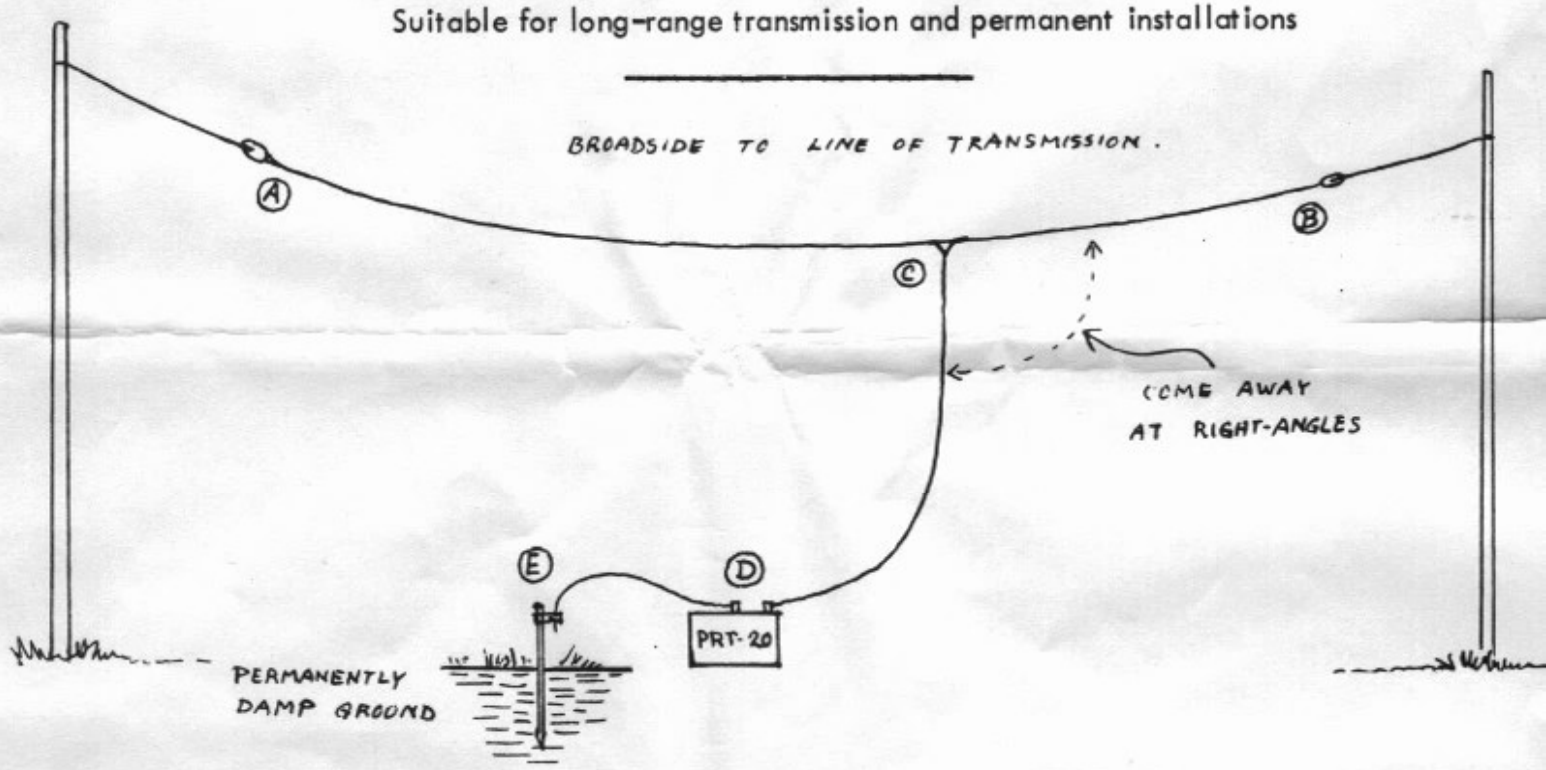
HALF WAVE HORIZONTAL

WITH OFF-CENTRE FEED

Suitable for long-range transmission and permanent installations



This antenna is provided complete with insulators, tie-back and lead-in wires. The horizontal portion is already accurately cut to length for the operating frequency and should neither be shortened nor added to.

Erect in the clear, as high as possible above ground or obstructions, with the dimension A - B at right angles to the desired direction of transmission. Length A - B should not be altered.

C - D should be at right angles to A - B and at least half the length of A - B. Excess length of lead-in C - D should be cut off, not coiled up.

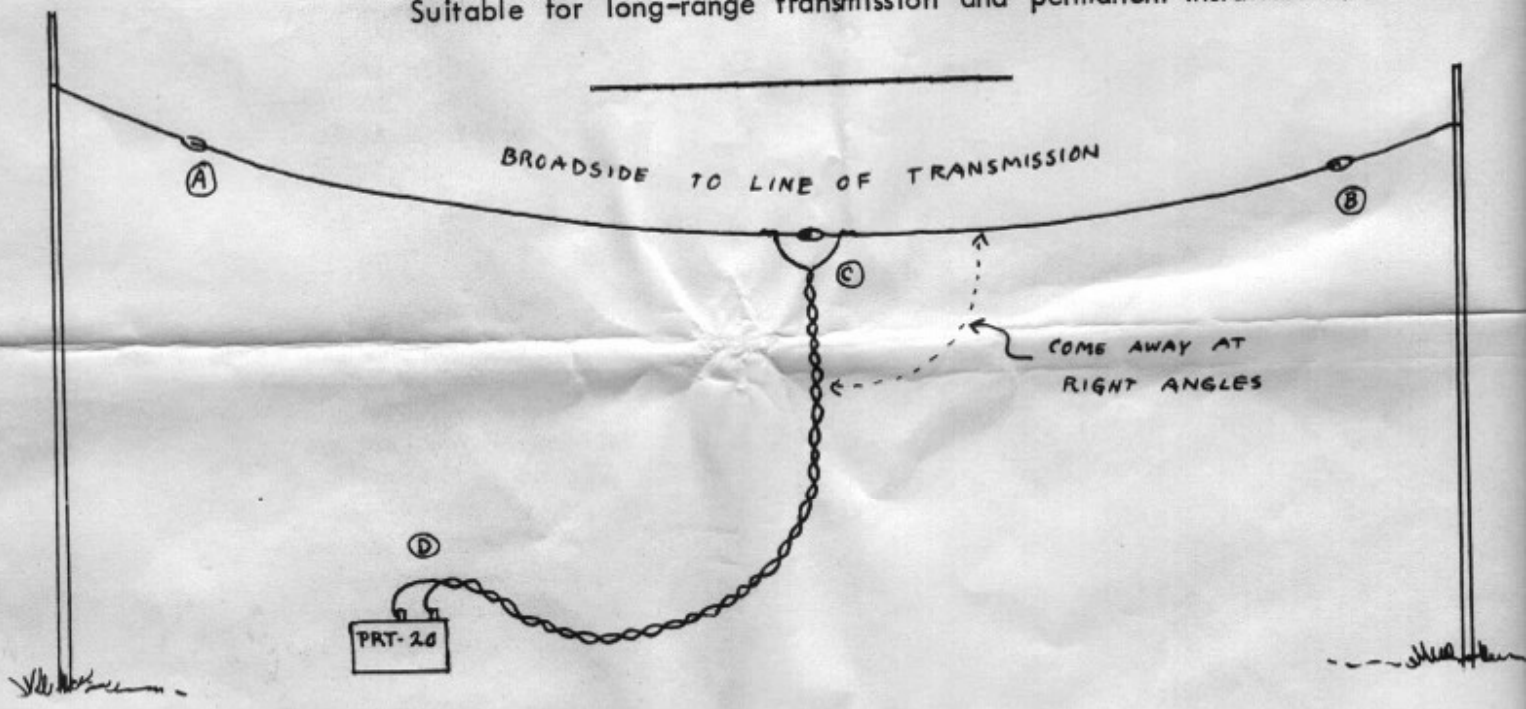
Ground wire D-E should be as short and direct as possible. A ground rod may be used if the ground is permanently damp, otherwise cold water piping or other large metal masses may be used.

Tune as per Instruction Manual for the PRT-20.

HALF WAVE HORIZONTAL

WITH TWO-WIRE CENTRE FEED

Suitable for long-range transmission and permanent installations.



This antenna is provided complete with insulators, tie-back and lead-in wires. The horizontal portion is already accurately cut to length for operating frequency and should neither be shortened nor added to.

Erect in the clear, as high as possible above ground or obstructions, with dimension A - B at right angles to desired direction of transmission.

C-D should be at right angles to A-B and at least half the length of A - B. Excess length of feeder should be cut off, not coiled up.

No ground necessary.

Tune as per PRT-20 Instruction Manual.

QUARTER WAVE VERTICAL

WITH VARIATIONS

Suitable for medium range transmission & permanent or temporary installations

This antenna is complete with insulator and tie-back wire, and does not use any additional lead-in wire. It is already cut accurately to length for the operating frequency and should neither be shortned nor added to.

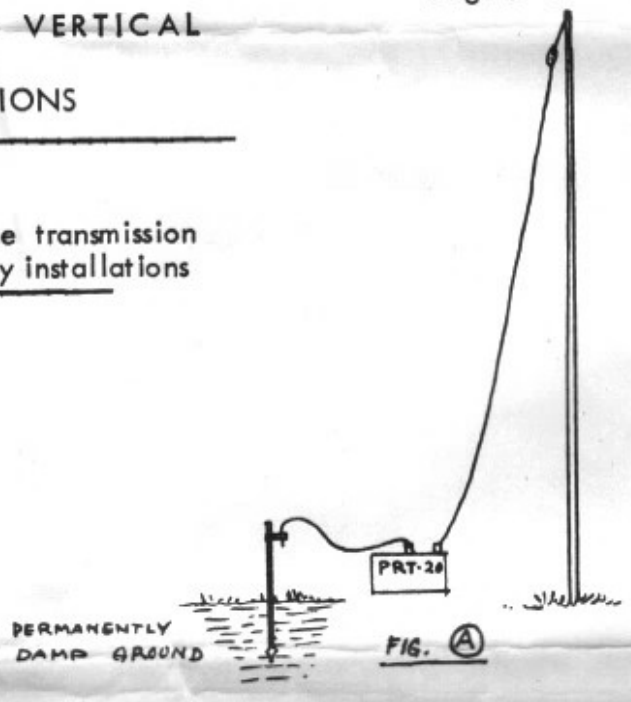
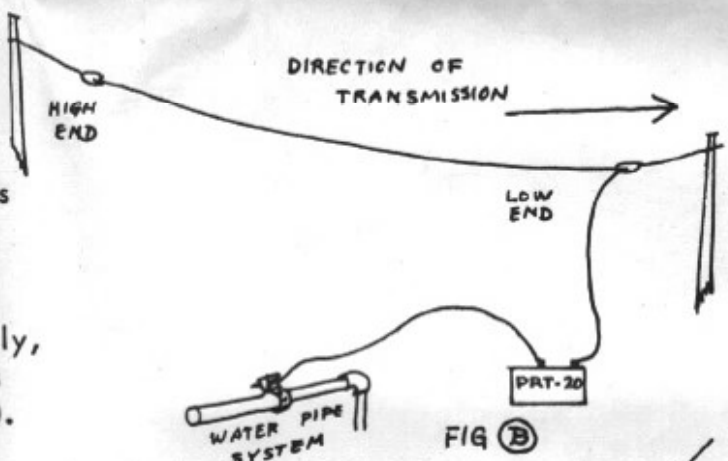


FIG. (A)

The insulator end of the antenna should be suspended as high as possible above ground and obstructions, and the other end attached to antenna post on the PRT-20.



The ground wire should be as short and direct as possible - See Fig (A).

If it is not possible to suspend the wire vertically, it may be inclined, or inverted "L", so long as the original length is preserved - see Fig. (B).

FIG (B)

If a GOOD ground connection is not available, a second quarter-wave antenna may be used in place of a ground. It may be -

laid on top of the ground - Fig. (C)

FIG. (C)

or

suspended - Fig. (D)

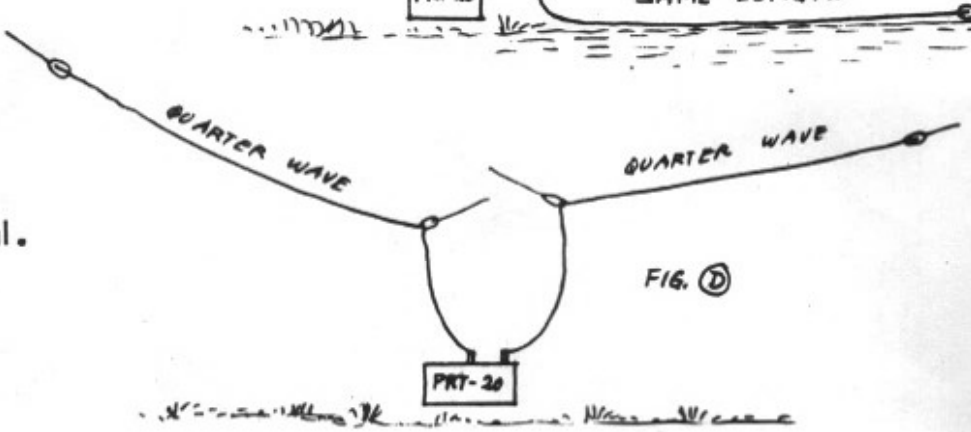


FIG. (D)

Tune as per Instruction Manual.

LOADED WHIP - FIXED & PORTABLE

This telescopic whip is supplied with a Resonator Coil, which attaches to the PRT-20 case. (See Page : 5 - The Antenna Resonator - for installation and tuning instructions.)

For "fixed" use, it should be used with a ground rod or other ground connection - Fig. (A). This combination suitable for short range work - five to ten miles.

For "portable" use, the ground connection is dispensed with and a special "shoulder strap" provides a "capacity ground" through the body of the operator. - Fig. (B). Suitable only for extremely short range work - possibly one mile.

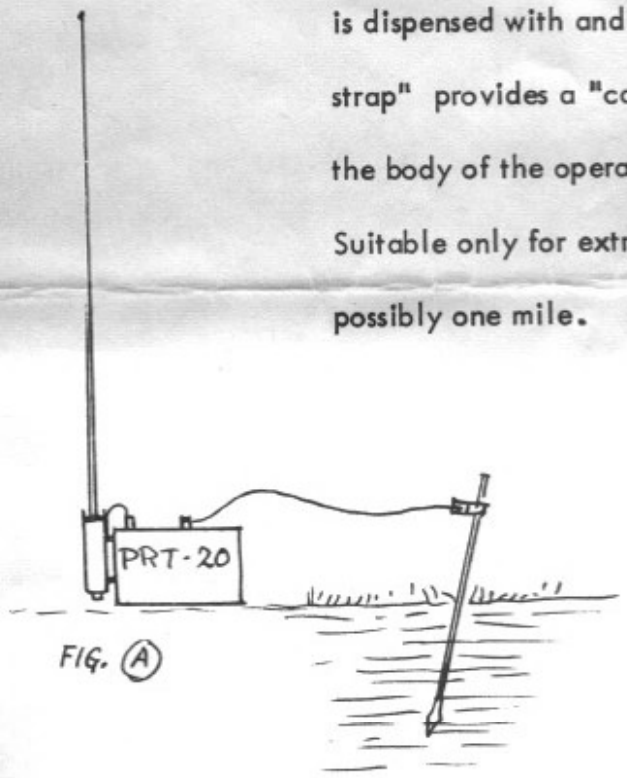


FIG. (A)

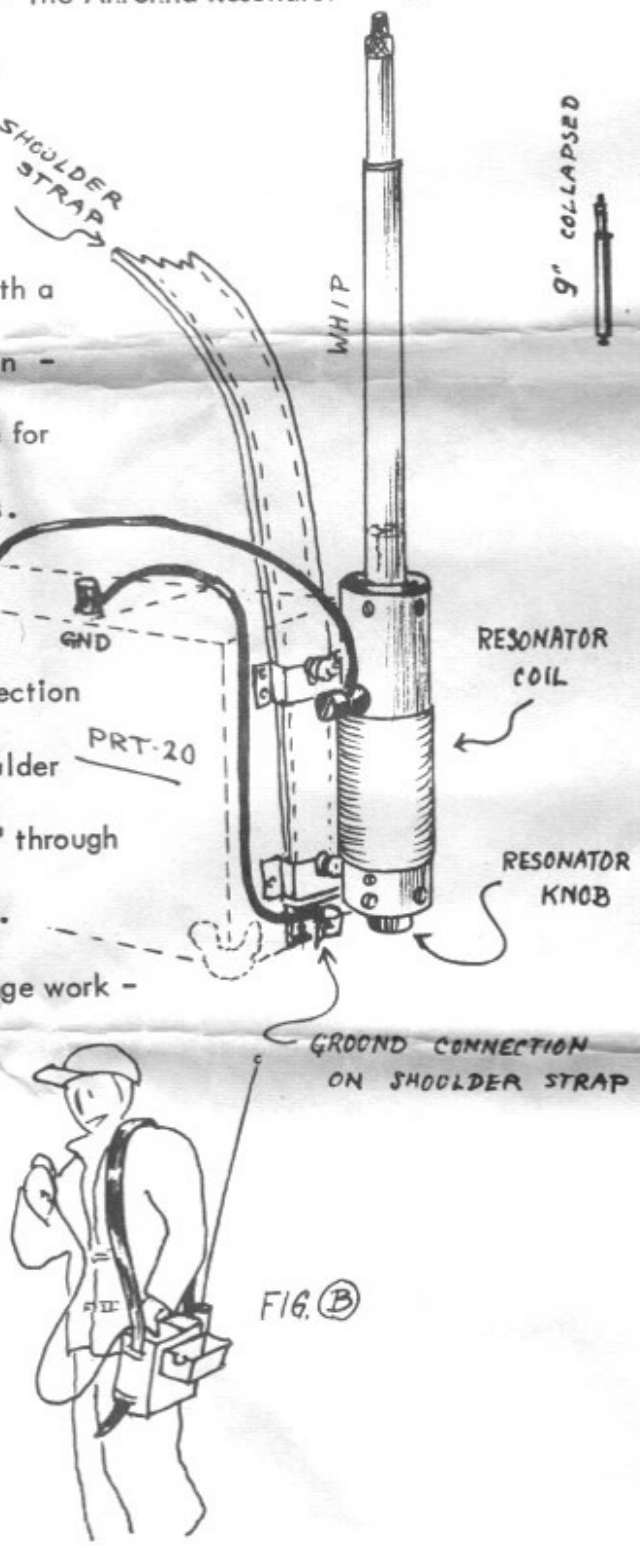
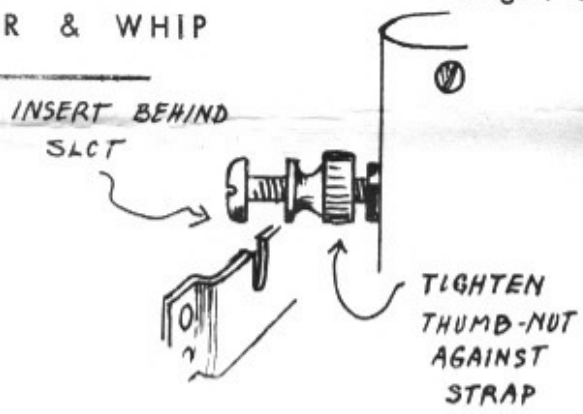


FIG. (B)

ANTENNA RESONATOR & WHIP



1. Mount the resonator on the strap brackets on either end of the PRT-20 case, securing it by the thumb nuts provided.

2. Attach the whip to the split stud on top of the antenna resonator, and extend to full length.

3. Connect the short wire provided from the terminal post on the resonator to the antenna post on the PRT-20 - Fig. (A).

4. Connect the ground post to ground rod or other "earth" connection.

5. To use as a hand-carried portable, dispense with the ground connection, and connect the special carrying strap by the short wire provided, to the "ground" post on the PRT-20 - Fig. (B).

6. Carry out tuning operations A, B, C, D, as outlined in the Instruction Manual, with "Load" knob on transmitter set approximately two turns from the extreme clockwise position.

7. Press switch to "transmit" and rotate knob on resonator carefully for maximum reading on the meter.

8. Re-adjust transmitter "Load" knob until meter reading in Position #5 equals reading in Position #4.

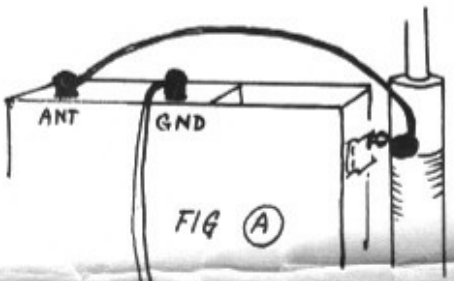


FIG (A)

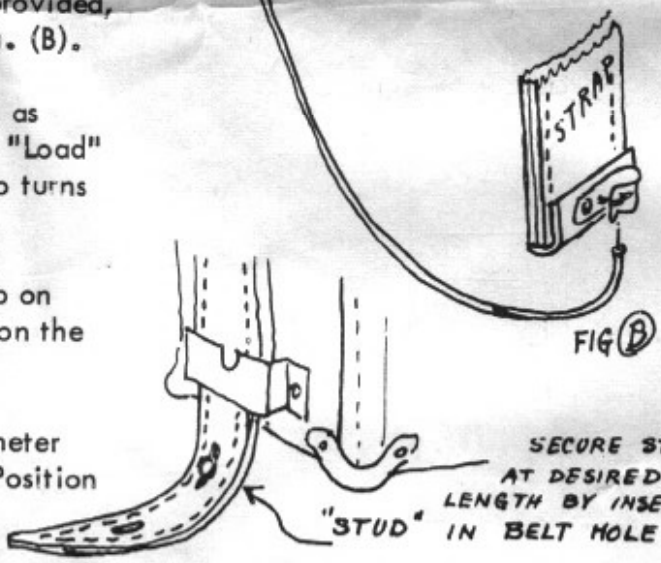


FIG (B)

All tuning adjustments should be made when set is carried in operating position, with shoulder strap in place and checked frequently for re-adjustment. (Movement of the operator's body will affect the tuning of the set to a certain extent, due to variation in body capacity.)

To assist in locating correct setting for resonator knob, the following table gives the approximate setting for given frequencies. The exact position will be found by experiment -

Frequency	Resonator Knob setting in turns from extreme clockwise position.
2 mc.	Quarter turn
3 mc.	Five turns
4 mc.	Seven turns
5 mc.	Ten turns

Avoid touching the whip or resonator coil during transmission, as this will de-tune the transmitter.

CHOICE OF ANTENNA

for

SPILSBURY & TINDALL, MODEL PRT-20, PORTABLE RADIOTELEPHONE

While many variations of antenna may be used successfully, these fall mainly into the following three categories, dependant upon distance to be worked, frequency used, and permanency of installation. Distances suggested are entirely relative, and subject to wide variation in practice -

	TYPE	RANGE
1.	Half-Wave Horizontal (cut to length and pre-tuned)	50 miles and up.
2.	Quarter-Wave Vertical (cut to length and pre-tuned)	50 miles and less.
3.	Centre-Loaded Whip (tuned by resonator)	5 miles and less.

As a temporary expedient, any existing antenna of random length may be used and tuned to frequency with the resonator and, while results may not be optimum, satisfactory communication may be obtained.

In locations of noisy reception, the Half-Wave Horizontal is to be preferred.

In locations where a satisfactory ground connection is not available (such as in dry sand or rock, or on an ice field), a Half-Wave Horizontal, with two-wire current feed, or a Quarter-Wave Vertical with counterpoise, is recommended.

Installation instruction sheets for the following antennae, follow -

Half-wave Horizontal, with off-centre feed . . . . . Page : 1
Half-Wave Horizontal, with two-wire current feed . . . Page: 2
Quarter-Wave Vertical, with variations . . . . . Page : 3
Loaded Whip - fixed and portable . . . . . Page : 4
The Antenna Resonator . . . . . Page : 5
