receiver crystals, in ascending order, into the receiver crystal holders.

(3) Replace the receiver crystal retainer holddown plate.

(4) In the AN/TRC-77, position the receiver mixer and rf screw links for each receiver channel frequency. For receiver operation between 3 and 3.8 MHZ, position the channel links between the center screw terminal and the bottom screw terminal To operate between 3.8 and 8 MHZ, position the channel links between the center screw terminal and the top screw terminal. The AN/TRC-77 does not contain channel links.

(5) Connect the headset to the PHONES connector.

(6) Turn the RCVR CHANNEL switch to channel 1.

(7) Set the AM-CW swith to AM.

(8) Turn the RF GAIN and VOL controls fully clockwise.

(9) Connect the AN/URM-25 to ANT and GRD terminals and tune the AN/URM-25 to the channel frequency.
(NOTE: The channel frequency is 455 KHZ below that marked on the channel frequency crystal.)

(10) Turn the power switch to RCVR.

(11) Set the AN/URM-25 MOD SELECTOR dial to 1,000 cps and the % MODULATION control for 30 percent modulation,

(12) Adjust the RF and MIXER tuning capacitors for channel 1 to give maximum output in the headset. Reduce the AN/URM-25 rf signal level as the RF and MIXER tuning capacitors are adjusted. With the circuit peaked, 1.Ø microvolt output from the AN/URM-25 should produce a strong tone in the headset.

(13) Repeat steps (10) through (12) above for channels 2 through 6.

(14) Turn the power switch to OFF.

(15) Disconnect the power supply used, and AN/URM-25.
(NOTE: The TUNE OPERATE switch will automatically turn to OPERATE when the chassis is replaced in the case.

(16) Replace the chassis in its case and lock the chassis to the case.

STAFF
NINTH NAVAL DISTRICT
NAVY-MARINE CORPS MARS

Friday Oct. 27 1978

Enclosed is the procedure that I used to crystalize the TRC-77

1. Place receiver in front of you so you can read dials.
2. Unlatch the clamps and pull unit from its case.
3. The crystals should be placed in the rear of the receiver you will notice a metal strip across the top of them that is used to keep the crystals in place, they are also numbered one through six. Use the lowest crystal freq. in the lowest channel. I split my two crystals for MB-8 and MC-8 I have one in channel two and one in channel three, but any combination you choose will work ok.
4. You will probably notice that the antenna and audio jacks are not what you normally see on a receiver. I modified my rig first of all by removing the phone plug with a normal audio jack, there are several ways you may want to revamp it but do it to your own likes. I also took the antenna which is the left of two plugs on the left upper corner of your receiver. I put in a BNC just worked out that way for myself.
5. The tune up slip I am sending along is for a frequency counter and a signal generator but all I did was to tune for a signal by ear. I waited until NAV4 was transmitting and tunned for the loudest sound to my ear, the easy way out I guess.
6. On the right side of the receiver there are two windows and punched in the chassis are RF and MIXER they are also numbered and these numbers correspond to whatever channel you put your crystals in. I tuned the RF section first then the MIXER then keep going back and forth for the loudest audio. Rember to turn up your RF GAIN AND VOL controls and also place your RCVR CHANNEL in the correct position of the crystal. Also put BFO in zero position. You may have to move this after final tuneup to your terminal unit.

*SEE 6 JAN 76 LETTER FROM ASC

FOR INFORMATION: CRYSTAL FREQ = RECEIVE FREQ ⊕ 455KHZ
JAN ST 242 Crystal Holder HC6/U .001% tolerance
LOAD CAPACITANCE 32 PF PARALLEL RESONANCE

POWER CONNECTIONS:

12 VDC On the power plug on back of receiver are two prongs and they are labeled A and B
A= POSITIVE TERMINAL
B = NEGATIVE TERMINAL

Good luck

Gary NNNØAFT WI.

Gary

4.515
+.455
4.970
4.970

7.495

*TM 11–5820–473–12

TECHNICAL MANUAL
No. 11–5820–473–12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *7 October 1965*

# RADIO SETS AN/TRC–77 AND AN/TRC–77A



*This manual supersedes TM 11–5820–473–20P, 27 July 1964, and so much of TM 11–5820–473–15, 30 August 1962, as pertains to Operation and Organizational Maintenance; C 1, 23 August 1963.



SERIAL #534

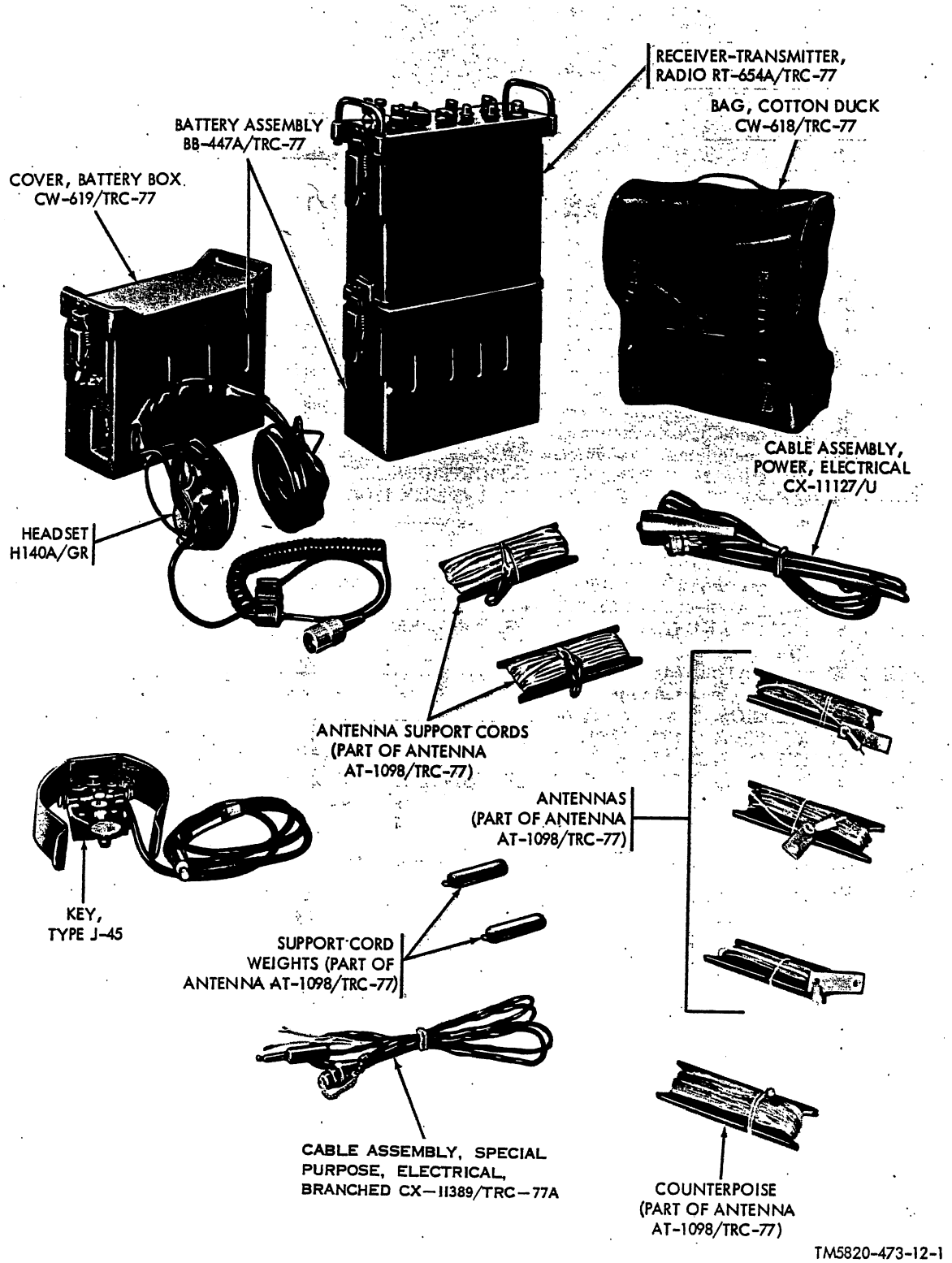



*Figure 1-1. Radio Set AN/TRC-77A.*

# CHAPTER 1

# INTRODUCTION

## Section I. GENERAL

### 1-1. Scope

*a.* This manual describes Radio Sets AN/TRC-77 and AN/TRC-77A (fig. 1-1) and covers its installation, operation, and operator's and organizational maintenance. It includes operation under usual and unusual conditions, cleaning and inspection of the equipment, and replacement of parts available at the organizational maintenance level.

*b.* Official nomenclature followed by (*) is used to indicate all models of the equipment items covered in this manual. Thus, AN/TRC-77(*) represents Radio Sets AN/TRC-77 and AN/TRC-77A; Battery Assembly BB-447(*)/TRC-77 represents BB-447/TRC-77 and BB-447A/TRC-77; and Receiver-Transmitter, Radio RT-654(*)/TRC-77 represents RT-654/TRC-77 and RT-654A/TRC-77.

### 1-2. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new additions, changes, or additional publications pertaining to your equipment. DA Pam 310-4 is a current index of technical manuals, technical bulletins, supply manuals (types 7, 8, and 9), supply bulletins, lubrication orders, and modification work orders that are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc.) and the latest changes to and revisions of each equipment publication.

### 1-3. Forms and Records

*a. Reports of Maintenance and Unsatisfactory Equipment.* Use equipment forms and records in accordance with instructions in TM 38-750.

*b. Report of Damaged or Improper Shipment.* Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

*c. Reporting of Equipment Manual Improvements.* The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting these improvements. This form will be completed using pencil, pen, or typewriter and forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-MR-(NMP)-MA, Fort Monmouth, N.J., 07703.

## Section II. DESCRIPTION AND DATA

### 1-4. Purpose and Use

*a.* Radio Set AN/TRC-77(*) provides for multichannel, two-way communication within the frequency range of 3.0 to 8.0 megacycles (mc). The AN/TRC-77(*) operates on any one of six predetermined frequencies.

*b.* Radio Set AN/TRC-77(*) is intended for use as a portable field transmitter-receiver and may be used in conjunction with both field and station installations. The AN/TRC-77(*) can receive both amplitude-modulated (am.) and continuous-wave (cw) signals but is limited to cw transmission only.

*c.* The average working range of the AN/TRC-77(*) is from 5 to 7 miles. The transmitter and receiver portions of the AN/TRC-77(*) have separate channel selection and may be operated on different frequencies.

*d.* The transmitter may be operated by a hand key or by an automatic keying device. The maximum keying speed of the transmitter is 300 words a minute.

## 1–5. Technical Characteristics

*a. Transmitter.*

Number of tubes ..... 2.
Number of transistors ..... 6.
Frequency range ..... 3.0 to 8.0 mc, with provision for presetting any six frequencies.
Type of transmission ..... Cw.
Type of control ..... Crystal.
Distance range ..... 5 to 7 miles.
Power requirements ..... 3.75 amp at 12 volts.
Power supply ..... 12-volt battery.
Power output ..... 10 to 14 watts.
Keying speed ..... 300 wpm max.
Antennas ..... 3, long-wire type, 25, 40, and 57 ft in length.

*b. Receiver.*

Receiver type ..... Superheterodyne.
Number of transistors ..... 11.
Frequency range ..... 3.0 to 8.0 mc.
Types of signals received ..... Telegraph (cw or mcw) and voice.
Sensitivity:
  Cw ..... 1.0 microvolt for 1.0-mw signal plus noise-to-noise ratio.
  Am ..... 2.2 microvolts for 1.0-mw signal plus noise-to-noise ratio.
Intermediate frequency ..... 455 kc.
Bandwidth ..... 5 to 6 kc (6 db down); 11 kc (60 db down).
Frequency control ..... Crystal-controlled oscillator.
Power input ..... 20 ma max at 12 volt (nominal).
Power supply ..... 12-volt battery.
Power output ..... 1 mw (nominal).
Agc ..... In am. mode only.
Bfo ..... 455 kc ±4 kc.
Antennas ..... Same as transmitter.

*c. Battery Assembly BB–447(*)/TRC–77.*

Voltage ..... 12 volts (nominal).
Capacity ..... 14 amp-hr.

## 1–6. Components of Radio Set AN/TRC–77(*)

The components of Radio Set AN/TRC–77(*) (fig. 1–1) are listed in the following chart:

| Quantity | Item | Height (in.) | Depth (in.) | Width (in.) | Unit weight (lb) |
|---|---|---|---|---|---|
| 1 | Receiver-Transmitter, Radio RT–654A/TRC–77 [a] | 10 | 4⅜ | 10½ | 11.0 |
| 1 | Receiver-Transmitter, Radio RT–654/TRC–77 [b] | 10 | 4⅜ | 10⅝ | 12.9 |
| 1 | Antenna AT–1098/TRC–77 | | | | 2.6 |
| 1 | Bag, Cotton Duck CW–618/TRC–77 | | | | .7 |
| 2 | Battery Assembly BB–447A/TRC–77 [a] | 6⅝ | 4 | 10½ | 13.8 |
| 2 | Battery Assembly BB–447/TRC–77 [b] | 6⅝ | 4 | 10½ | 13.8 |
| 1 | Cover, Battery Box CW–619/TRC–77 | 1 | 4½ | 10½ | .8 |
| 1 | Cable Assembly, Power, Electrical [a] CX–11127/U | | | | .8 |
| 1 | Cable Assembly, Power, Electrical [b] C22867 | | | | .8 |
| 1 | Cable Assembly, Special Purpose, Electrical, Branched CX–11389/TRC–77A. | | | | .5 |
| 1 | Headset H–140A/GR [a] | | | | 1.4 |
| 1 | Headset NT–49507B [b] | | | | 1.4 |
| 1 | Key, Type J–45 | | | | .9 |

[a] Used on Radio Set AN/TRC–77A.
[b] Used on Radio Set AN/TRC–77.

* HC-6/U INTERNATIONAL CRYSTAL / JAN ST-242 HC-6/U .001% TOLERANCE
P/N 433215
LOAD - 32 PF
TYPE - CS (COMMERCIAL STANDARD)
RANGE - FUNDAMENTAL

## 1-7. Common Names

A list of the nomenclature assignments for the components of Radio Set AN/TRC-77(*) is given below. A common name is indicated after each item.

| Nomenclature | Common name |
|---|---|
| Radio Set AN/TRC-77(*) | Radio set |
| Receiver-Transmitter, Radio RT-654(*)/TRC-77. | Receiver-transmitter |
| Antenna AT-1098/TRC-77 | Antenna system |
| Bag, Cotton Duck CW-618/TRC-77. | Accessory bag |
| Battery Assembly BB-447(*)/TRC-77. | Battery |
| Cover, Battery Box CW-619/TRC-77. | Battery assembly cover. |
| Cable Assembly, Power, Electrical CX-11127/U.[a] | Auxiliary power cable. |
| Cable Assembly, Power, Electrical C22867.[b] | Auxiliary power cable. |
| Cable Assembly, Special Purpose, Electrical, Branched CX-11389/TRC-77A. | Keyer adapter cable. |
| Headset H-140A/GR [a] | Headset |
| Headset NT-49507B [b] | Headset |
| Key, Type J-45 | Key |

[a] Used on Radio Set AN/TRC-77A.
[b] Used on Radio Set AN/TRC-77.

## 1-8. Description of Major Components

*a. Receiver-Transmitter, Radio RT-654(*)/TRC-77.* The receiver and transmitter are mounted on the same chassis within a single case. The same antenna is used for both receiving and transmitting. The receiver-transmitter is mounted on top of the battery and secured with toggle clamps located on each narrow side of the case (fig. 1-1). The front panel with all transmitter and receiver controls is located on top of the main chassis. Two carrying handles are mounted on the panel. The case and chassis are separated by unfastening the two toggle clamps, one on each side of the panel just below the handles. After the toggle clamps are unfastened, the chassis and panel slide out of the case as a unit. Major transmitter and receiver circuits are contained on individual circuit boards which are mounted on the transmitter or receiver side of the main chassis.

*b. Battery Assembly BB-447(*)/TRC-77.* The battery consists of 10 BB-418/U cells. The battery electrolyte in the cells is a 30-percent solution of potassium hydroxide, and the output of each cell is 1.2 volts. The battery is not damaged by either overdischarging or overcharging. The level of the electrolyte in each cell is an indication of the state of charge on the battery. Window openings in the battery case show the electrolyte level. As the battery cells discharge, the plates contract and cause the electrolyte level to drop. As the battery cells charge, the plates expand and the electrolyte level rises because of the increased volume of the plates. A cable from the battery supplies power to the receiver-transmitter through the power connector at the bottom of the receiver-transmitter case (fig. 1-2). A pin-type jack (positive terminal) and a wingnut (negative terminal) are located on the battery case to provide power to auxiliary equipment used with the radio set. The battery case is clamped to the receiver-transmitter when the radio set is in operation.

*c. Antenna AT-1098/TRC-77.* The antenna system consists of three separate long-wire antennas, a counterpoise, two antenna support cords, and two support cord lead weights. The counterpoise serves as a ground for the antenna system. Descriptive data on the antenna system components are listed below.

| Item | Color | Length (ft) |
|---|---|---|
| Antenna | White | 57 |
| Antenna | Purple | 40 |
| Antenna | Red | 25 |
| Counterpoise | Black | 50 |
| Antenna support cord | White | 50 |
| Antenna support cord | White | 100 |

## 1-9. Description of Minor Components

*a. Key, Type J-4.* This telegraph key is used to manually key the transmitter in the radio set. Its speed depends on the operator's experience. It is provided with a horseshoe knee clip to facilitate field operation.

*b. Headset, Type H 140A/GR and NT-49507B.* The headset, which is a part of the radio set, is required to monitor both incoming signals and signals being transmitted. It has an adjustable headband and an input impedance of 600 ohms.

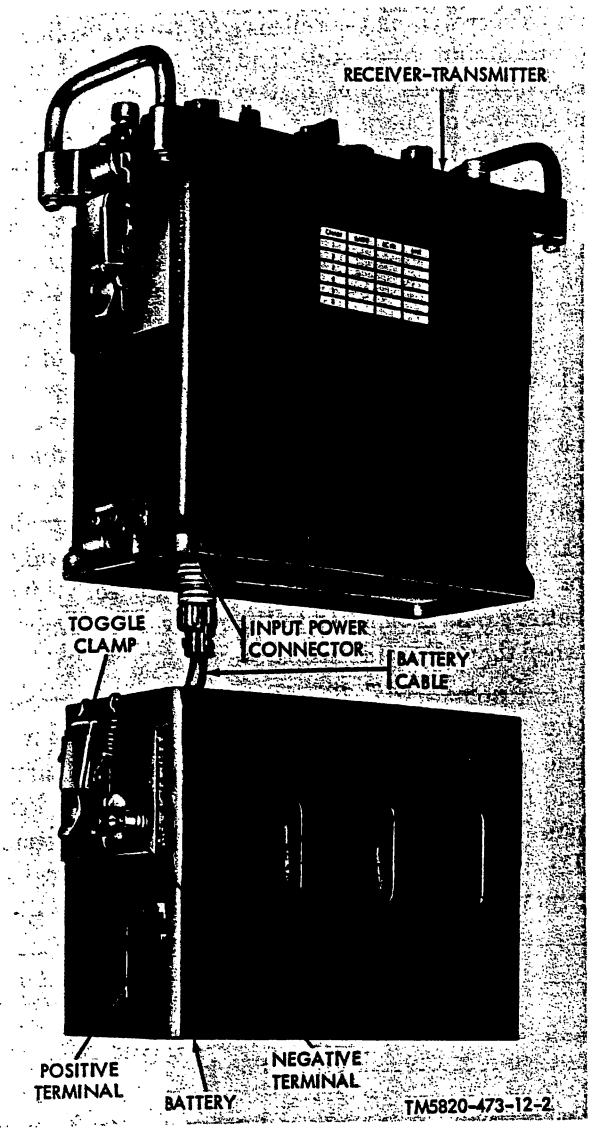



*Figure 1-2. Battery connections.*

*c. Cable Assemblies, Power, Electrical CX-11127/U and C22867.* The auxiliary power cable is used when it is necessary to provide power to the receiver-transmitter from a source other than the battery provided.

*d. Cable Assembly, Special Purpose, Electrical, Branched CN-11339/TRC77A.* The keyer adapter cable is used to connect an automatic keying device to the transmitter keying circuits. It also is used to provide power to the keying device from the radio set battery.

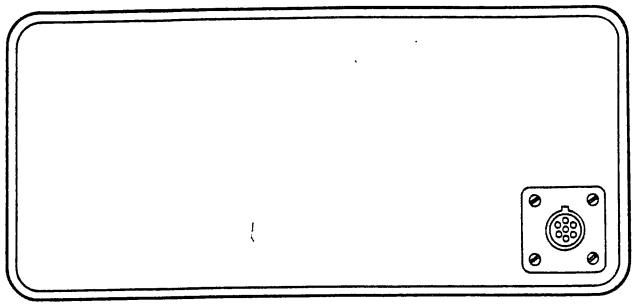
*e. Bag, Cotton Duck CW-618/TRC-77.* The accessory bag is used to store the following items:

(1) Key.
(2) Headset.
(3) Antennas and counterpoise.
(4) Antenna support cords and weights.
(5) Auxiliary power cable.
(6) Keyer adapter cable.

## 1-10. Differences in Models

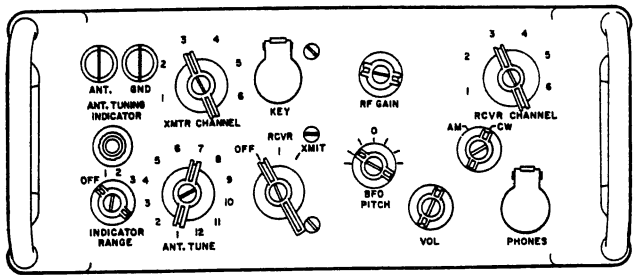
The differences between Radio Set AN/TRC-77 and Radio Set AN/TRC-77A (fig. 1-3) are as follows:

| Item | AN/TRC-77 | AN/TRC-77A |
|---|---|---|
| Receiver-transmitter. | 7-pin power connector. | 2-pin power connector. |
| Battery | 7-pin cable connector. | 2-pin cable connector. |
| Auxiliary power cable. | 7-pin connector | 2-pin connector. |
| Headset | Telephone-type plug. | Twist-lock type plug. |

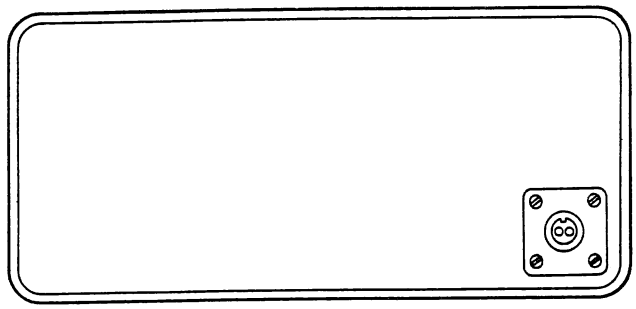


BOTTOM VIEW

RADIO SET AN/TRC-77

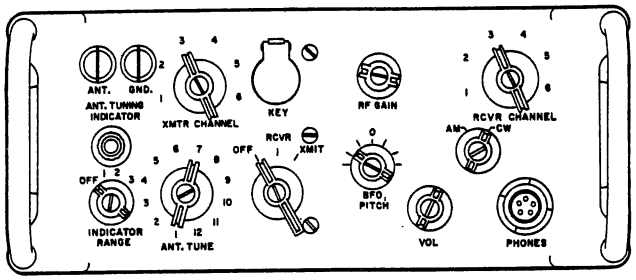



FRONT PANEL



BOTTOM VIEW

RADIO SET AN/TRC-77A




FRONT PANEL

TM5820-473-12-3

*Figure 1-3. Differences in models.*

# CHAPTER 2

# INSTALLATION

## 2-1. Unpacking

*a. Packaging Data.* Radio Sets AN/TRC-77(*) are shipped three sets at a time in a wooden packing crate. Each radio set and its components are packaged in separate fiberboard boxes within the crate. A typical shipping crate and its contents are shown in figure 2-1.

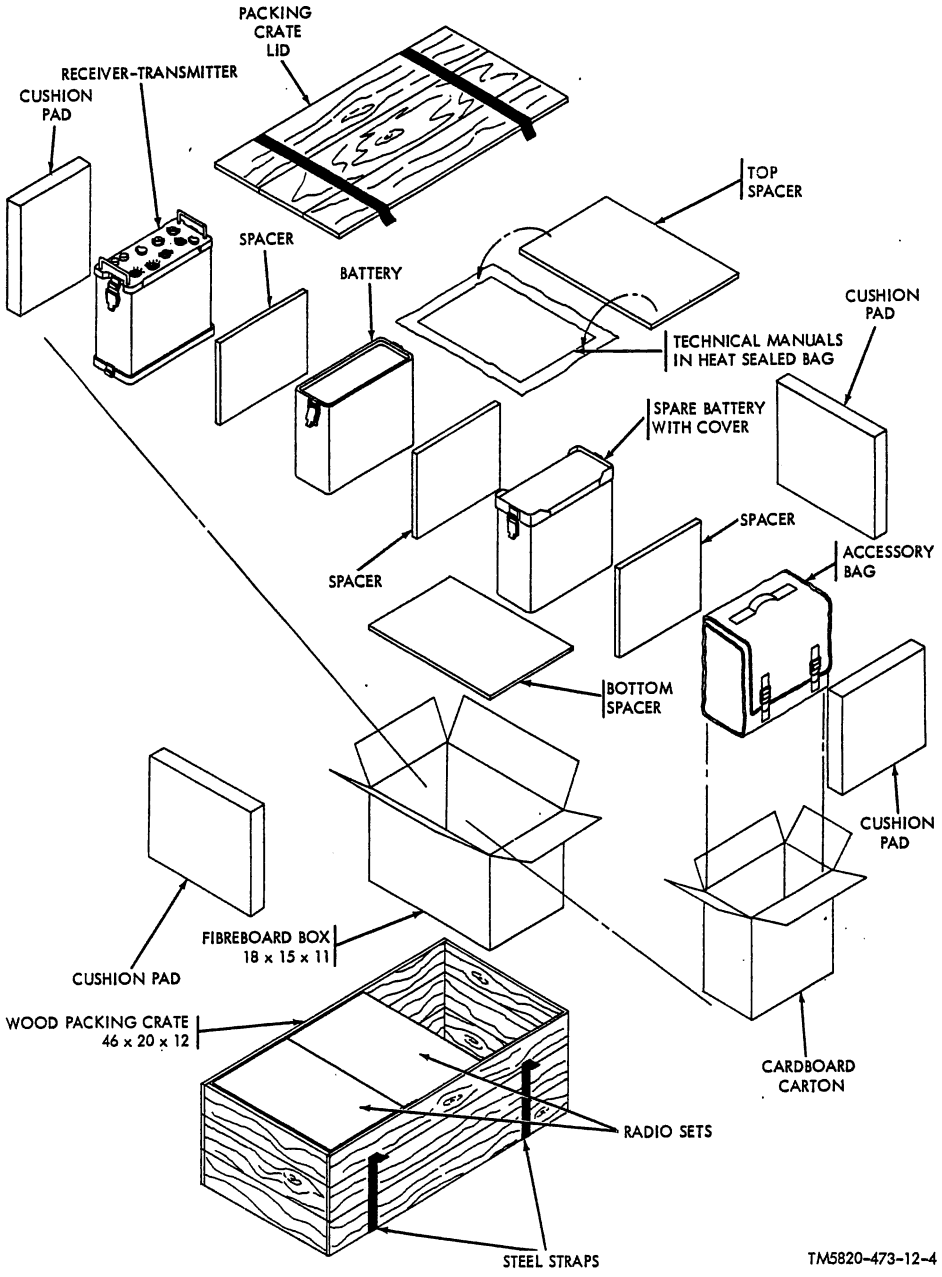



*Figure 2-1. Typical packaging of Radio Set AN/TRC-77(*).*

*b. Removing Contents.* Perform all of the procedures given below when unpacking the equipment.

(1) Cut and fold back the metal straps.

(2) Remove the nails from the top of the crate with a nailpuller. Remove the top of the crate. Do not attempt to pry off the top of the crate; damage to the equipment may result.

(3) Open the fiberboard boxes within the crate and remove the contents.

## 2–2. Checking Unpacked Equipment

*a.* Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6 (para. 1–2).

*b.* See that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the basic issue items list (app. II). Report all discrepancies in accordance with TM 38–750. Shortage of a minor assembly or part that does not affect proper functioning of the equipment should not prevent use of the equipment.

*c.* If the equipment has been used or reconditioned, see whether it has been changed by a modification work order (MWO). If the equipment has been modified, the MWO number will appear on the front panel near the nomenclature plate. Check to see whether the MWO number (if any) and appropriate notations concerning the modification have been entered in the equipment manual.

*Note.* Current MWO's applicable to the equipment are listed in DA Pam 310–4.

## 2–3. Preparing Equipment for Use

***Cautions:***

**1. Do not add distilled water to the discharged battery except when specifically instructed to do so. To do otherwise will defeat the nonspill feature of the battery.**

**2. Do not add water to the battery which may be contaminated with traces of copper; the battery cells will become damaged.**

*a. Charging Batteries.* There is no easy way to determine the state of charge on the battery while in the field. The capacity of a fully charged battery is 14 ampere-hours. Because of power loss during charging, it takes a 20-ampere-hour charge to bring the battery to a full charged state. Since the battery cannot be damaged by overcharging, whenever the condition of charge on a battery is in doubt, the battery should be given a full charge. Normally it will require 4 hours to charge a battery on the alternating current (ac) battery charger (fig. 6–1) and 2 hours on the direct current (dc) battery charger (fig. 6–2). To charge the battery, proceed as follows:

(1) Remove the jumper wire from the terminals on the side of the battery case.

(2) Charge the batteries with either AC Battery Charger PP–3251/TRC–77 (ac battery charger) or DC Battery Charger PP–3252/TRC–77 (dc battery charger) by the use of the appropriate operating procedures given in chapter 6.

(3) After the battery has been fully charged and allowed to stand for several hours, add enough distilled water to bring the electrolyte level up to the black lines seen through the windows (fig. 1–2) in the battery case.

*b. Key Adjustment.*

(1) Adjust the lateral pivot screws on each side of the armature to position the electrical contact on the armature directly over the stationary contact on the base.

(2) Adjust the travel screw at the end of the armature for approximately one-sixteenth inch between the electrical contacts.

(3) Adjust the tension screw at the center of the armature for best key operation.

*c. Initial Assembly.*

***Caution:* Before connecting the battery to the receiver-transmitter, set the OFF–RCVR–XMIT switch on the receiver-transmitter front panel to the OFF position; otherwise, damage to the equipment may result.**

(1) Connect the battery cable to the jack on the bottom of the receiver-transmitter case (fig. 1–2); see that the keyway on the cable plug meets the key on the power jack to insure proper polarity.

(2) Stow excess battery cable in the recess in the battery case.

(3) Position the receiver-transmitter on top of the battery and secure in place with the two toggle clamps provided (fig. 1–2).

*d. Auxiliary Power Source.* An auxiliary power source may be used to furnish power to the radio set if the battery assembly is damaged or discharged. A 12-volt dc source is required. Connect the auxiliary power source to the radio set as described below.

***Caution:* Do not use a power source greater than 17 volts, or the radio set will be damaged.**

(1) Disconnect the battery cable (fig. 1–2) from the input power connector on the receiver-transmitter.

(2) Connect the auxiliary power cable to the input power connector.

(3) Connect the red clip of the auxiliary power cable to the positive terminal and the black clip to the negative terminal of the auxiliary power source.

## 2–4. Siting

When locating the antenna system, consider the following:

*a.* Radio signals are absorbed and sometimes reflected by nearby obstructions, such as hills, metal buildings and bridges, or telephone lines that extend above the height of the antenna (fig. 2–2). Transmitted signals have a greater range when the antenna is as high above the ground as possible. Transmission and reception are best over water or level ground.

*b.* If transmission and reception in all directions are required, place the antenna on the highest hill within the operating area.

*c.* When in rear areas, avoid placing the radio set near sources of electrical interference, such as power or telephone lines, radar sets, and field hospitals.

*d.* Try several locations within the general area and select the one that provides the best signal reception from the desired stations.

*e.* Enemy jamming action against the receiver is always a possibility. The effects of enemy jamming may be reduced by locating the antenna so that nearby obstructions act as a screen in the direction of probable sites of enemy jamming transmitters. This screening action may also reduce the transmitted signal strength in a direction toward the enemy, thereby making it more difficult for the enemy to intercept the signals.

## 2–5. Installation of Equipment

(fig. 2–2).

The installation of Radio Set AN/TRC–77(*) includes placing the radio set at the selected site, stringing the antenna, attaching the counterpoise, connecting the headset, and connecting the key on the automatic keying device. The installation procedures are as follows:

*a. Antenna.* The length of the antenna wire to be used depends on the transmitting frequency and should be selected in accordance with the following chart. Install the antenna as outlined in (1) through (3) below.

Antenna length data

| Antenna length | Color | Channel | Frequency (kc) |
|---|---|---|---|
| 57 ft | White | 1 | 3, 000 |
| 40 ft | Purple | 2 | 4, 060 |
| | Purple | 3 | 5, 100 |
| 25 ft | Red | 4 | 6, 000 |
| | Red | 5 | 7, 000 |
| | Red | 6 | 8, 000 |

(1) Connect the connector on the selected antenna to the ANT. terminal on the receiver-transmitter front panel.

(2) Unwind the antenna from its bobbin in the general direction of a tree limb or other high support to be used. Fasten one of the antenna support cords to the loose end of the antenna and attach a weight to the other end of the cord.

(3) String the antenna by throwing the weight over the support and drawing the antenna tight.

*b. Counterpoise.* Install the counterpoise as follows:

(1) Connect the connector on the counterpoise to the GRD terminal on the receiver-transmitter front panel.

(2) Unwind the counterpoise from its bobbin in the opposite direction of the antenna, and spread the ends of the counterpoise out on the ground until they are 90° apart.

*c. Headset.* Connect the headset to the PHONES jack on the receiver-transmitter front panel.

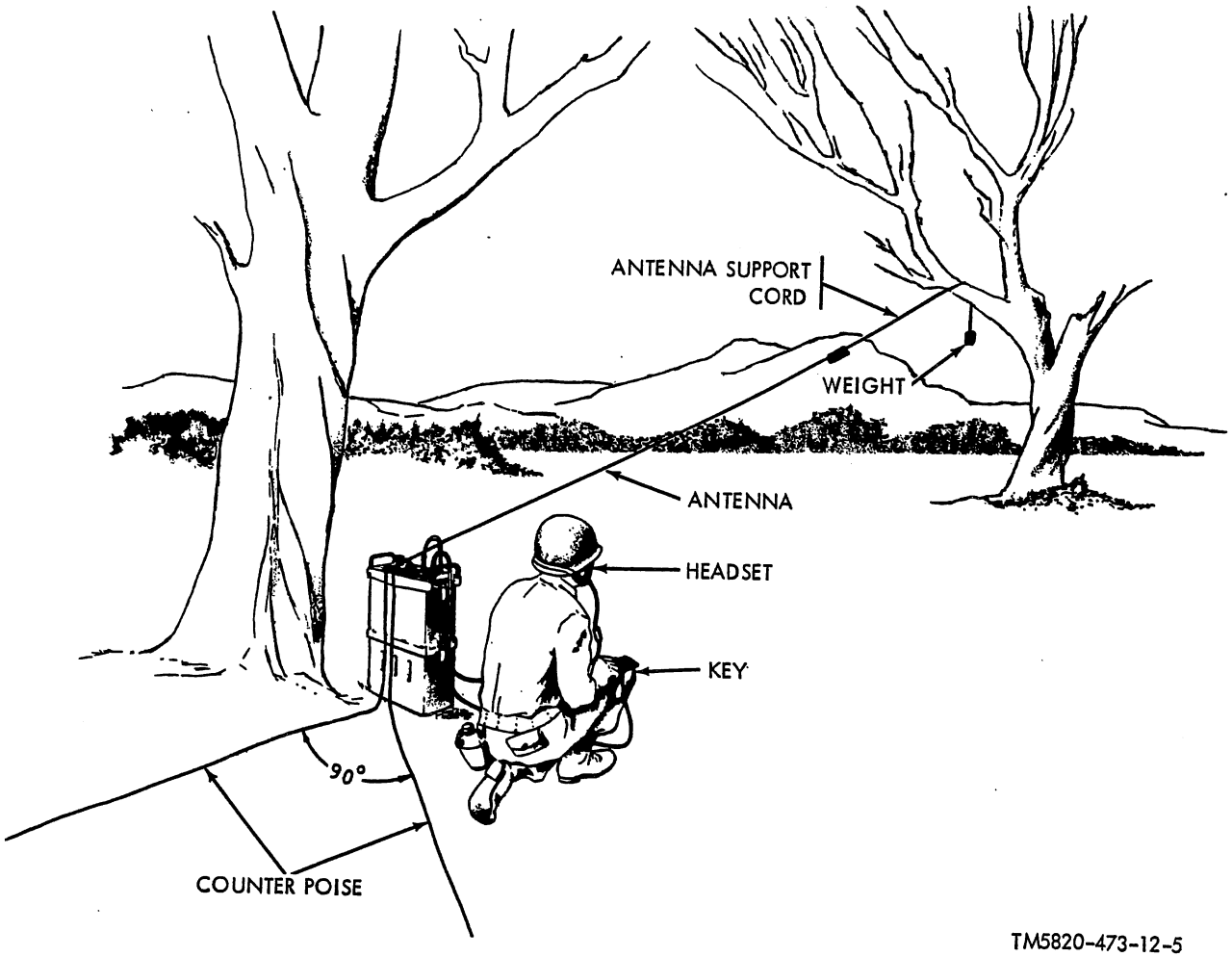



*Figure 2-2. Typical radio set installation.*

*d. Key.* If the transmitter is to be keyed manually, connect the key to the KEY jack on the receiver-transmitter front panel.

*e. Keyer Adapter Cable.* If the transmitter is to be keyed by an automatic keying device, connect the keyer adapter cable to the KEY jack on the receiver-transmitter front panel and the two power leads to the appropriate terminals at the side of the battery assembly. Insert the power lead marked +12V into the positive terminal; connect the power lead marked GRD to the negative terminal. Connect the other end of the keyer adapter cable to the automatic keying device.

## 2-6. Transmitter Tuning Procedures

***Warning:* Do not use a vacuum-tube voltmeter for tuning and alignment. The common lead of the vacuum-tube voltmeter connected to the metal case of the AN/TRC-77(*) places the case at +120 volts dc.**

*a. Oscillator Tuning.*

*Note.* Tuning procedures are to be accomplished at the direct support level.

(1) Remove the chassis from the case (para. 5-11).
(2) Remove the transmitter crystal retainer holddown plate located below V201.
(3) Insert six transmitter crystals in ascending order in their crystal holders.
(4) Replace the transmitter crystal retainer holddown plate.
(5) In the AN/TRC-77, position the power amplifier tuning range links for each transmitter channel frequency. A pictorial diagram of the link position set-

tings is located below the power amplifier tuning range link board. The AN/TRC-77A does not have tuning range links.

(6) Connect the test battery or bench power supply to TEST POWER J302. Connect the positive (+) lead of the TS-352(*)/U to TP202 and the negative (−) lead to TP201.

(7) Set the TS-352(*)/U to the 10-volt range. Set TUNE OPERATE switch S204 to TUNE and the XMTR CHANNEL switch to the channel to be turned.

(8) Turn the power switch to XMIT.

*Note.* If the chassis is laid flat on a bench, the TUNE OPERATE switch will snap back into the OPERATE position. To prevent this, support the rear of the chassis on a small wooden block.

(9) For each channel, rotate the oscillator coil tuning slug and capacitor fully clockwise.

(10) For each channel, in turn, rotate the oscillator coil tuning slug and capacitor in small increments counterclockwise until the TS-353(*)/U meter pointer dips to a minimum. It may be necessary to set the TS-352(*)/U to the 3-volt scale to observe minimum dip.

(11) Turn the power switch to OFF.

*b. Power Amplifier Tuning.* Before tuning the power amplifier, be sure that the antenna is disconnected.

(1) Insert the negative lead of the TS-352(*)/U into TP301 and connect the positive lead to the case. Set the TS-352(*)/U to the 10-volt range.

(2) Connect Key J-45 to KEY.

(3) Rotate the power amplifier tuning capacitors ½ turn clockwise (two capacitors for each channel).

(4) Turn power switch to XMIT.

(5) Close Key J-45.

(6) For each channel, rotate the power amplifier tuning capacitors, in small increments, counterclockwise until the TS-352(*)/U meter pointer dips to a minimum. It may be necessary to set the TS-352(*)/U to the 3-volt scale to observe minimum dip.

(7) Turn the power switch to OFF.

(8) Disconnect the TS-352(*)/U from TP301 and chassis.

(9) Disconnect Key J-45.

## 2-7. Receiver Tuning Procedures

*Note.* Tuning procedures are to be accomplished at the direct support level.

The RF and MIXER controls necessary for receiver tuning are located on the right-hand side of the chassis.

*a. Preliminary.*

(1) Remove the receiver crystal retainer holddown plate.

(2) Insert 6 receiver crystals, in ascending order, into the receiver crystal holders.

(3) Replace the receiver crystal retainer holddown plate.

(4) In the AN/TRC-77, position the receiver mixer and rf screw links for each receiver channel frequency. For receiver operation between 3 and 3.8 mc, position the channel links between the center screw terminal and the bottom screw terminal. To operate between 3.8 and 8 mc, position the channel links between the center screw terminal and the top screw terminal. The AN/TRC-77A does not contain channel links.

(5) Connect the headset to the PHONES connector.

(6) Turn the RCVR CHANNEL switch to channel 1.

(7) Set the AM-CW switch to AM.

(8) Turn the RF GAIN and VOL controls fully clockwise.

(9) Connect the AN/URM-25(*) to ANT and GRD terminals and tune the AN/URM-25(*) to the channel frequency.

*Note.* The channel frequency is 455 kc *below* that marked on the channel frequency crystal.

(10) Turn the power switch to RCVR.

(11) Set the AN/URM-25(*) MOD SELECTOR dial to 1,000 cps and the % MODULATION control for 30 percent modulation.

(12) Adjust the RF and MIXER tuning capacitors for channel 1 to give maximum output in the headset. Reduce the AN/URM-25(*) rf signal level as the RF and MIXER tuning capacitors are adjusted. With the circuit peaked, 1.0-

microvolt output from the AN/URM-25(*) should produce a strong tone in the headset.

(13) Repeat steps (10) through (12) above for channels 2 through 6.

(14) Turn the power switch to OFF.

(15) Disconnect the power supply used, TS-352(*)/U, headset, and AN/URM-25(*).

*Note.* The TUNE OPERATE switch will automatically turn to OPERATE when the chassis is replaced in the case.

(16) Replace the chassis in its case and lock the chassis to the case.

# CHAPTER 3

# OPERATING INSTRUCTIONS

## Section I. OPERATOR'S CONTROLS, INDICATORS, SWITCHES, AND JACKS

### 3-1. Damage from Improper Settings

When setting the controls, check to see that the INDICATOR RANGE switch on the receiver-transmitter front panel is set to OFF before setting the OFF-RCVR-XMIT switch to XMIT.

### 3-2. Receiver-Transmitter RT-654(*)/TRC-77 Controls, Switches, Indicators, and Jacks

(fig 3-1)

| Control, indicator, switch, or jack | Function |
|---|---|
| ANT. terminal | Connect antenna to receiver-transmitter. |
| GND terminal | Connects counterpoise to receiver-transmitte . |
| ANT. TUNING INDICATOR. | Indicates transmitter power output. |
| INDICATOR RANGE selector switch. | Selects ANT. TUNING INDICATOR sensitivity. |
| ANT. TUNE selector switch | Tunes antenna circuit. |
| XMTR CHANNEL selector switch. | Selects transmitter frequency. |
| KEY jack | Connects key to receiver-transmitter. |
| OFF-RCVR-XMIT selector switch. | Selects operation mode. |
| RF GAIN control | Adjusts gain of receiver rf stages. |
| BFO PITCH control | Adjusts frequency of beat frequency oscillator in CW mode. |
| VOL control | Adjusts audio level at the headset. |
| RCVR CHANNEL selector switch. | Selects receiver frequency. |
| AM-CW selector switch | Selects voice or code modulated signals in receiver. |
| PHONES jack | Connects headset to receiver-transmitter. |

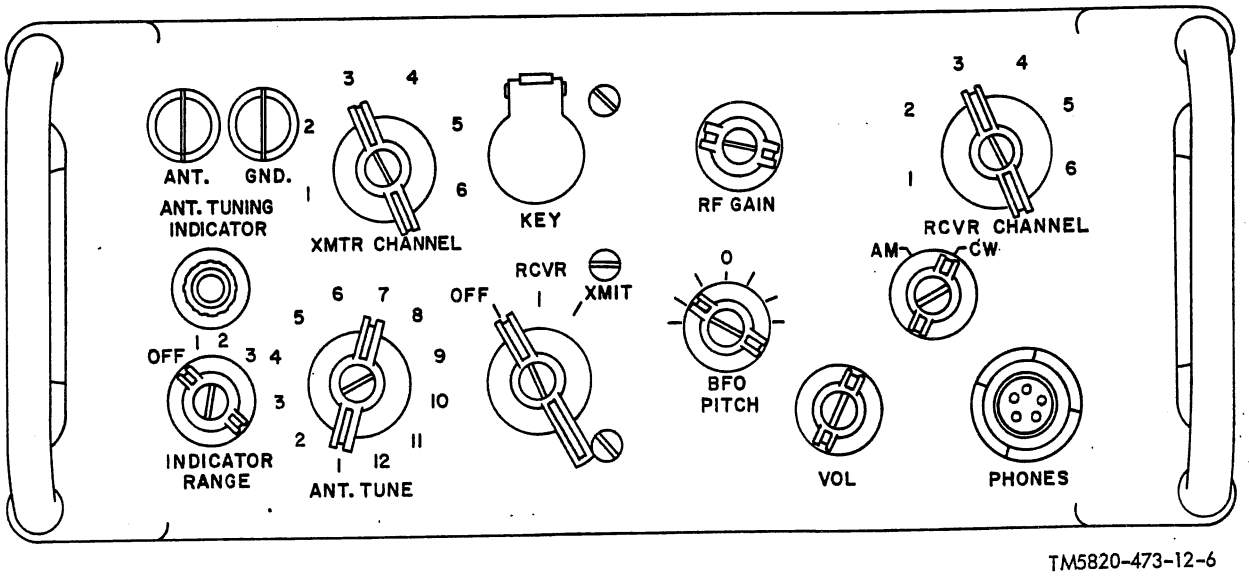



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*Figure 3-1. Front panel controls, indicators, switches, and jacks.*

## Section II. OPERATION UNDER USUAL CONDITIONS

### 3-3. Types of Operation

The radio set is operated locally. It can receive both amplitude-modulated and continuous-wave signals. The transmitter can be operated by a manual telegraph key or by an automatic keying device at up to 300 words per minute.

### 3-4. Preliminary Starting Procedure

Perform the preliminary operations listed below before operating the equipment (para. 3-5). Be sure that the radio set has been properly installed (para. 2-5).

*a.* Set the OFF-RCVR-XMIT switch on the receiver-transmitter front panel to OFF.

*b.* Set the INDICATOR RANGE switch to OFF.

*c.* Set the XMTR CHANNEL switch to the desired transmitter channel.

*d.* Set the RCVR CHANNEL switch to the desired receiver channel.

*e.* Set the ANT. TUNE switch to position 1.

*f.* Set the AM-CW switch to the desired receiver mode.

*g.* Set the BFO PITCH control to 0.

*h.* Set the RF GAIN control and the VOL control to the approximate center of their ranges.

*i.* If the automatic keying device is installed, disconnect the automatic keying device from the KEY jack and connect the telegraph key to the KEY jack.

### 3-5. Operating Procedures

***Warning:*** **The following procedures require the breaking of radio silence imposed by any command.**

*a. Transmitter Operations.*

(1) Set the OFF-RCVR-XMIT switch to XMIT and allow 2 minutes for the radio set to warm up before proceeding.

(2) Set the INDICATOR RANGE switch to 1.

(3) Close the key (for not more than 30 seconds) and rotate the ANT. TUNE switch until the brightest indication is obtained on the ANT. TUNING INDICATOR.

(4) If the ANT. TUNING INDICATOR does not glow, set the INDICATOR RANGE switch to 2 and repeat the procedure given in (3) above.

(5) If the ANT. TUNING INDICATOR still does not glow, set the INDICATOR RANGE switch to 3 and repeat the procedure given in (3) above.

(6) Set the INDICATOR RANGE switch to OFF.

(7) If the automatic keying device is to be used, disconnect the telegraph key from the KEY jack and connect the automatic keying device to the KEY jack.

(8) Operate the transmitter by the use of the key or the automatic keying device.

*b. Receiver Operations.*

(1) Set the OFF-RCVR-XMIT switch to RCVR.

(2) Adjust the VOL control for the desired audio level at the headset.

(3) Adjust the RF GAIN control for the desired signal level at the headset.

(4) If the receiver is being operated in the CW mode, adjust the BFO PITCH control for the most desirable audio tone.

### 3-6. Recognition and Identification of Jamming

Very likely, under real or simulated tactical conditions, the receiver will be jammed by the enemy. Enemy jamming is easily done by transmitting a strong signal on the same frequency and thereby make it difficult or impossible to hear the desired signal. Unusual noises or strong interference heard on the receiver may be enemy jamming, signals from a friendly station, noise from a local source, or a defective receiver. To determine whether or not the interference is originating in the receiver, disconnect the antenna, remove the antenna, or short the ANT. post to the GND terminal. If the interference *continues*, the receiver is defective. Enemy jamming signals may be typed as *continuous wave* or *modulated.* A jamming signal may be intended to block a single frequency. This method is called spot jamming. The enemy may use one or several transmitters to jam a block or band of frequencies. This method is called barrage jamming.

*a. Continuous-Wave Jamming.* Cw jamming is transmitted as a steady carrier. This signal beats with another signal and produces a steady tone in the headset. Cw jamming signals may also be keyed by the use of a random on-and-off signal; or actual code characters keyed at the same rate or a little faster than the signal being received.

*b. Modulated Jamming.* Modulated jamming signals may consist of noise, laughter, singing, music, various tones, or most any ususual sound, or it may be a combination of these sounds. Various types of modulated jamming signals are explained below.

(1) *Spark.* Spark is one of the simplest, most effective, and most easily produced jamming signals. This type of signal sounds very rough, raspy, and sometimes like and electric motor with sparking brushes running. Since this signal is very broad; it will interfere with a large number of communication channels.

(2) *Sweepthrough.* This signal is the result of sweeping or moving a carrier back and forth across your frequency at a slow or rapid rate. The numerous signals of varying amplitude and frequency produce a sound like that of a low-flying airplane passing overhead. This type of jamming is effective over a broad range of frequencies. When it is varied rapidly, it is effective against all types of voice signals.

(3) *Stepped tones or bagpipes.* The signal usually consists of several separate tones. The tones are transmitted in the order of first increasing and then decreasing pitch, repeated over and over. The audible effect is like the sound of a Scottish bagpipe.

(4) *Noise.* Noise is random both in amplitude and frequency. It is considered one of the better types of jamming modulation. It produces a sound similar to that heard when a receiver is not tuned to a station and the volume or gain control is turned to maximum.

(5) *Gulls.* This signal consists of a quick rise and slow fall of a variable audiofrequency. The sound is similar to the cry of the sea gull.

(6) *Tone.* This signal consists of a single audiofrequency of unvarying tone. It produces a steady howl in the headset. Another use of tone is to vary it slowly. It produces a howling sound of varying pitch.

## 3–7. Antijamming

When it is known that a receiver is being jammed, the operator will notify the immediate superior officer immediately and continue to operate the equipment. To provide maximum intelligibility of jammed signals, follow the operational procedure below.

*a.* Operate the receiver as instructed in paragraph 3–5*b*.

*b.* Vary the RF GAIN control. This action may reduce the jamming signal enough to permit the weaker wanted signal to be heard.

*c.* Vary the VOL control. The level of the desired signal may be raised enough to be heard.

*d.* If the above procedures do not provide sufficient signal separation for operation, change to the alternate frequency and alternate call sign.

## 3–8. Stopping Procedure

The entire radio set may be shut down or power may be removed from either the receiver or transmitter as follows:

*a.* To remove power from both the receiver and transmitter, set the OFF–RCVR–XMIT switch to OFF.

*b.* To remove power from the transmitter only, set the OFF–RCVR–XMIT switch to RCVR.

*c.* To remove power from those receiver circuits not required during transmitter operations, set the OFF–RCVR–XMIT switch to XMIT.



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## Section III. OPERATION UNDER UNUSUAL CONDITIONS

### 3-9. Operation at Low Temperatures

At low temperatures, the batteries used in the radio set have poor efficiency, and transmitter performance may become unsatisfactory. To avoid this condition, batteries should be kept as warm as possible. It may be necessary to disconnect the battery from the receiver-transmitter and to use the auxiliary power cable to connect the receiver-transmitter to an external power source.

***Caution:*** **Do not attempt to operate the radio set from a voltage source greater than 17 volts. To do so will damage the radio set and make it inoperative.**

### 3-10. Operation Under Tropical Conditions

When operated in tropical climates, the radio set may be operated in swampy areas where extreme moisture conditions exist. The high relative humidity causes condensation of moisture on the radio set whenever the temperature of the equipment becomes lower than that of the air. Try to keep the radio set dry.

# CHAPTER 4

# OPERATOR'S MAINTENANCE INSTRUCTIONS

## 4-1. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of Radio Set AN/TRC-77(*) are listed below together with references to the paragraphs covering the specific maintenance functions. The duties assigned do not require any tools or test equipment.

*a.* Operator's daily preventive maintenance checks and services (para. 4-4).
*b.* Cleaning (para. 4-5).
*c.* Troubleshooting (para. 4-6).
*d.* Repairs (para. 4-7).

## 4-2. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of the radio set to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

*a. Systematic Care.* The procedures given in paragraphs 4-4 and 4-5 cover routine systematic care and cleaning essential to proper upkeep and operation of the radio set.

*b. Preventive Maintenance Checks and Services.* The operator's daily preventive maintenance checks and services chart (para. 4-4) outlines functions to be performed daily. These checks and services are to maintain the radio set in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the charts indicate what to check, how to check, and what the normal conditions are; the *References* column lists the illustrations and paragraphs that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, higher level maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

## 4-3. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of Radio Set AN/TRC-77(*) are required on a daily basis. Paragraph 4-4 specifies the items to be checked and serviced. In addition to the routine checks and services, the radio set should be rechecked and serviced immediately before going on a mission and as soon after completion of the mission as possible.

## 4-4. Operator's Daily Preventive Maintenance Checks and Services Chart

| Sequence No. | Item to be inspected | Procedure | References |
|---|---|---|---|
| | | PHYSICAL CHECKS | |
| 1 | Radio set | Check to make sure that all components of the radio set are present. | App. II and fig. 1-1. |
| 2 | Exterior surfaces | Clean the receiver-transmitter, battery, key, and headset (para. 4-5). | |
| 3 | Cables and connectors | Check all cables and connectors for cracks, breaks, corrosion, and dirt. | Para. 4-5c. |
| 4 | Antenna system components | Check all antenna system components for cracks, broken insulation, cuts, corrosion, and dirt. | |

| Sequence No. | Item to be inspected | Procedure | References |
|---|---|---|---|
| 5 | Headset | Check the headset for earpiece cracks, ear-cushion tears, broken or worn cable insulation, and dirty or damaged connector. | |
| 6 | Key | Check the key for dust and dirt, worn or pitted contacts, broken or worn cable insulation, loose or corroded electrical connections and proper adjustment (para. 2-3*b*). | |
| 7 | Battery | Check the electrolyte level of each cell in both batteries to be sure that both batteries are fully charged. | Para. 2-3*a*. |
| | PRELIMINARY OPERATIONAL CHECKS | | |
| 8 | Assembly and installation | Connect the battery to the receiver-transmitter (para. 2-3*c*). Install the radio set (para. 2-5). | |
| 9 | Knobs, controls, and switches | While making the preliminary control settings (item 8), observe that the mechanical action of each knob, control, and switch is smooth and free of external or internal binding. | |
| 10 | Preliminary control settings | Set all the controls to their preliminary positions (para. 3-4). | |
| 11 | OFF-RCVR-XMIT switch | Set OFF-RCVR-XMIT switch to RCVR. AM signal from test station can be heard at headset. | Fig. 3-1. |
| 12 | RF GAIN control | Rotate RF GAIN control through its entire range. The signal level at the headset varies as the control is rotated. | Fig. 3-1. |
| 13 | VOL control | Rotate the VOL control through its entire range. The signal level at the headset varies as the control is rotated. | Fig. 3-1. |
| 14 | BFO PITCH control | Set the AM-CW switch to CW. The CW signal from the test station can be heard at the headset. Rotating the BFO PITCH control varies the frequency of the audio tone at the headset. | Fig. 3-1. |
| 15 | RCVR CHANNEL switch | Repeat steps 9 through 12 above for each position of the RCVR CHANNEL switch. | Fig. 3-1. |
| | TRANSMITTER CHECKS | | |
| | | ***Warning:*** **The following procedures require the breaking of radio silence. This manual does not authorize the breaking of radio silence imposed by any command.** | |
| 16 | Transmitter operation | Check the transmitter operation in accordance with the procedures contained in paragraphs 3-5*a*(1) through 3-5*a*(7). | |
| 17 | XMTR CHANNEL switch | Repeat step 14 above for each position of the XMTR CHANNEL switch. | |

## 4-5. Cleaning

Inspect the exteriors of the receiver-transmitter, batteries, and accessory equipment. The exterior surfaces should be free of dust, dirt, grease, and fungus.

*a.* Remove all dust and surface dirt with a clean soft cloth.

***Warning:*** **Prolonged breathing of cleaning compound is dangerous; make sure that adequate ventilation is provided. Cleaning compound is flammable; do not use near a flame. Avoid contact with the skin; wash off any that spills on your hands.**

*b.* Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened (not wet) with Cleaning Compound (Federal Stock No. 7930-395-9542).

*c.* Remove dust or dirt from plugs and jacks with a brush.

*d.* Clean the receiver-transmitter front panel and control knobs with a clean soft cloth. If dirt is difficult to remove, dampen the cloth with water; mild soap may be used for more effective cleaning.

*e.* Clean the accessory bag with a brush and remove spots with a cloth that has been moistened with cleaning compound.

***Warning:*** **Contact with battery electrolyte can cause serious burns. If electrolyte is splashed or spilled on the skin or clothing, rinse thoroughly with water and apply a mild solution of vinegar or boric acid.**

***Cautions:***

**1. To avoid damage to battery cells and gasket, do not use solvents for cleaning the battery.**

**2. Do not use a wire brush on the battery because short circuiting between the cell terminals will occur and cause damage to the battery.**

*f.* Remove white potassium carbonate deposits from the top of the battery cells with a stiff nylon brush.

*g.* Clean the top of the battery cells, the fillercap vent plugs, and the battery terminal links with a clean soft cloth.

*h.* If necessary, remove the fillercap vent plugs and wash with running water to remove chemical deposits. Dry the plugs with a clean cloth before installation.

## 4-6. Troubleshooting

The following troubleshooting information is intended for use with the operator's daily preventive maintenance checks and services chart (para. 4-4).

*a. Receiver.* If a malfunction in the receiver is indicated, proceed as follows:

(1) Check the electrical connections on the front panel, battery, and battery cable.

(2) Set the OFF-RCVR-XMIT switch to OFF and replace the battery in use with the spare battery.

(3) Repeat the receiver operation checks listed in the operator's daily preventive maintenance checks and services chart (para. 4-4). If the malfunction has not been corrected, higher level maintenance is required.

*b. Transmitter.* If a malfunction in the transmitter is indicated, proceed as follows:

(1) Check the electrical connection at the KEY jack on the front panel.

(2) Replace the ANT. TUNING indicator lamp (para. 4-7).

(3) Set the OFF-RCVR-XMIT switch to OFF and replace the battery in use with the spare battery.

(4) Repeat the transmitter operation checks listed in the operator's daily preventive maintenance checks and services chart (para. 4-4). If the malfunction has not been corrected, higher level maintenance is required.

## 4-7. Repairs

The only repair that the operator is authorized to perform is the replacement of the ANT. TUNING indicator lamp which is replaced as follows:

*a.* Turn the glass indicator lens on the ANT. TUNING indicator counterclockwise and pull out to expose the lamp.

*b.* Press in on the lamp and turn counterclockwise to unlock. Tilt the receiver-transmitter forward until the lamp falls out.

*c.* Insert the new lamp, press, and turn it clockwise to lock.

*d.* Install the glass indicator lens by turning it clockwise.

# CHAPTER 5

# ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

## Section I. GENERAL

### 5-1. Scope of Organizational Maintenance

*a.* This chapter contains instructions covering organizational maintenance of Radio Set AN/TRC-77(*). It includes instructions for performing preventive and periodic maintenance services, troubleshooting, and repair functions to be accomplished by the organizational repairman.

*b.* Organizational maintenance of Radio Set AN/TRC-77(*) includes:

(1) Preventive maintenance (paras. 5-4 through 4-8).
(2) Troubleshooting (para. 5-9 and 5-10).
(3) Tube testing techniques (para. 5-11).
(4) Repair and replacement (para. 5-12 through 5-14).

### 5-2. Internal Differences in Models

The internal differences between Radio Set AN/TRC-77 and Radio Set AN/TRC-77A do not affect organizational maintenance.

### 5-3. Tools, Materials, and Test Equipment Required

A list of parts authorized for organization maintenance appears in appendix IV. The tools, materials, and test equipment required for organizational maintenance are listed below.

*a. Tools.* The tools required for organizational maintenance are supplied in Tool Kit, Radio Repair TK-115/G.

*b. Materials.* The only material required for organizational maintenance is Cleaning Compound (Federal Stock No. 7930-395-9542).

*c. Test Equipment.*

(1) Multimeter AN/URM-105.
(2) Test Set, Electron Tube TV-7/U.

### 5-4. Preventive Maintenance

*a.* Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all levels of maintenance concerned with the equipment and includes the inspection, testing, and repair of replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next scheduled periodic service. Preventive maintenance checks and services of Radio Set AN/TRC-77(*) at the organizational level are made at monthly and quarterly intervals unless otherwise directed by the commanding officer.

*b.* Maintenance forms and records to be used and maintained on this equipmnt are specified in TM 38-750.

### 5-5. Monthly Maintenance

Perform the maintenance functions indicated in the organizational monthly preventive maintenance checks and services chart (para. 5-6) once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours a 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 maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (requires service before operation) does not require monthly preventive maintenance.

## 5-6. Organizational Monthly Preventive Maintenance Checks and Services Chart

| Sequence No. | Item | Procedure | References |
|---|---|---|---|
| 1 | Battery cells | Remove battery cells from the case and check for evidence of cracks or leaks. | None. |
| 2 | Battery case | Check case for corrosion, worn or cracked wiring insulation, or a damaged gasket. | None. |

## 5-7. Quarterly Maintenance

Quarterly preventive maintenance checks and services on Radio Set AN/TRC-77(*) are required. Periodic monthly services constitute a part of the quarterly preventive maintenance checks and services and must be performed concurrently. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38-750. Perform all the checks and services listed in the organizational quarterly preventive maintenance checks and services chart (para. 5-8) in the sequence listed.

## 5-8. Organizational Quarterly Preventive Maintenance Checks and Services Chart

| Sequence No. | Item to be inspected | Procedure | References |
|---|---|---|---|
| 1 | Completeness | See that the equipment is complete | App. II. |
| 2 | Cleanliness | See that the equipment is clean (para. 4-5) | |
| 3 | Preservation | Check all surfaces for evidence of fungus. Remove rust and corrosion and spot-paint bare spots. | Para. 4-5*b*. |
| 4 | Publications | See that all publications are complete, serviceable, and current. | DA Pam 310-4. |
| 5 | Modifications | Check DA Pam 310-4 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled. | TM 38-750 and DA Pam 310-4. |
| 6 | Headset | Check the headset for earpiece cracks, ear-cushion tears, broken or worn cable insulation, and dirty or damaged connector. | |
| 7 | Key | Check the key for dust and dirt, worn or pitted contacts, broken or worn cable insulation, loose or corroded electrical connections, and proper adjustment (para. 2-3*b*). | |
| 8 | Auxiliary power cable | Check the auxiliary power cable for broken or cracked insulation, and for damaged, dirty, or corroded connector and clips. | Para. 4-5*c*. |
| 9 | Keyer adapter cable | Check the keyer adapter cable for broken or cracked insulation, and for damaged, dirty, or corroded connectors and terminals. | Para. 4-5*c*. |
| 10 | Accessory bag | Check the accessory bag for dirt, mildew, and tears | Para. 4-5*e*. |
| 11 | Antenna system | Check all antenna system components for cracks, broken insulation, cuts, corrosion, and dirt. | |
| 12 | Tubes | Check receiver-transmitter tubes | Para. 5-11. |
| 13 | Spare parts | Check all spare parts (operator and organizational) for general condition and method of storage. There should be no evidence of overstock, and all shortages must be on valid requisitions. | App. II and IV. |
| 14 | Installation | See that the equipment is properly installed (para. 2-5). | |

| Sequence No. | Item to be inspected | Procedure | References |
|---|---|---|---|
| 15 | Connections | Check to be sure that:<br>*a.* Plugs and sockets are clean, intact, and not loose-fitting.<br>*b.* Key and headset are connected to the KEY and PHONES jack on the front panel. | Para. 4–5*c*. |
| 16 | Switches, controls, and knobs | While making the operating checks (items 17 and 18), observe that the mechanical action of each switch and control is smooth and free of external or internal binding. Tighten or replace loose or damaged knobs. | |
| 17 | Receiver | Check the receiver in accordance with the operator's daily preventive maintenance checks and services chart (para. 4–4). | |
| 18 | Transmitter | Check the transmitter in accordance with the operator's daily preventive maintenance checks and services chart (para. 4–4). | |

## Section II. TROUBLESHOOTING

### 5–9. General

Troubleshooting of the radio set is based upon the operational check contained in the organizational quarterly preventive maintenance checks and services chart. To troubleshoot the radio set, perform functions 17 and 18 in the organizational quarterly preventive maintenance checks and services chart (para. 5–8). When an abnormal condition or result is observed, note the item number in the organizational quarterly preventive maintenance checks and services chart and turn to the corresponding item number in the troubleshooting chart (para. 5–10). Perform the checks and corrective measures indicated in the troubleshooting chart. If the corrective measures indicated do not result in correction of the trouble, higher level maintenance is required. Paragraphs 5–11 through 5–14 contain additional information and step-by-step instructions for performing tube tests, continuity checks, and isolation of malfunctions.

## 5-10. Troubleshooting Chart

| Item No. | Trouble symptom | Probable trouble | Checks and corrective measures |
|---|---|---|---|
| 17 | No signal audible at headset during AM operations. | *a.* Weak signal | *a.* Increase VOL and/or RF GAIN. |
| | | *b.* Loose cable connection | *b.* Check and secure all cable connections (para. 2-5). |
| | | *c.* Dead battery | *c.* Replace battery in use with fully charged spare battery (para. 2-3*c*). |
| | | *d.* Defective headset | *d.* Replace headset. |
| | Weak or intermittent signal at headset during AM operation. | *a.* Weak signal | *a.* Increase VOL and/or RF GAIN. |
| | | *b.* Loose cable connection | *b.* Check and secure all cable connections (para. 2-5). |
| | | *c.* Weak battery | *c.* Replace battery in use with fully charged spare battery (para. 2-3*c*). |
| | | *d.* Defective headset | *d.* Replace headset. |
| | No signal audible at headset during CW operation. | BFO PITCH control requires adjustment. | Adjust BFO PITCH control. |
| 18 | ANT. TUNING INDICATOR does not light. | *a.* Loose cable connection | *a.* Check and secure all cable connections (para. 2-5). |
| | | *b.* Defective ANT. TUNING INDICATOR lamp. | *b.* Replace ANT. TUNING INDICATOR lamp (para. 4-7). |
| | | *c.* Defective battery | *c.* Replace battery in use with fully charged spare battery (para. 2-3*c*). |
| | | *d.* Defective tube V201 or V202 | *d.* Test tubes by tube substitution method (para. 5-11*b*). |
| | | *e.* Defective key | *e.* Replace key. |
| | | *f.* Wrong antenna in use | *f.* Replace antenna in use with correct antenna (para. 2-5). |
| | No beat signal heard at headset when transmitter is keyed. | Defective headset | Replace headset. |

## 5-11. Tube Testing Techniques

The locations of tubes used in Radio Set AN/TRC-77(*) are illustrated in figure 5-1. To reach the tubes, release the toggle clamp on each side of the receiver-transmitter and lift the chassis out of the case. During normal preventive maintenance procedures, check the tubes with Test Set, Electron Tube TY-7/U as directed in *a* below. When a malfunction occurs, use the tube substitution method as directed in *b* below.

***Warning:*** **To avoid serious injury or death, remove all power from the receiver-transmitter before removing a tube for testing.**

***Caution:*** **Do not rock or rotate a tube when removing it from a socket; pull it straight out with a tube puller.**

*a. Use of Test Set, Electron Tube TV-7/U.* Remove and test one tube at a time. Discard a tube only if its defect is obvious or if the TV-7/U shows it to be defective. Do not discard a tube that tests at or near its minimum test limit on the TV-7/U. Put back the original tube, or insert a new one if required, before testing the next one. Detailed instructions for operation of the TV-7/U are contained in TM 11-6625-274-12.

*b. Tube Substitution Method.* Replace tube V201 (3B4WA) with a new tube. If the equipment remains inoperative, remove the new tube and replace the original tube. Repeat this procedure with tube V202 (2E24).

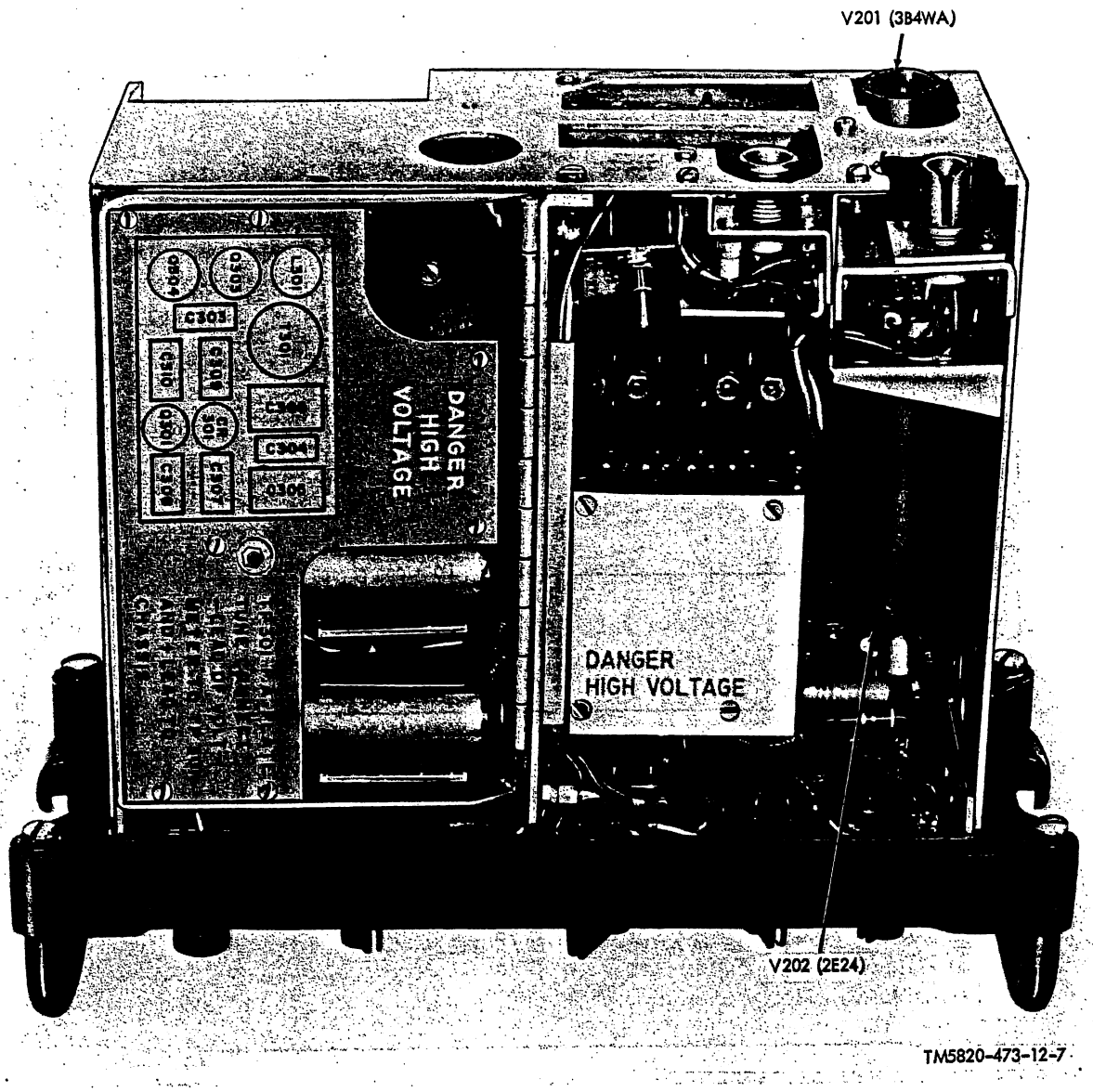


*Figure 5–1. Radio set tube locations.*

## 5–12. Repair and Replacement of Connectors and Cable Assembly Components

*a. Components.* The following components may be repaired or replaced at the organizational maintenance level:

(1) The power jack on the bottom of the receiver-transmitter case.

(2) The connector and alligator clips on the auxiliary power cable.

(3) The connectors and terminals on the keyer adapter cable.

(4) The connector and terminals on the cable in the battery.

*b. Continuity Checks.* To isolate defective cable components, perform continuity checks by the use of Multimeter AN/URM–105 and the cable wiring diagrams shown in figure 5–2. Detailed operating instructions for the AN/URM–105 are contained in TM 11–6625–203–12.

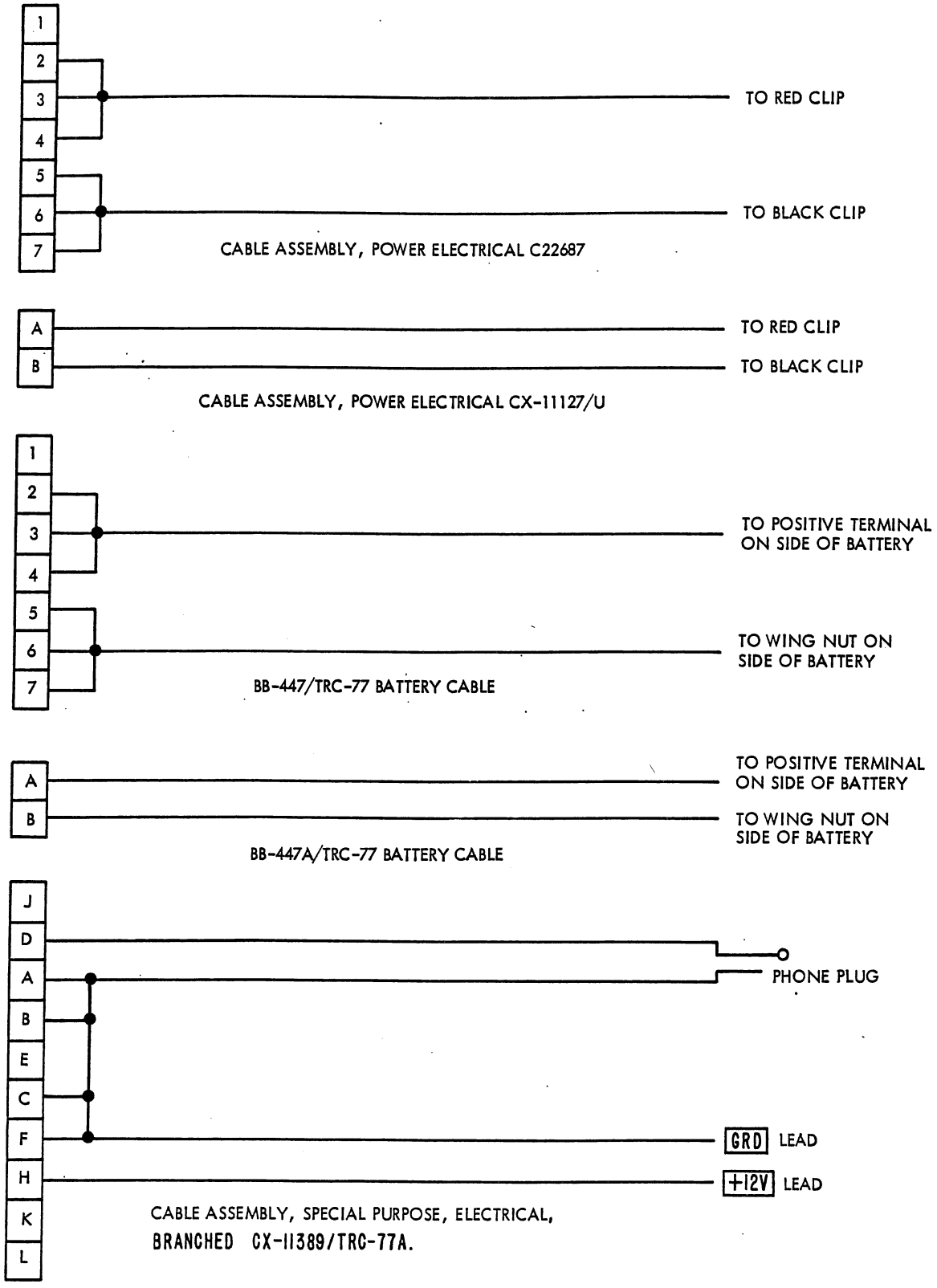


*Figure 5-2. Cable wiring diagrams.*

## 5-13. Repair or Replacement of Knobs

Tighten knobs by turning the mounting screws clockwise. Replace any damaged knobs by loosening the screws at the center of the knobs and removing them. Place new knobs on the shafts and tighten the screws.

## 5-14. Replacement of Key

The key should be replaced when any of the following conditions exist:

*a.* The electrical contacts are badly worn or pitted.

*b.* Performance of the key adjustment procedure (para. 2-3*b*) fails to restore the key to satisfactory operating condition.

*c.* Any key components are damaged or broken.

# CHAPTER 6

# AUXILIARY EQUIPMENT

## Section I. AC BATTERY CHARGER PP-3251(*)/TRC-77

### 6-1. Purpose

Although operation of Radio Set AN/TRC-77(*) without an ac battery charger is possible, periodic recharge of the radio set batteries is necessary. AC Battery Charger PP-3251(*)/TRC-77 (fig. 6-1) is used to recharge the radio set batteries when an ac power source is available.

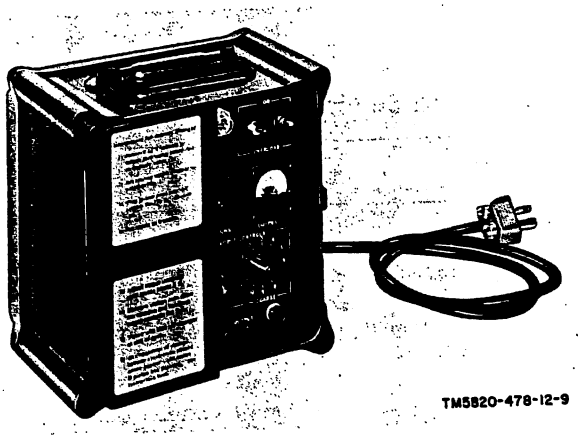


*Figure 6-1. Ac battery charger.*

### 6-2. Description

*a. Physical Description.* The ac battery charger is a self-contained portable unit 8¾ inches high, 8¾ inches wide, and 6 inches deep. It is equipped with a power cable. The ac battery charger with cable is 23.8 pounds. The front panel controls are protected by a hinged panel which is secured at the side of the case by a toggle clamp. A carrying handle is welded on top of the case.

*b. Electrical Characteristics.* The ac battery charger operates on any ac source from 70 to 270 volts, at any frequency between 40 and 400 cycles per second. It is designed to supply an output of 12 volts dc at a current of 5 amperes. It has an integral timer which may be set for up to 4 hours of continuous operation.

*c. Differences in Models.* AC Battery Charger PP-3251/TRC-77 has a seven-pin output connector on the front panel designed to accommodate the cable from Battery Assembly BB-447/TRC-77. The output connector on AC Battery Charger PP-3251A/TRC-77 has two pins and is designed to accommodate the cable from Battery Assembly BB-447A/TRC-77.

### 6-3. Installation

Install the ac battery charger as follows:

***Caution:* To avoid damage to the equipment, do not connect the ac battery charger to the power source until directed to do so.**

*a.* Place the ac battery charger in a location adjacent to the ac power source.

*b.* Place the battery to be charged next to the ac battery charger and connect the battery cable to the OUTPUT jack (fig. 6-1) at the top of the front panel.

*c.* Set the OVERLOAD circuit breakers to ON.

## 6-4. Operation

*a. Controls, Indicators, and Connectors.*

| Control, indicator, or connector | Function |
|---|---|
| OUTPUT connector | Connects battery charger output to battery. |
| Circuit breakers | Protect battery charger from overload. |
| TIMER-HOURS switch | Sets timer for automatic charger operation. |
| OUTPUT meter | Monitors battery charging current. |
| OUTPUT CONTROLS: | |
| COARSE switch | Provides coarse adjustment of output current. |
| FINE switch | Provides fine adjustment of output current. |
| OUTPUT terminals | Provide auxiliary output access. |
| AC INPUT jack (on rear of ac battery charger). | Power input connector. |
| FUSE (8 AMP) (on rear of ac battery charger). | Provides overload protection. |

*b. Procedures.* Operating procedures for the ac battery charger are placarded on the inside of the front panel hinged cover. The battery should be fully charged in 2 hours.

## 6-5. Operator's Maintenance

The maintenance duties assigned to the operator of AC Battery Charger PP-3251(*)/TRC-77 are listed below, together with references to the paragraphs covering the specific maintenance functions. The duties assigned do not require any tools or test equipment.

*a. Operator's Daily Preventive Maintenance Checks and Services* (para. 6-6).

*b. Cleaning* (para. 6-7).

*c. Troubleshooting* (para. 6-8).

## 6-6. Operator's Daily Preventive Maintenance Checks and Services Chart

| Sequence No. | Item to be inspected | Procedure | References |
|---|---|---|---|
| 1 | Exterior surfaces | Clean the ac battery charger case and front panel | Para. 6-7*a*. |
| 2 | Power cable | Check the power cable for cracked or frayed insulation. Check for dirt, corrosion, or bent connectors. | Para. 6-7*c*. |
| 3 | Power connector | Check charger power connector for dirt, corrosion, or bent pins | Para. 6-7*c*. |
| 4 | OUTPUT jack | Check OUTPUT jack on charger front panel for dirt, corrosion, or bent pins. | Para. 6-7*c*. |
| 5 | OUTPUT meter | Check OUTPUT meter for broken or cracked glass and bent pointer | Fig. 6-1. |
| 6 | Installation | Check to see that the charger is correctly installed | Para. 6-3. |
| 7 | Knobs and switches | While making the operating checks (item 8), observe that the mechanical action of each knob and switch is smooth and free of internal or external binding. | |
| 8 | Operation | Perform the operating procedure placarded on the inside of the hinged front cover. | Fig. 6-1. |

## 6-7. Cleaning

Inspect the exterior surfaces of the ac battery charger. They should be free of dust, dirt, grease, and fungus.

*a.* Remove dust and loose dirt with a clean soft cloth.

***Warning:* Prolonged breathing of cleaning compound is dangerous; make sure that adequate ventilation is provided. Cleaning compound is flammable; do not use near a flame. Avoid contact with the skin; wash off any that spills on your hands.**

*b.* Remove grease, fungus, and ground-in dirt from the case; use a cloth dampened (not wet) with Cleaning Compound (Federal Stock No. 7930-395-9542).

*c.* Remove dust or dirt from plugs and jacks with a brush.

***Caution:* Do not press on the meter face (glass) when cleaning; the meter may become damaged.**

*d.* Clean the front panel, meter, and knobs; use a clean soft cloth. If dirt is difficult to remove, dampen the cloth with water; mild soap may be used for more effective cleaning.

## 6–8. Troubleshooting

The following troubleshooting information is intended for use with item 8 of the operator's daily preventive maintenance checks and services chart (para. 6–6).

*a. Overloads.* OVERLOAD circuit breakers will trip under the following conditions:

(1) Failure to set the COARSE switch to position 1 when connecting the charger.
(2) Turning the charger on when the battery is not connected.
(3) Attempting to charge a battery which has one or more dry cells.

*b. No Indication on OUTPUT Meter.* Failure of the OUTPUT meter to give any current indication could be caused by any one of the following conditions:

(1) Loose power connection at the rear of the ac battery charger.
(2) One or both of the front panel circuit breakers are in the OVERLOAD position.
(3) The TIMER-HOURS switch is in the OFF position.
(4) The fuse at the rear of the ac battery charger is defective.

## 6–9. Organizational Maintenance

Maintenance duties assigned to the organizational repairman are listed below together with references to the paragraphs covering the specific maintenance functions. The only equipment required for organizational maintenance of the ac battery charger is Multimeter AN/URM–105. Detailed instructions on the operation of the AN/URM–105 are contained in TM 11–6625–203–12.

*a.* Organizational quarterly preventive maintenance checks and services (para. 6–10).
*b.* Tests (para. 6–11).
*c.* Repair (para. 6–12).

## 6–10. Organizational Quarterly Preventive Maintenance Checks and Services Chart

*Note.* Before performing organizational quarterly preventive maintenance checks and services, the operator's daily preventive maintenance checks and services should be completed.

| Sequence No. | Item to be inspected | Procedure |
|---|---|---|
| 1 | Interior surfaces. | Remove the rear cover from the ac battery charger. Inspect the interior of the ac battery charger for loose or broken connections and defective components. |

## 6–11. Tests

*a. Charger Output Check.* While performing the operation portion of the operator's daily preventive maintenance checks and services chart (item 8, para. 6–6), use Multimeter AN/URM–105 to measure the ac battery charger output at the front panel OUTPUT terminals. The output voltage should be 12 volts dc.

*b. Continuity Check.* When a malfunction indicates a possible defective power cord, use Multimeter AN/URM–105 to check continuity in the power cord. One hot terminal on the line plug is connected to pin A on the connector on the opposite end of the power cord. The other hot terminal is connected to pin B on the same connector. The ground pin on the line plug is connected to pin C.

## 6–12. Repair

Organizational repair on the ac battery charger is limited to the replacement of the line plug on the power cord.

# Section II. DC BATTERY CHARGER PP–3252(*)/TRC–77

## 6–13. Purpose

DC Battery Charger PP–3252(*)/TRC–77 (fig. 6–2) is used to charge radio set batteries when no ac power source is available.

## 6–14. Description

*a. Physical Description.* The dc battery charger consists primarily of a 1-ohm, current-limiting series resistor mounted in a case 2⅞



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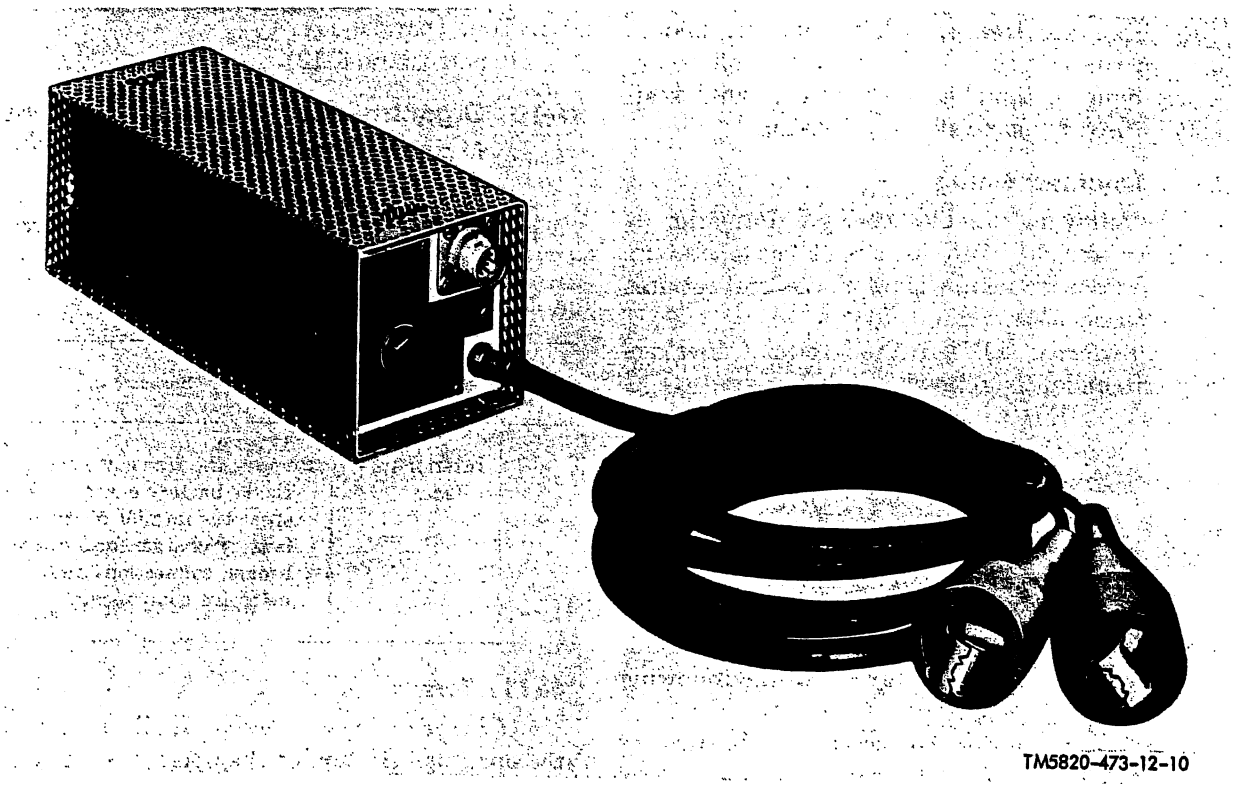


*Figure 6-2. Dc battery charger.*

inches high, 2⅞ inches wide, and 8½ inches long. A cable assembly is provided to connect the dc battery charger to the dc power source. The weight of the charger with the cable assembly is 1.9 pounds.

*b. Electrical Characteristics.* The dc battery charger obtains its input from a 24- to 28-volt vehicle electrical system. It is normally connected across the terminals of the vehicle battery. The dc battery charger supplies 12 volts dc at a current of 10 amperes to the battery being charged.

*c. Differences in Models.* DC Battery Charger PP-3252/TRC-77 has a seven-pin output connector on the front panel which accommodates the cable from Battery Assembly BB-447/TRC-77. The output connector on DC Battery Charger PP-3252A/TRC-77 has two pins and accommodates the cable from Battery Assembly BB-447A/TRC-77.

## 6-15. Installation

Install the dc battery charger as follows:

*a.* Connect the red clip lead on the dc battery charger cable to the positive side of the vehicle battery.

*b.* Connect the black clip lead on the dc battery charger cable to the negative side of the vehicle battery.

*c.* Place the battery to be charged next to the dc battery charger.

## 6-16. Operation

To charge the battery with the dc battery charger, connect the battery cable to the output connector on the dc battery charger front panel. The battery should be fully charged in 2 hours.

## 6-17. Operator's Maintenance

The maintenance duties assigned to the operator of DC Battery Charger PP-3252(*)/TRC-77 are listed below, together with references to the paragraphs covering specific maintenance functions. The duties assigned do not require any special tools or test equipment.

*a.* Operator's Daily Preventive Maintenance Checks and Services (para. 6-18).

*b.* Cleaning (para. 6-19).

## 6-18. Operator's Daily Preventive Maintenance Checks and Services Chart

| Sequence No. | Item | Procedure | References |
|---|---|---|---|
| 1 | Exterior surfaces | Clean the dc battery charger case and front panel | Para. 6-19. |
| 2 | Power cable | Check the power cable for cracked or frayed insulation. Clean dirt or corrosion from cable clips, | Para. 6-19c. |
| 3 | OUTPUT jack | Check OUTPUT jack on charger front panel for dirt, corrosion, or bent pins. | Para. 6-19c. |
| 4 | Installation | Check to see that the charger is correctly installed | Para. 6-15. |
| 5 | Operation | Connect the battery cable to the OUTPUT jack on the dc battery charger front panel. Check to see that the electrolyte level rises in the battery cells as the battery charges. | Para. 6-16. |

## 6-19. Cleaning

Inspect the exterior surfaces of the dc battery charger. They should be free of dust, dirt, grease, and fungus.

*a.* Remove dust and loose dirt with a clean soft cloth.

***Warning:* Prolonged breathing of cleaning compound is dangerous; make sure that adequate ventilation is provided. Cleaning compound is flammable; do not use near a flame. Avoid contact with the skin; wash off any that spills on your hands.**

*b.* Remove grease, fungus, and ground-in dirt from the case; use a cloth dampened (not wet) with Cleaning Compound (Federal stock No. 7930-395-9542).

*c.* Remove dust or dirt from clips and jacks with a brush.

## 6-20. Organizational Maintenance

Maintenance duties assigned to the organizational repairman are listed below together with references to the paragraphs covering specific maintenance functions. The only equipment required for organizational maintenance of the dc battery charger is Multimeter AN/URM-105. Detailed instructions on the operation of the multimeter are contained in TM 11-6625-203-12.

*a.* Organizational quarterly preventive maintenance checks and services (para. 6-21).

*b.* Continuity checks (para. 6-22).

*c.* Repair (para. 6-23).

## 6-21. Organizational Quarterly Preventive Maintenance Checks and Services Chart

*Note.* Before performing organizational quarterly preventive maintenance checks and services, the operator's daily preventive maintenance checks and services should be completed.

| Sequence No. | Item | Procedure | References |
|---|---|---|---|
| 1 | Interior surface | Remove the cover from the dc battery charger and inspect the interior of the charger for loose or broken connections and other defects. | None. |

## 6-22. Continuity Checks

When a malfunction is suspected in the dc battery charger, perform the following continuity checks:

*a.* Use the AN/URM-105 to check continuity between the black clip lead and the dc battery charger case.

*b.* Use the AN/URM-105 to measure the resistance between the red clip lead and pin 2 of the OUTPUT jack on the dc battery charger front panel. The resistance should be approximately 1 ohm.

## 6-23. Repair

Organizational repair on the dc battery charger is limited to the replacement of the clips on the input power cord.

# CHAPTER 7

# SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

## Section I. SHIPMENT AND LIMITED STORAGE

### 7-1. Disassembly of Equipment

Disassemble Radio Set AN/TRC-77(*) as follows:

*a.* Disconnect the antenna in use and untie the support cord and weight. Rewind the antenna and the support cords on their bobbins.

*b.* Disconnect the counterpoise and rewind it on its bobbin.

*c.* Disconnect the headset and the key from the receiver-transmitter front panel.

*d.* Separate the receiver-transmitter from the battery by releasing the toggle clamps on each side of the battery case.

*e.* Stow the antenna system components, auxiliary power cable, keyer adapter cable, key, and headset in the accessory bag.

### 7-2. Protecting Transported Equipment

*a.* Equipment that is to be removed from service for periods exceeding approximately 2 weeks, or equipment that is to be shipped for use by other personnel or activities, is normally repackaged by organizational personnel. Refer the equipment to organizational personnel for repackaging.

*b.* If the radio set is to be transported over short distances under control of the using unit for immediate re-use:

(1) Place the receiver-transmitter, batteries, and accessory bag upright in a corrugated or wooden box.

(2) Use rags or crumpled paper for padding to separate components from each other and from the sides of the box.

### 7-3. Repackaging for Shipment or Limited Storage

The following procedures are intended for use by organizational personnel. Whenever possible, original packaging materials should be used. Refer to figure 2-1 for typical packaging of the radio set.

*a. Material Requirements.* The following materials are required for packaging Radio Set AN/TRC-77(*). For stock numbers of materials, consult SB 38-100.

| Material | Quantity |
|---|---|
| Waterproof paper | 6 sq ft |
| Waterproof tape | 20 ft |
| Cotton twine | 50 ft |
| Corrugated cardboard | 16 sq ft |
| Adhesive tape | 12 ft |
| Filler material | 6 lb |

*b. Packaging.* The components of Radio Set AN/TRC-77(*) are to be packaged as given below.

(1) *Accessory bag.* Place the accessory bag within a wrap of corrugated cardboard. Secure the wrap with gummed tape.

(2) *Receiver-transmitter.* Cushion the receiver-transmitter front panel with a pad of filler material. Secure the filler material with gummed tape.

(3) *Technical manuals.* Wrap the technical manuals in waterproof paper and seal with waterproof tape.

*c. Packing.*

(1) Place the receiver-transmitter, batteries, and accessory bag in a fiberboard box or carton. Separate the individual components with corrugated cardboard as required. Use filler material to cushion each item as required.

(2) Place the technical manual package on top of the radio set components, cover with a corrugated cardboard spacer, and seal the box or carton with gummed tape.

(3) Pack the radio set carton in a nailed wooden crate either separately or together with other radio sets as illustrated in figure 2-1.

## Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

### 7-4. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 7-5 will be used to prevent further use of the equipment.

### 7-5. Methods of Destruction

Use any of the following methods to destroy the equipment.

*a. Smash.* Smash the controls, tubes, coils, batteries, headset, key, switches, capacitors, and transformer; use sledges, axes, handaxes, pickaxes, hammers, or crowbars.

*b. Cut.* Cut the antennas, counterpoise, auxiliary power cable, and keyer adapter cable; use axes, handaxes, or machetes.

***Warning:* Be extremely careful when using explosives and incendiary grenades. These items should not be used unless extreme urgency demands their use.**

*c. Burn.* Burn cords and technical manuals; use gasoline, kerosene, oil, flamethrowers, or incendiary grenades.

*d. Bend.* Bend panel and case.

*e. Explode.* If explosives are necessary, use firearms, grenades, or TNT.

*f. Dispose.* Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

# APPENDIX I

# REFERENCES

Following is a list of applicable references available to the operator and organizational repairman of Radio Set AN/TRC-77(*).

| | |
|---|---|
| DA Pam 310-4 | Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 4, 6, 7, 8, and 9), Supply Catalogs (type CL), Supply Bulletins, Lubrications Orders, and Modification Work Orders. |
| SB 38-100 | Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used By The Army. |
| TM 11-5965-231-15P | Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart, Headset, Electrical H-113/U. |
| TM 11-5965-260-15P | Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists, Headset, Electrical H-140A/U. |
| TM 11-6625-203-12 | Operator and Organizational Maintenance: Multimeter AN/URM-105, Including Multimeter ME-77/U. |
| TM 11-6625-274-12 | Operator's and Organizational Maintenance Manual: Test Sets, Electron Tube TV-7/U, TV-7A/U, TV-7B/U, and TV-7D/U. |
| TM 38-750 | Army Equipment Record Procedures. |

# APPENDIX II

# BASIC ISSUE ITEMS LIST

## Section I. INTRODUCTION

### A2-1. General

This appendix lists items supplied for initial operation and for running spares. The list includes tools, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

### A2-2. Columns

Columns are as follows:

*a. Federal Stock Number.* This column lists the 11-digit Federal stock number.

*b. Designation by Model.* Not used.

*c. Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

*d. Unit of issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

*e. Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.

*f. Quantity Authorized.* Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spare Items" the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

*g. Illustration.* The "Item No." column lists the reference symbols used for identification of the items in the illustration or text of the manual.

SECTION II. OPERATOR'S FUNCTIONAL PARTS LIST

| FEDERAL STOCK NUMBER | DESIGNATION BY MODEL | DESCRIPTION | UNIT OF ISSUE | EXP | QTY AUTH | ILLUSTRATION | |
|---|---|---|---|---|---|---|---|
| | | | | | | FIGURE NO. | ITEM NO. |
| | | RADIO SET AN/TRC-77 | | | | | |
| 5820-858-5717 | | RADIO SET AN/TRC-77: transmitter data; 10 w max power output 3 to 8 mc; 6 channels; receiver data; 3 to 8 mc; 6 channels; 12U requirements; Sylvania Electronics p/n 07397 | | NX | | | |
| | | ITEMS COMPRISING AN OPERABLE EQUIPMENT | | | | | |
| ORD THRU AGC | | TECHNICAL MANUAL 11-5820-473-12 | | | 2 | | |
| 5820-858-5719 | | ANTENNA AT-1098/TRC-77: 3 to 8 mc freq range; 25 ft; 38 ft; 50 ft of antenna wire 50 ft; 100 ft of 1/16 in. dia, dacron rope; one lead sinker; Electronic Defense Laboratories of Sylvania, SC-DL-512662 | | NX | 1 | | |
| 5820-858-5720 | | BAG, COTTON DUCK CW-618/TRC-77: 17.55 oz per sq. yd. olive drab color; one carrying handle; 8 1/4 in. lg x 4 1/2 in. w x 8 1/2 in. h. Signal Corp Tech. Requirements SCL-4285A | | NX | 1 | | |
| 6140-889-0643 | | BATTERY ASSEMBLY BB-447/TRC-77: 10 (connected in series) storage type Nr. BB-418/U; o/a dem. 9 1/2 in. lg x 4 in. w h; Signal Corp Tech. Requirements SCL-4285-A | | NX | 2 | | |
| 5995-966-7411 | | CABLE ASSEMBLY, POWER ELECTRICAL: 2 cond; 16 AWG; with connector on each end; 8 ft lg o/a; Sylvania p/n 22928 (Not installed) | | | 1 | | |
| 6140-889-0644 | | COVER, BATTERY BOX CW-619/TRC-77: alum. od enamel finish; o/a dem. 9 1/2 in. lg x 4 in. w x 1 in h; Electronics Defense Laboratories | | NX | 1 | | |
| 5965-504-6370 | | HEADSET, ELECTRICAL H-113/U: 600 ohms; Sig dwg SM-D-105-212 | | NX | 1 | | |
| 5805-171-3370 | | KEY TELEGRAPH J-45: manual actuation; o/a dem. 5 1/2 in. lg x 4 3/8 in. w x 6 in. h. Sig dwg SC-DL-99893 | | NX | 1 | | |
| 5820-858-5718 | | RECEIVER-TRANSMITTER RADIO-RT-654/TRC-77: Transmitter data 10 w. max power output; 6 channels; receiver data 3 to 8 mc; 1 band; 6 channel oper; 9 1/2 in. x 4 in. Electronics Defense Laboratories, Sylvania-Electronics System, dwg Nr. 22793 | | NX | 1 | | |



AMSEL-MR Form 1 Dec 64 6010 (Supersedes SELMS-6 (TF))

Army-Ft Monmouth, NJ-MON 5727-64

| FEDERAL STOCK NUMBER | DESIGNATION BY MODEL | DESCRIPTION | UNIT OF ISSUE | EXP | QTY AUTH | ILLUSTRATION | |
|---|---|---|---|---|---|---|---|
| | | | | | | FIGURE NO. | ITEM NO. |
| | | AN/TRC-77, 77A (continued) | | | | | |
| | | RUNNING SPARE ITEMS | | | | | |
| | | NO PARTS AUTHORIZED FOR STOCKAGE FOR OPERATOR. | | | | | |
| | | Note: To be replaced by organizational repairman. | | | | | |
| 5960-188-6586 | | ELECTRON TUBE: MIL type 2E24 (Not mounted) | | | 1 | | V302 |
| 5960-752-5996 | | ELECTRON TUBE: MIL type 3B4WA (Not mounted) | | | 1 | | V201 |
| 6240-228-7130 | | LAMP, INCANDESCENT: single conductor; 0.250 in. dia x 5/8 in. lg; GE p/n 331 (Not mounted) | | | 1 | | |
| | | RADIO SET AN/TRC-77A | | | | | |
| 5820-985-8969 | | RADIO SET AN/TRC-77A: Transmitter data, 10 watt maximum power output; 3 to 8 mc 6 channels; receiver data, 3 to 8 mcs 6 channels, operate power requirements 12 volts. Arven Industries Inc part 886 | | NX | | | |
| | | ITEMS COMPRISING AN OPERABLE EQUIPMENT | | | | | |
| ORD THRU AGC | | TECHNICAL MANUAL 11-5820-473-12 | | | 2 | | |
| 5820-858-5719 | | ANTENNA AT-1098/TRC-77: 3 to 8 mc. freq. range; 25 ft, 38 ft, 50 ft ant. wire 50 ft, 100 ft of 1/16 in. dia dacron rope, one lead sinker Arven Industries Inc. SC-DL-512662 | | NX | 1 | | |
| 5820-858-5720 | | BAG, COTTON DUCK CW-618/TRC-77: 17.55 oz. per sq. yd. olive drad color; one carrying handle; 8 1/4 in. lg x 4 1/2 in. w x 8 1/2 in. h; Signal Corp Technical Requirements SCL-4285A | | NX | 1 | | |
| 6140-985-8274 | | BATTERY CASE ASSEMBLY BB-447A/TRC-77A: 10 (connected in series); storage type #BB418/U, o/a dim. 9 1/2 in. lg x 4 in. h; SM-D-512625 Arven Industries Inc p/n BB447 | | NX | 2 | | |
| 5995-900-5597 | | CABLE ASSEMBLY, POWER ELECTRICAL, CX-11127/U: 8 ft. lg cable data: 2 cond, type ident. MIL-C-3432 type CO-02MOF(2/16)0335; terminal fitting on 1st end, 1 ea Bendix connector, play type PT73A-2S-F(N); 1 ea clamp cable MS3057-3A terminal fitting on 2nd end; 2 ea term lug MS20659-2 Arven Industries Inc p/n 512660 (Not installed) | | NX | 1 | | |

| FEDERAL STOCK NUMBER | DESIGNATION BY MODEL | DESCRIPTION | UNIT OF ISSUE | EXP | QTY AUTH | ILLUSTRATION | |
|---|---|---|---|---|---|---|---|
| | | | | | | FIGURE NO. | ITEM NO. |
| | | AN/TRC-77, 77A (continued) | | | | | |
| 6140-889-0644 | | COVER, BATTERY BOX CW-619(*)/TRC77: alum. od enamel finish, 9 1/2 in. lg x 4 in. w x 1 in. h SC-DL-512615 Arven Industries Inc. | | NX | 1 | | |
| 5965-892-1010 | | HEADSET H-140A/U: 500 ohm 1 mp; SC-DL-436200 | | NX | 1 | | |
| 5805-171-3370 | | KEY TELEGRAPH J-45: Signal Key J-45; manual actuation; 5 1/2 in. lg x 4 3/8 in. w x 6 in. h; Signal Corp dwg SC-DL-99893 | | NX | 1 | | |
| 5820-985-8970 | | RECEIVER-TRANSMITTER RADIO-RT-654A/TRC-77: transmitter data; 10 w. max. power output; 6 channels; receiver data 3 to 8 mc; 1 band; 6 channel oper. pwr oper; 9 1/2 in. x 9 in. x 4 in. o/a Electronic Defense Laboratories; p/n SC-DL-512400 Arven Industries Inc. p/n 512400 | | NX | 1 | | |
| | | RUNNING SPARE ITEMS | | | | | |
| | | NO PARTS AUTHORIZED FOR STOCKAGE FOR OPERATOR. | | | | | |
| | | Note: To be replaced by organizational repairman. | | | | | |
| 5960-188-6586 | | ELECTRON TUBE: MIL type 2E24 (Mounted in equip) | | | 1 | | V302 |
| 5960-752-5996 | | ELECTRON TUBE: MIL type 3B4WA (Mounted in equip) | | | 1 | | V201 |
| 6240-228-7130 | | LAMP, INCANDESCENT: single conductor midget flange base; o/a dem 0.250 dia. x 5/8 in. lg. General Electric Co p/n 331 (Installed in equip) | | | 1 | | |



AMSEL-MR Form 6010 (Supersedes SELMS-6 (TF))
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# APPENDIX III

# MAINTENANCE ALLOCATION

## Section I. INTRODUCTION

### A3-1. General

*a.* This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance category.

*b.* Columns in the maintenance allocation chart are as follows:

(1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and subassemblies which are part of an assembly are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) are listed in disassembly order or alphabetical order.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the categories.

(*a*) *Service.* To clean, to preserve, and to replenish lubricants.

(*b*) *Adjust.* To regulate periodically to prevent malfunction.

(*c*) *Inspect.* To verify serviceability and detect incipient electrical or mechanical failure by scrutiny.

(*d*) To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

(*e*) *Replace.* To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.

(*f*) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

(*g*) *Align.* To adjust two or more components of an electrical system so that their functions are properly synchronized.

(*h*) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(*i*) *Overhaul.* To restore an item to *completely serviceable* condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

(*j*) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing toler-

ances and/or specifications and subsequent reassembly of the item.

(3) *Operator, organization, direct support, general support, and depot.* The symbol X indicates the categories responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Categories higher than those marked by X are authorized to perform the indicated operation.

(4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

(5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding column.

*c.* Columns in the allocation of tools for maintenance functions are as follows:

(1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

(2) *Operator, organization, direct support, general support, and depot.* The dagger (†) symbol indicates the categories normally allocated the facility.

(3) *Tool code.* This column lists the tool code assigned.

## A3-2. Maintenance by Using Organizations

When this equipment is used by signal services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including general support are authorized to the organization operating this equipment.

SECTION II. MAINTENANCE ALLOCATION CHART

| PART OR COMPONENT | MAINTENANCE FUNCTION | ECHELON O/C | O | DS | GS | D | TOOLS REQUIRED | REMARKS |
|---|---|---|---|---|---|---|---|---|
| RADIO SET AN/TRC-77, AN/TRC-77A | service | X | | | | | | External |
| | | | X | | | | 16 | Internal, except RCVR-XMTR |
| | | | | X | | | 15 | RCVR-XMTR |
| | inspect | X | | | | | | External |
| | | | X | | | | 16 | Internal, except RCVR-XMTR |
| | | | | X | | | 15 | RCVR-XMTR |
| | test | | X | | | | 5 | Continuity |
| | | | | X | | | 3,7,9,10,11 | All tests except receiver printed circuits |
| | | | | | X | | 1,2,4,6,7,8,9,10,12, 13,14 | All tests |
| | repair | | X | | | | 16 | Replace tubes, knobs, plugs |
| | | | | X | | | 15 | All repairs except receiver printed ckts |
| | | | | | X | | 15 | All repairs |
| | align | | | | X | | 15 | |
| | calibrate | | | | X | | 15 | |
| | overhaul | | | | X | | 15 | |
| ANTENNA, AT-1098/TRC-77 | service | X | | | | | | |
| | inspect | X | | | | | | |
| | test | | | X | | | 5 | |
| | repair | | | X | | | 15 | |
| BATTERY ASSEMBLY BB-447A/7RC( ) | service | X | | | | | | |
| | inspect | X | | | | | | |
| | test | | | X | | | 7 | |
| | repair | | | X | | | 15 | |
| | overhaul | | | | X | | 15 | |
| HEADSET ELECTRICAL H-113/U (PLAIN MODEL ONLY) | service | | X | | | | | |
| | repair | | | X | | | | See TM 11-5965-231-15P for maintenance allocation |
| HEADSET ELECTRICAL H-140A/GR | service | X | | | | | | |
| | inspect | X | | | | | | |
| | repair | | | X | | | 15 | See TM 11-5965-260-15P for maintenance allocation |
| KEY, TELEGRAPH J-45 | service | X | | | | | | |
| | inspect | X | | | | | | |
| | replace | | X | | | | | |
| RECEIVER-TRANSMITTER, RADIO RT-654/TRC-77; RT-654A/TRC-77 | service | X | | | | | | External |
| | | | | X | | | 15 | Internal |
| | inspect | X | | | | | | External |
| | | | | X | | | 15 | Internal |
| | test | | X | | | | 5,11 | Tubes, continuity |
| | | | | X | | | 3,7,9,10,11 | All tests except receiver printed circuits |
| | | | | | X | | 1,2,4,6,7,8,9,10,12, 13,14 | All tests |





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| PART OR COMPONENT | MAINTENANCE FUNCTION | ECHELON O/C | O | DS | GS | D | TOOLS REQUIRED | REMARKS |
|---|---|---|---|---|---|---|---|---|
| AN/TRC-77, 77A (continued) | | | | | | | | |
| | repair | | X | | | | 16 | Replace tubes, knobs |
| | | | | X | | | 15 | All repairs except receiver printed circuits |
| | | | | | X | | 15 | All repairs |
| | align | | | | X | | 15 | |
| | calibrate | | | | X | | 15 | |
| | overhaul | | | | X | | 15 | |



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SECTION III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

| TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS | MAINTENANCE CATEGORY O/C | O | DS | GS | D | TOOL CODE | REMARKS |
|---|---|---|---|---|---|---|---|
| AN/TRC-77, 77A (continued) | | | | | | | |
| ANALYZER, SPECTRUM, TS-723/U | | | | † | † | 1 | |
| AUDIO OSCILLATOR TS-382/U | | | | † | † | 2 | |
| FREQUENCY METER AN/USM-159 | | | † | | | 3 | |
| FREQUENCY METER AN/URM-79 | | | | † | † | 4 | |
| MULTIMETER AN/URM-105 | | † | | | | 5 | |
| MULTIMETER ME-26/U | | | † | † | † | 6 | |
| MULTIMETER TS-352/U | | | † | † | † | 7 | |
| OSCILLOSCOPE AN/USM-50 | | | | † | † | 8 | |
| POWER SUPPLY PP-1243/U | | | † | † | † | 9 | |
| SIGNAL GENERATOR AN/URM-25 | | | † | † | † | 10 | |
| TEST SET, ELECTRON TUBE, TV-7/U | | † | † | † | | 11 | |
| AUDIO LEVEL METER, TS-585D/U | | | | † | † | 12 | |
| VOLTMETER, METER ME-30/U | | | | † | † | 13 | |
| TEST SET TRANSISTOR TS-1836/U | | | † | † | † | 14 | |
| TOOL KIT, TK-100G | | | † | † | † | 15 | |
| TOOL KIT TK-115/G | | † | | | | 16 | |

# APPENDIX IV

# ORGANIZATIONAL REPAIR PARTS LIST

## Section I. INTRODUCTION

### A4-1. General

*a.* This manual lists the quantities of repair parts authorized for organizational maintenance and constitutes a basis of requisitioning when the major item of equipment is authorized to the organization. These equipments are issued on the basis of allowances prescribed in equipment authorization tables and other documents which are a basis of requisitioning.

*b.* Columns are as follows:

(1) *Federal stock number.* This column lists the 11-digit Federal stock number.

(2) *Designation by model.* Not used.

(3) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

(4) *Unit of issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

(5) *Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.

(6) *Quantity incorporated in unit.* This column lists the quantity of each part found in a given assembly, component, or equipment.

(7) *Organizational.* The quantities indicated in this column are maximum levels of repair parts authorized to be kept on hand by units performing organizational maintenance. (The quantities are based on 100 equipments to be maintained for a 15-day period.

(8) *Illustration.* The "Item No." column lists the reference symbols used for identification of the items in the illustration or text of the manual.

### A4-2. Parts for Maintenance

When this equipment is used by signal service organizations organic to theater headquarters or communication zones to provide theater communications, those repair parts authorized up to and including general support are authorized for stockage by the organization operating this equipment.

### A4-3. Electron Tubes

The consumption rates given for tubes are conservative theoretical estimates and are provided for use only when more complete information, such as data based on operating experience, is not available. These figures are based on levels and requirements for equipment actually in use, not on authorizations or equipment stored in depots.

### A4-4. Additional Repair Parts Authorization

An asterisk (*) indicates that an item is not authorized for stockage but if required, may be requisitioned for immediate use only.

### A4-5. Requisitioning Information

*a.* The allowance factors are based on 100 equipments. In order to determine the number of parts authorized for the specific number of equipments supported, the following formula will be used and carried out to two decimal places:

Specific number of equipments supported

$$\times \frac{\text{allowance factor}}{100} =$$

Number of parts authorized.

*b.* Fractional values obtained from above computation will be rounded to whole numbers as follows:

(1) When the total number of parts authorized is less than one, the quantity authorized will be one.

(2) For all values above one, fractional values below 0.5 will revert to the next lower number, fractional values of 0.5 or larger will advance to the next higher whole number.

*c.* The number of parts authorized, determined after application of *a* and *b* above, represent one prescribed load for a 15-day period. The items and computed quantities thereof must be on hand or on order at all times.

*d.* Major commanders will determine the number of prescribed loads second echelon units and organizations will carry. Unit and organizations authorized additional prescribed loads will utilize the formula explained in *a* above but will multiply the number of equipments supported by the number of authorized prescribed loads before completing the formula. Fractional values will be rounded to whole numbers as described above.

SECTION II. ORGANIZATIONAL FUNCTIONAL PARTS LIST

| FEDERAL STOCK NUMBER | DESIGNATION BY MODEL | DESCRIPTION | UNIT OF ISSUE | EXP | QTY IN UNIT | MAINT ORG ALLOW. | ILLUSTRATION | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | FIGURE NO. | ITEM NO. |
| | | SECTION I<br>RADIO SET AN/TRC-77 | | | | | | |
| 5820-858-5717 | | RADIO SET AN/TRC-77: Transmitter data; 10w max power output, 3 to 8 mc 6 channels, receiver data, 3 to 8 mc, 6 channels, 12v requirements; Sylvania Electronics p/n 07397 | | NX | | | | |
| 5935-855-7644 | | ADAPTER CRYSTAL SOCKET: plastic body; 0.823 in lg ℄; James Milken Mfg p/n K33902B | | | 12 | * | | |
| 5985-871-5709 | | ANTENNA WIRE: 25 ft lg o/a; w/connectors Arvin Ind p/n 512663-3 | | NX | 1 | * | | |
| 5985-871-5710 | | ANTENNA WIRE: 40 ft ℄; with conn; Arvin Ind p/n 512663-2 | | NX | 1 | * | | |
| 5985-869-8856 | | ANTENNA WIRE: 57 ft lg o/a; with connectors; Arvin Ind. p/n 512663-1 | | NX | 1 | * | | |
| 5995-966-7411 | | CABLE ASSEMBLY POWER ELECTRICAL: 2 cond; 16 AWG; with connector on each end; 8 ft lg ℄; Sylvania p/n 22928 | | | 1 | * | | |
| 5985-880-9408 | | COUNTERPOISE WIRE: 50 ft; copper-nylon; Arvin p/n 512664 | | NX | 1 | * | | |
| 5960-752-5996 | | ELECTRON TUBE: MIL type 3B4WA | | | 1 | 2.4 | | V201 |
| 5960-188-6586 | | ELECTRON TUBE: MIL type 2E24 | | | 1 | 1.8 | | V302 |
| 6140-050-8641 | | FILLER, CAP, BATTERY: Signal Corp Dwg SC-C-93840 | | | 1 | * | | |
| 5985-788-5300 | | HALYARD, ANTENNA: 50 ft lg o/a; rope type; Arvin Ind p/n 512669 | | NX | 1 | * | | |
| 5985-069-8966 | | HALYARD, ANTENNA: 100 ft rope type; Arvin Ind. p/n 512669 | | NX | 1 | * | | |
| 5970-985-8924 | | INSULATOR PLATE: Epoxy-glass fiber; 2.250 in lg x .125 in t x w 0.750 in ℄; Arvin Ind inc p/n 512668 | | | 3 | * | | |
| 5355-552-0451 | | KNOB: Alum body, rd bar, 23/32 in od x 15/32 id; MIL 91524-1 | | | 4 | * | | |
| 5355-616-9659 | | KNOB: Alum body; 1-3/16 in lg x 7/8 in w℄; MIL type 91525-1 | | | 4 | * | | |
| 5355-656-1358 | | KNOB: Thruhole type; plain; gripping surface; 1-7/16 in lg x 7/8 in w x 15/32 in thk o/a MS91525-2 | | | 1 | * | | |
| 6240-228-7130 | | LAMP, INCANDESCENT: Single cond; midge flange base; 0.250 in dia x 5/8 in lg; GE p/n 331 | | | 1 | * | | |
| 6210-855-7640 | | LENS, INDICATOR LIGHT: 1/2 in dia plastic, cl, frosted back; Dialco p/n 101-937 | | | 1 | * | | |
| 5960-272-9094 | | SHIELD, ELECTRON TUBE: MIL type TS102U02 | | | 1 | * | | |

| FEDERAL STOCK NUMBER | DESIGNATION BY MODEL | DESCRIPTION | UNIT OF ISSUE | EXP | QTY IN UNIT | MAINT ORG ALLOW. | ILLUSTRATION FIGURE NO. | ILLUSTRATION ITEM NO. |
|---|---|---|---|---|---|---|---|---|
| | | AN/TRC-77 & 77A (continued) | | | | | | |
| 5960-966-7402 | | SHIELD, ELECTRON TUBE: Special o/a dim 1/16 in dia of tube; 1-3/8 in dia x 2-7/16 in h; p/n 22506, Sylvania Electric Co. | | | 1 | * | | |
| 5340-526-3665 | | SNAP HOOK: Spring blade type; right angle; bl; 9/16 in lg x 7/16 in w ℄; North-Judd p/n 5336 | | NX | 2 | * | | |
| 5985-871-5708 | | WEIGHT, ANTENNA: Ellipsoidal shape; 6 oz; MIL type MIL-R-55253(EL) | | | 2 | * | | |
| | | SECTION II<br>RADIO SET AN/TRC-77A | | | | | | |
| 5820-985-8969 | | RADIO SET AN/TRC-77A: Transmitter data, 10 watt maximum power output; 3 to 8 mcs; 6 channels, receiver, 6 channels 3 to 8 mcs; 12 volts requirement; Arvin Ind p/n 886 | | NX | | | | |
| 5935-855-7644 | | ADAPTER CRYSTAL SOCKET: Plastic body; 0.823 in lg o/a; James Milken Mfg p/n K33902B | | | 12 | * | | |
| 5985-871-5709 | | ANTENNA WIRE: 25 ft lg; arrangement of parts; bobbin, tip jack; Arvin p/n 512663-3 | | | 1 | * | | |
| 5985-871-5710 | | ANTENNA WIRE: 40 ft o/a; with conn and jack tips; Arvin Ind Inc p/n SM-B-512663-2 | | | 1 | * | | |
| 5895-869-8856 | | ANTENNA WIRE: 57 ft lg o/a; with connectors; Arvin Ind p/n 512663-1 | | | 1 | * | | |
| 5995-900-5597 | | CABLE ASSEMBLY, POWER ELECTRICAL CX11127/U: 2 cond; 8 ft o/a; term fitting on one end; 1 Bendix Scintilla plug PT-7B8A-8-2S; Arvin Ind p/n 512660 | | | 1 | * | | |
| 5985-880-9408 | | COUNTERPOISE WIRE: 50 ft; copper-nylon; Arvin p/n 512664 | | | 1 | * | | |
| 5960-752-5996 | | ELECTRON TUBE: MIL type 3B4WA | | | 1 | 2.4 | | V201 |
| 5960-188-6586 | | ELECTRON TUBE: MIL type 2E24 | | | 1 | 1.8 | | V302 |
| 5985-788-5300 | | HALYARD, ANTENNA: 50 ft lg o/a; rope type; Arvin Ind p/n 512669 | | | 1 | * | | |
| 5985-069-8966 | | HALYARD ANTENNA: 100 ft rope type; Arvin Ind p/n 512669 | | | 1 | * | | |
| 5970-985-8924 | | INSULATOR PLATE: Epoxy-glass fiber; 2.250 in l x .125 in t x w .750 in o/a; Arvin Ind Inc p/n 512668 | | | 3 | * | | |
| 5355-552-0451 | | KNOB: Alum body, round bar, 23/32 in od x 15/32 in id; MIL MS91524-1 | | | 4 | * | | |
| 5355-616-9659 | | KNOB: Thru hole type, round w/bar face shape; alum body; 1-3/16 in lg x 15/32 in thk; MS91525-1 | | | 4 | * | | |
| 5355-656-1358 | | KNOB: Thru hold type; plain gripping surface, 1-7/16 in lg x 7/8 in w x 15/32 in thk o/a; MS91525-2 | | | 1 | * | | |

| FEDERAL STOCK NUMBER | DESIGNATION BY MODEL | DESCRIPTION | UNIT OF ISSUE | EXP | QTY IN UNIT | MAINT ORG ALLOW. | ILLUSTRATION | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | FIGURE NO. | ITEM NO. |
| | | AN/TRC-77 & 77A (continued) | | | | | | |
| 6240-228-7130 | | LAMP, INCANDESCENT: Single cond; midge flange base; 0.250 in dia x 5/8 in lg; GE p/n 331 | | | 1 | * | | |
| 6210-855-7640 | | LENS INDICATOR LIGHT: 1/2 in dia plastic, cl frosted back; Dialco p/n 101-937 | | | 1 | * | | |
| 5960-686-8085 | | SHIELD TUBE: MIL type MS24233-2 | | | 1 | * | | |
| 5960-902-9039 | | SHIELD TUBE: International Elec p/n T93025H | | | 1 | * | | |
| 5340-526-3665 | | SNAP HOOK: Spring blade type hook; right angle, bl, 9/16 in lg x 7/16 in w; North-Judd Mfg Co. p/n 5336 | | | 2 | * | | |
| 5985-871-5708 | | WEIGHT ANTENNA: Ellipsoidal shape; 6 oz; MIL type MIL-R-55253(EL) | | | 2 | * | | |