SECTION 1

RADIO SET AN/PRC-6

1. General.—a. Radio Set AN/PRC-6 is a miniature, low-power, battery-operated radio receiver and transmitter designed for communication over short distances. Highly portable, it is intended primarily as a handie-talkie for foot combat troops on a platoon and company level. A minimum of instruction is required to operate this set.

b. The set is self-contained; all operating components necessary for reception and transmission are contained in a two-piece cast-magnesium case. The set may be held in either hand when operating. The microphone and the earphone are fastened to the inside of the case so that the set resembles a hand telephone. An adjustable strap is attached to the case of the set for carrying and for additional support in the operating position. The total weight of the equipment including the battery is approximately 6½ pounds.

c. Provisions are made for the set to accommodate a loop antenna for homing purposes and a handset which can be used when the operator does not wish to hold the equipment or does not want to use the microphone and earphone contained in the set.

2. Technical Characteristics.—a. Radio Set AN/PRC-6, which consists of Receiver-Transmitter RT-196/PRC-6 and other operating components is designed primarily for use in short-range communication between infantry, tanks, and artillery units. For this reason, the frequency band has been chosen to overlap the frequency bands of certain communications equipments used by artillery and tank units. Appendix B illustrates the frequency coverage of this equipment in relation to the coverage of other equipments currently in use.

b. No antenna change-over switch is used in this equipment. Therefore, the antenna is always connected to both the receiver and the transmitter. During transmission, the receiver provides sidetone, so that the operator can hear his own voice when transmitting. When it is not feasible or desirable to use the earphone and the microphone contained in the case, Handset H-33C/PT is connected to the equipment.

c. Radio Receiver-Transmitter RT-196/PRC-6 is a 13-tube combination receiver-transmitter designed for the reception and transmission of frequency-modulated signals over a range of 47 to 55.4 megacycles. Each equipment is adjusted to operate on only one of 43 channels at any one time. The channels are separated by 200 kilocycle intervals. The equipment is directly crystal-controlled during reception and indirectly controlled during transmission. Crystal changes and the required

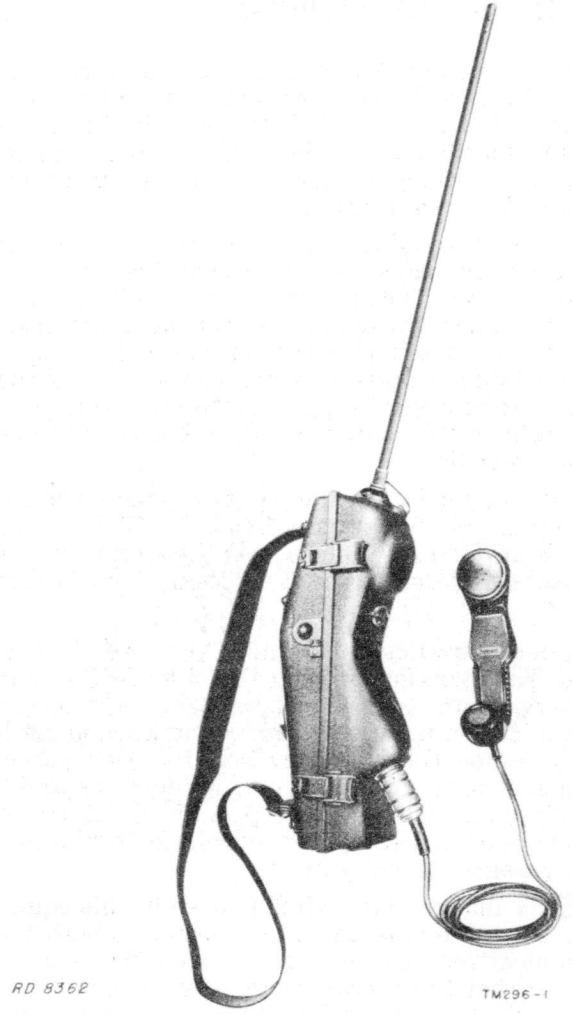

Figure 1.—Radio Set AN/PRC-6.

Figure 2.—Installation of antenna.

channel setting adjustments should be made only by personnel with the proper equipment and familiar with the necessary procedures. TM 11-4069 contains the instructions necessary to change the channel frequency.

d. The power output of this set is rated at ¼ watt and satisfactory communication can be obtained up to a distance of 1 mile over average terrain. The antenna used with this equipment is fabricated from several layers of very flexible steel tape, and is of the whip type. When the set is not in operation the antenna may be disconnected from its mounting and wrapped around the case of the set for ease in handling.

e. The power for operation of this set is a self-contained dry cell battery, BA-270/U. This battery consists of three batteries in one container sharing a common plug. The dimensions of the battery are such that it fits snugly into the lower compartment of the case. Under normal conditions, receiving 10 times as often as transmitting, the life of the battery is approximately 20 operating hours.

f. This set is designed for frequency-modulated, voice transmissions and can be netted with any other frequency-modulated set adjusted to the same frequency.

g. The set is encased in such a manner as to be immersion-proof although reasonable care must be taken to keep the set dry.

h. A plug is provided at the bottom of the equipment. It should be removed when ventilation is desired or a special arctic battery is to be inserted.

3. General Operational Rules and Procedures.—a. When using this equipment for communication between ground stations, keep the antenna as nearly vertical as possible. Signals which are clear with the antenna in the vertical position might be completely lost if the antenna were horizontal. Occasionally, when the equipment is being used to communicate with aircraft, better performance results when the antenna is at an angle to the vertical or completely horizontal.

b. Use the sling attached to the case to avoid fatigue while carrying or holding the equipment. The sling attached to the case of the set consists of two straps that function independently of each other. The inner strap is provided to aid the operator in holding the equipment in the normal operating position and is adjustable to allow for different hand sizes and to permit the use of gloves. Do not tighten it so that the circulation of blood is cut off. The outer strap is provided to allow the operator to carry the set slung over his shoulder.

c. The antenna of this equipment is conspicuous and will bring attention to the operator. No simple camouflage method is effective when the operator, the radio set, or the antenna is

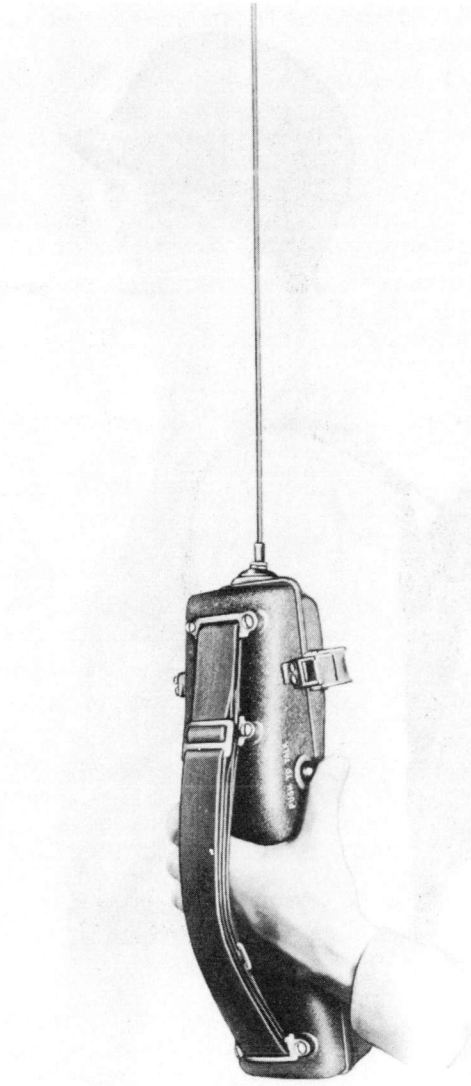

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Figure 3.—Use of sling to support Radio Set AN/PRC-6 in operating position.

Figure 4.—Use of sling to carry Radio Set AN/PRC-6.

silhouetted against an unbroken skyline. Although elevated sites are excellent from a technical standpoint, they must be avoided unless the tactical situation permits such locations. If the weather is not excessively windy and the operator does not have to keep moving, the entire radio set may be camouflaged by draping any light camouflage-painted material over the radio set and the operator. **Do not** use this method in rainy weather.

4. Receiving.—a. Place the EXT.-OFF-INT. switch in the INT. position. A hissing or rushing sound (called background noise) should be heard in the earphone indicating that the equipment is functioning as a receiver. If the sound is not heard, turn the volume control fully clockwise. If the background noise is still not audible, change the batteries. Turn in the equipment for repair if background noise is not audible after the above operations have been performed.

b. If the operator desires to use Handset H-33C/PT instead of the internal earphone, the handset plug must be mated with the appropriate receptacle on the case. The receptacle is located just below the microphone projection. Couple the handset plug to the radio receptacle. **Do not use force** as the three guide pins are not equally spaced and fit the grooves properly in only one position. After plugging the handset in, turn the EXT.-OFF-INT. switch to the EXT. position.

c. When the VOLUME is turned up (clockwise) the sound of one station calling another can be heard with the earphone several inches from the ear. When necessary, the operator can support the set near his ear with the sling and thus leave both of his hands free.

d. Never leave the EXT.-OFF-INT. switch in the INT. or EXT. position unless the equipment is actually in use. Battery power is consumed whenever the switch is not in the OFF position.

5. Transmitting.—a. After the set has been turned on, as outlined above, to transmit, depress the PUSH-TO-TALK switch on the side of the case and talk into the microphone. Speak distinctly and in a normal tone. Do not start talking until the hissing sound has disappeared. **Do not** keep the PUSH-TO-TALK switch depressed when not transmitting. When the transmitter is on, you can **not** hear the other station. In addition, more battery power is consumed when the equipment is being used as a transmitter.

b. The operator should speak clearly and should be careful that the PUSH-TO-TALK switch is depressed before starting to speak and is released immediately after completion of the conversation. In the beginning, the operator may experience some difficulty in synchronizing the operation of the

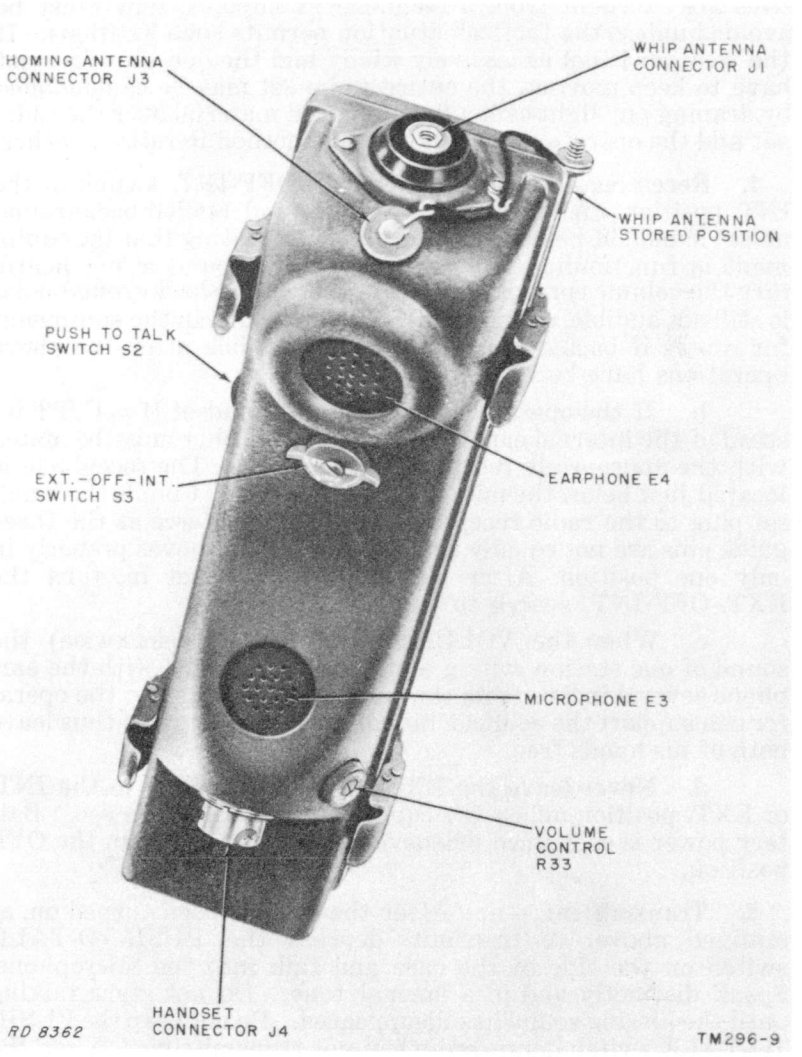

Figure 5.—Radio Set AN/PRC-6, controls.

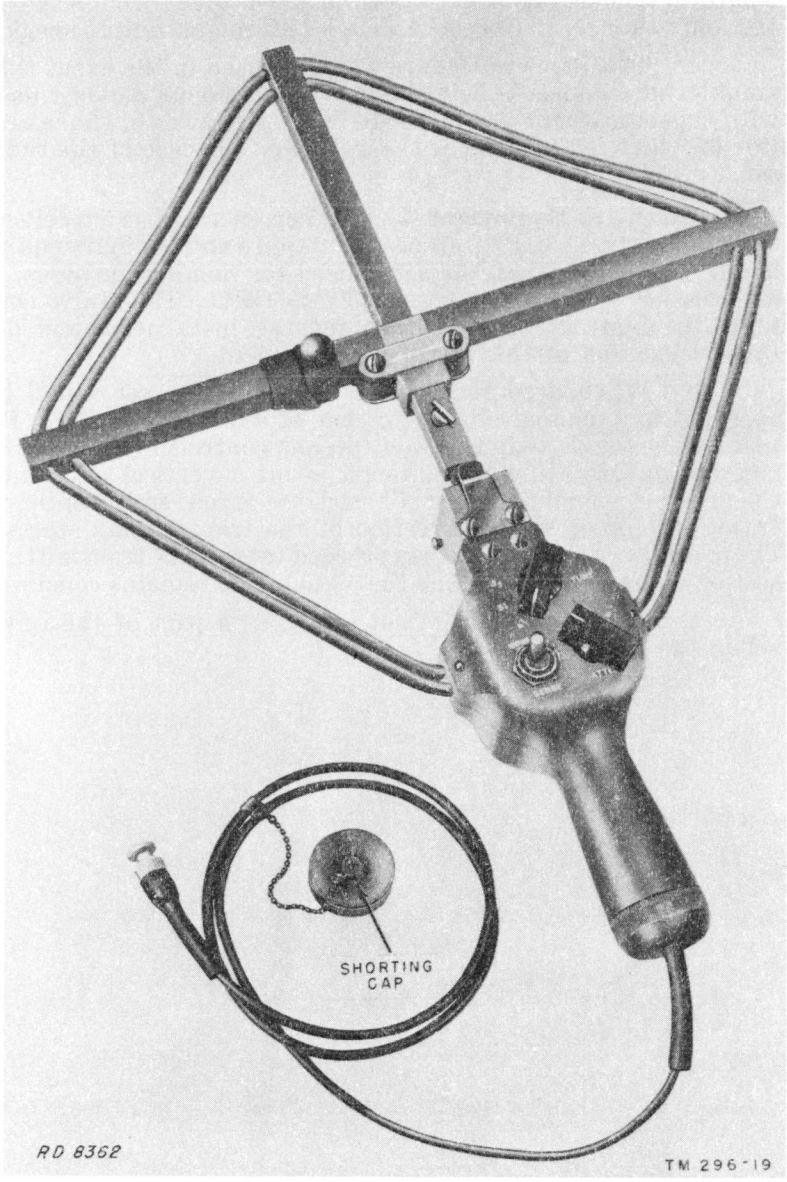

Figure 6.—Antenna AT-249/GRD.

switch with the beginning and the end of his speech. There is a natural tendency to hold the switch down when through speaking and to forget to press the switch before starting to speak.

c. This same procedure would be used in the event that an external handset is being used. The external handset used with this equipment has a PUSH-TO-TALK switch, the operation of which is the same as the switch on the case of the radio set.

6. Auxiliary Equipment.—a. When operated as a receiver-transmitter the AN/PRC-6 does not require any auxiliary equipment. However, when the set is used for homing purposes, it is necessary to install Antenna AT-249/GRD. TM 11-296 contains the instructions necessary for the installation and detailed operation of this auxiliary equipment.

b. When used for homing purposes the set would be operated in a manner similar to that of a direction finder. By placing the toggle switch on the antenna controls to the SENSE position and rotating the antenna about a vertical axis until the greatest signal response is heard, the arrow on the antenna frame will point to the direction of the transmitting station. The operator of the set can then proceed toward the transmitting station along a path in which the signal level remains constant.

c. This equipment is not issued as a part of the radio set in the Marine Corps.