

BBC TELEVISION

MAKING YOUR OWN TRANSISTOR POCKET RADIO SET

Every step in making this radio set will be shown in 'FOCUS'
on BBC Children's Television between 5 and 6 p.m.
beginning

MONDAY 23 MARCH 1959

COMPONENT PARTS REQUIRED may be normal-size items, and need not be miniaturized. The latter cost rather more and, as the set is not unduly small, are not necessary. It is very likely that, unless you have a shop in your locality which specializes in components for the home constructor, you will not be able to obtain the parts from your local dealer. In this case, unless the dealer is willing to obtain them for you, you will have to order them by post. To find names and addresses of firms which supply parts for building your own set, you should consult any well-known technical magazine which you can buy at your newsagent or find at

your local library. There are many such shops in London and one in most big cities and towns. If you order by post, be sure to ask for the components exactly as listed. Prices are only approximate and are those applying at most dealers in the London area. It is quite possible that they vary throughout the country.

If you are buying a soldering-iron the small instrument type is best and costs about 25s. The deaf-aid type earpiece costs about 12s. 6d. but any earphones will do including low resistance types obtainable very cheaply.

COMPONENTS REQUIRED

All prices are approximate and will probably vary in different places.

Piece of thin 'peg board' or hardboard or 3-ply wood, size about 2 $\frac{3}{4}$ in. by 5 $\frac{1}{2}$ in.

Coil: Dual range crystal set type DRR 2. Other crystal set coils, if on hand, may be tried but DRR 2 is best, 4s.

C.1. 500 pF solid dielectric tuning condenser, 3s. 11d.

C.2. 2 mfd. electrolytic condenser, rating 15 v. or more, 1s. 6d.

C.3. 2 mfd. electrolytic condenser, rating 15 v. or more, 1s. 6d.

R.1. 220 k.ohm resistor $\frac{1}{4}$ watt, 6d.

R.2. 22 k.ohm resistor $\frac{1}{4}$ watt, 6d.

R.3. 4,700 ohm resistor $\frac{1}{4}$ watt, 6d.

R.4. 220 k.ohm resistor $\frac{1}{4}$ watt, 6d.

R.5. 22 k.ohm resistor $\frac{1}{4}$ watt, 6d.

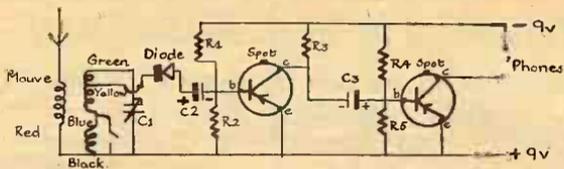
(Continued overleaf)

COMPONENTS REQUIRED (continued)

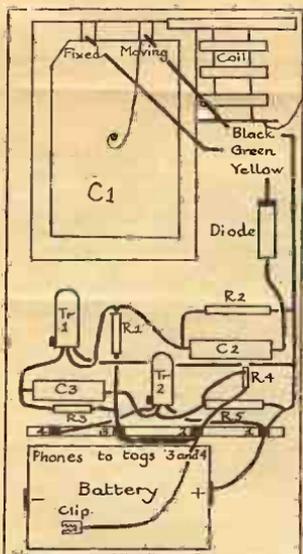
Two transistors (OC 71 or OC 70 or similar or Red Spot, or other Audio type). OC types 2½s. each, others 7s. 6d. each, 15s;
Small crocodile clip, 6d.
One Germanium diode detector, 1s.
4-tag board, 6d. Tuning knob, 1s. Solder, 6d. (flux-cored)
Small amount tinned copper wire for connections, and sleeving.
Few feet of thin flex; small quantity of thin aerial wire.
Transistor type miniature 9-volt battery type PP4, 2s.
Small box, wood or plastic, or strong cardboard
Headphones, any type; or deaf-aid earpiece.

POINT-TO-POINT WIRING INSTRUCTIONS

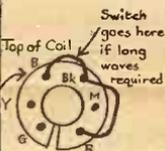
1. Fix 500 pf variable condenser to board. C.1.
 2. Fix tag board to opposite end.
 3. Fix coil in position with small bracket.
 4. Connect 'fixed' on C.1 to 'green' on coil.
 5. Connect 'moving' on C.1 to 'black' on coil.
 6. Connect 'red' on coil to 'black' on coil.
 7. Connect 'blue' on coil to 'black' on coil (unless long waves are required when a small on-off switch should be connected between these points).
 8. Connect 'yellow' on coil to red (or mauve) side of diode.
 9. Connect 'black' on coil to end tag of board (Tag 1).
 10. Connect other side of diode to plus (+ or red) side of 2 mfd. condenser C.2.
 11. Connect other side (negative, — or black side) of same 2 mfd. condenser C.2 to
 - (a) one end of 220 k.ohm resistor R.1.
 - (b) one end of 22 k.ohm resistor R.2.
 - (c) centre connection of one transistor Tr.1.
 12. Connect other end of 22 k.ohm resistor R.2 to wire between 'black' on coil and tag 1.
 13. Connect tags 2 and 3 together and the other end of 220 k.ohm resistor R.1 to tag 3.
 14. Connect the 'collector' connection of the transistor (red spot side) to negative (black, —) end of the other 2 mfd. condenser C.3.
 15. Connect the third and remaining connection to the transistor (emitter) to the wire between 'black' on coil and tag 1.
 16. Connect also to the negative (black, —) end of the second 2 mfd. condenser C.3 one end of the 4,700 ohm resistor R.3.
 17. Connect other end of same 4,700 ohm resistor R.3 to tag 3.
 18. Connect other end (positive, red, +) of second 2 mfd. condenser C.3 to
 - (a) centre connection of second transistor Tr.2 (base)
 - (b) one end of 220 k.ohm resistor R.4.
 - (c) one end of 22 k.ohm resistor R.5.
 19. Connect other end of 22 k.ohm resistor R.5 to wire between 'black' on coil and tag 1.
 20. Connect other end of 220 k.ohm resistor R.4 to tag 2.
 21. Connect the 'collector' connection of the second transistor Tr. 2, that is the red spot side; to tag 4.
 22. Connect the third and remaining connection (emitter) of this transistor Tr. 2 to tag 1.
 23. Connect a short flexible wire from tag 1 to Positive (plus, +) side of the battery.
 24. Connect one end of a short flex to the crocodile clip and the other end of the flex to tag 2.
 25. Connect one end of phones or ear-piece lead to tag 3.
 26. Connect other end of the lead to tag 4.
 27. Connect short piece of flex to 'mauve' on coil to form aerial connection
 28. Bare the other end of this flex and connect to it, by twisting or soldering, the required length of aerial wire.
- The receiver can be fixed in the box by the nut which holds the variable condenser C.1 to the board and the knob attached to the spindle of that condenser. Clip goes to battery negative (—) to switch on.



Theoretical Diagram

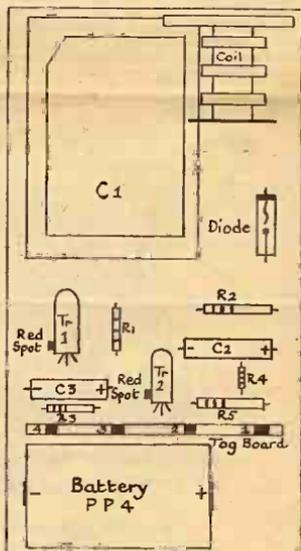


Wiring Diagram



Y = Yellow
 B = Blue
 Bk = Black
 M = Mauve
 R = Red
 G = Green

Connect Aerial wire to Mauve on Coil



Layout of Components