



the tank control very slowly in one direction from zero light to maximum and then right on past maximum, it will be noticed that on one side the light comes up very gradually, and after the maximum is passed the light goes out suddenly. The reduction should be made on the gradual side always. We give a graphical explanation as follows:-



zero light -----

The reason for this adjustment is that if the wrong setting is taken, the crystal will have a tendency to stop oscillating when the key is pressed, with, of course a consequent unintelligibility of signals.

There is also a right and wrong way of putting in a crystal. This refers to the type with a metal top. The quartz is held between two plates, one of which is on top. As the crystal is usually connected between the control grid of the valve and the earth, it will be seen that the top plate should be the one which is earthed. A simple test will tell you when it is right or wrong. Touch the top of the crystal with the finger (do not tap or knock it) and if it is correct the light of the tank bulb will not vary. If it is wrong, the light in the tank bulb will go dim or fade out altogether. If that should happen, reverse the crystal in its socket.

Faults:-

A proper system should be followed if a fault is to be traced quickly and with certainty. Haphazard searching may result in a quick

repair, but at a cost of 250 times the time. On the other hand, if a system is adopted it should be possible to trace a fault in a few minutes. The following procedure is strongly recommended and should be carefully studied.

If neither the transmitter nor receiver will work when the mains are switched on, it is as well to make sure the plug is "live". This can be ascertained by testing with a lamp. A test lamp is very easy to make and invaluable. If the mains plug is alright, then carefully examine the connections to the plug. A very common difficult fault sometimes occurs where the wires bend on entering the plug. It is often found that the wire has fractured, leaving the flex apparently alright but held together only by the rubber insulation. The best way to check for this is to give each wire a good pull. This will at once show whether the wire is broken or not. If the mains and the plug are O.K. check all external connections and components such as coils, headphones, crystal etc. before proceeding to take out the chassis. These parts can be tested by substituting your spares, or, in the case of the transmitter, try another frequency band. After you have satisfied yourself that everything outside the set is alright, you can remove the chassis, being careful to remove the right screws (usually those underneath). Use your test lamp across the point where the mains lead connects to the transformer. This test will prove whether the mains lead from the plug to the set is alright.

Always test the operation after each repair or adjustment has been carried out, as it will be most unlikely that more than one fault will occur at a time.

It is well to remember that although a valve is heating, this is no guarantee that it is operating correctly.