AN/PRC-90 RADIO SET

The AN/PRC-90 (fig. 5-8) radio set is a dual channel, battery-powered, personal emergency rescue device used principally for two-day voice or MCW (modulated continuous wave, which is used to send Morse code signals) communications between a downed aircrewman and a rescue aircraft. The radio transmits either voice. tone (MCW), or swept-frequency homing beacon

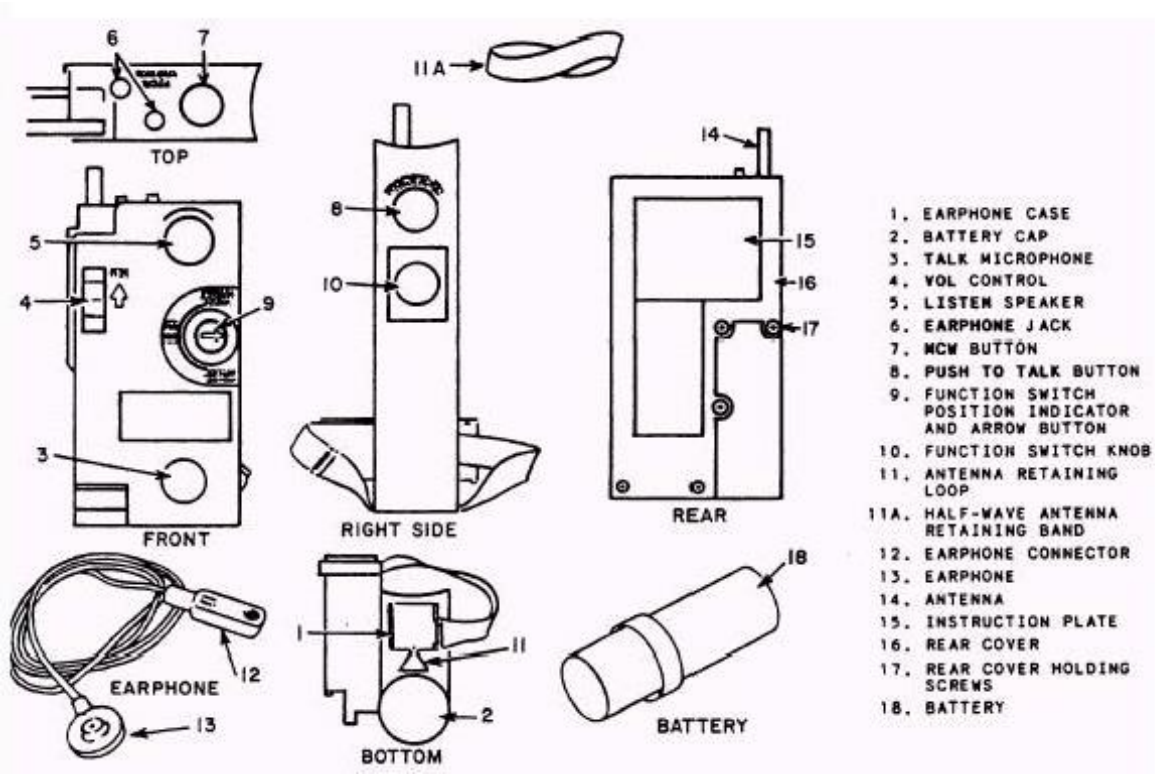

Figure 5-8.-AN/PRC-90 controls and indicators.

signals to guide rescue aircraft to the downed aircrewman. Although the PRC-90 is a line-ofsight communications device, it has a voice range under ideal conditions of 60 nautical miles to aircraft operating at 10,000 feet. The automatic direction finder has a range of 50 nautical miles and atone (code signal) range of 80 nautical miles to aircraft operating at an altitude of 10,000 feet.

Batteries

The batteries are tested by using Test Set TS 2530/UR. Batteries are considered to have a maximum shelf life of 36 months from the date of manufacture. This shelf life is based upon a storage temperature of 70 'F. If the temperature increases, their storage life is shortened. For example, if the temperature reaches 130 'F, the storage life can be reduced to as short as 1 month. When you are in an activity that uses this battery, you should refer to NAVAIR 16-30PRC 90 for the most current shelf life information.

Operating Procedure

Refer to table 5-2 for the functions of each control on the PRC-90. The set is operated as follows:

1. Free the antenna from its stowed position by pulling its end from the retaining ring or band

Table 5-2.-Operating Controls and Indicators

Control or Indicator	Control Position	Function
Function switch	OFF	Completely removes power from radio set.
	VOICE/MCW 243.0	Turns on the guard channel receiver to the emergency frequency of 243.0 MHz. Also enables voice and MCW guard channel transmission which are keyed by the PUSH TO TALK or MCW buttons.
	BCN 243.0	Turns on 243.0 MHz guard channel transmitter, and transmits a beacon tone. Swept audio tone is continuously transmitted for rescue aircraft to home on.
	VOICE 282.8 NOTE The button, (9, figure 5-8) must be de-depressed to place function switch in the VOICE 282.8 position.	Turns on alternate channel to receive on 282.8 MHz. Also enables voice transmission on auxiliary channel when PUSH TO TALK button is depressed.
PUSH TO TALK button	Depressed	Turns receiver off and turns transmitter on when function switch is in either VOICE/MCW 243.0 or VOICE 282.8 position. Best voice transmissions are obtained when spoken directly into the talk microphone.
	Released	Turns off transmitter and turns on receiver; received signal is heard with ear close to LISTEN speaker or earphone.

Table 5-2.-Operating Controls and Indicators-Continued

Control or Indicator	Control Position	Function
MCW button		This button is a telegraph key; it enables the operator to transmit code when the normal transmitting level of his voice may reveal his position. MCW is only obtainable when the function switch is in the VOICE/MCW 243.0 position.
	Depressed	Causes radio set to transmit a continuous tone, receiver off.
	Released	Turns transmitter off, receiver on.
VOL control		This controls the volume of the sound from the LISTEN speaker or earphone. It controls received signals, not sidetone.
	Fully Up, MAX	Loudest sound
	Fully down	Quietest sound, but radio set is not turned off.
		NOTE Volume control does not affect transmitted power output.
LISTEN speaker		Sound of received signal is heard by placing ear close to LISTEN speaker. Sound of MCW or beacon transmitter may also be heard. The LISTEN speaker is shut off when the earphone is connected.
TALK microphone		Picks up the voice being transmitted when PUSH TO TALK button is depressed and function switch is set to either VOICE/MCW 243.0 or VOICE 282.8.
Earphone jack	Earphone connected	Causes sound to be heard in earphone. A magnet in the earphone connector (12, figure 5-8) shuts off the LISTEN speaker.
	NOTE Connector may be joined to jack in either of two polarities.	
	Earphone disconnected	Sound is heard through LISTEN speaker.
Battery cap		Holds battery in place.

as appropriate. The antenna snaps into an upright position. Fully extend all five telescopic sections of the half-wave antenna by grasping it by its tip and pulling outward.

2. Set the function switch to the mode of operation that you want. The function switch is set by rotating the thumb knob on the right-hand side so that the arrow points to the mode selected. The function switch is detented and clicks into each position. Rotate the knob down one click (from OFF) for VOICE/MCW 243.0 operation, or two clicks for BCN 243.0 operation. For VOICE 282.8 operation (secondary channel), push the button with the arrow and rotate the function switch knob up one click.

3. For voice operation, hold the radio set and adjust the VOL control. To transmit, push down the PRESS TO TALK button and speak directly into the TALK microphone.

4. If guard channel steady-tone transmission or Morse code operation is desired, set the function switch to VOICE/MCW 243.0. Depress the MCW button to transmit the tone. Listen for the sidetone in the LISTEN speaker or earphone while the MCW button is depressed. This sidetone indicates proper transmitter operation.

5. For guard channel beacon operation, set the function switch to BCN 243.0. The transmitter continuously sends the swept-tone beacon signal at this setting. Listen for the sidetone as an indication of proper operation. In the beacon mode, the sidetone is a chirping sound.

NOTE: Since the transmitter is keyed automatically in the beacon mode, and since continuous transmission may be needed for a prolonged period of time, the AN/PRC-90 may be placed upright on a flat surface. It will then transmit automatically.