

Answer:—There is no mystery at all. The large filter condensers in the K-112 simply retain a charge of electricity after the primary power has been turned off, and they discharged through your fingers when you placed them on the Resistograd and the metal chassis. In most cases the charges leak off through the output resistor, but to avoid further occurrences of this kind simply tap a screwdriver or a piece of wire from B + 300 to the can to discharge the condensers completely.

High voltage condensers of good quality will retain charges of electricity for days at a time.

CONNECTING EARPHONES

8. Although I have brought in many of the foreign stations on the loud speaker with my Super-Wasp, I like to do my listening with earphones. Is it possible to use more than one pair at a time? If so, I will buy another set of phones, as often I have visitors and it is inconvenient to pass one pair around when a station is too weak for the speaker.

Answer: It is altogether practicable to use two and even three pairs of earphones at the same time. The signals are reduced in strength only slightly and not enough to hurt reception. Simply connect the phones in series.

LOWERING TONE OF A SET

9. Will you kindly furnish a diagram showing how I can connect an adjustable tone filter to my set, to cut off the high notes and make the tone of the set sound deep and low?

Answer:—A resistance-capacity filter circuit is shown in Fig. 5. The circuit offers an adjustable low impedance to the high frequency currents, depending upon the resistance setting of the Resistograd. Decreasing the resistance by screwing in

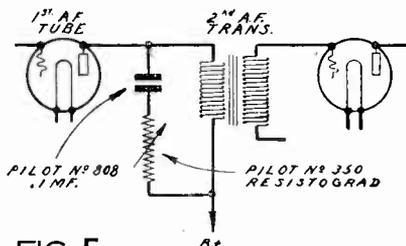


FIG. 5

How a "tone adjuster" may be added to any receiver.

The Resistograd knob will cut off the high notes more and more.

INSULATING THE GROUND WIRE

10. Will you please settle a little argument for us? The question is whether or not the ground wire should be insulated. I claim it isn't necessary, but some of my friends say it is. What's the real "dope"?

Answer:—You win. There is no necessity for thorough insulation of the ground wire, because the steam or water pipes it runs to touch the house at a dozen different points anyway. It is usually most convenient to use insulated wire for the purpose, but you needn't run it on insulators or anything of the sort. Simply hold it down with carpet tacks or upholstery nails.

"C" Bias Resister Values

11. Kindly publish the "C" bias resistor values in ohms to be used with the various common types of tubes.

Answer: Following are the recommended values of "C" bias resistors to be used to furnish proper grid bias voltages for tubes having A. C. filaments.

226 Tube.....	(90 V. plate)	1,700 ohms;	(135 V. plate)	1,500 ohms;	(180 V. plate)	1,800 ohms.
227 Tube.....	(90 V. plate)	2,000 ohms;	(135 V. plate)	1,800 ohms;	(180 V. plate)	2,000 ohms.
245 Tube.....	(180 V. plate)	1,350 ohms;	(250 V. plate)	1,500 ohms.		
171-A Tube.....	(90 V. plate)	1,900 ohms;	(135 V. plate)	1,850 ohms;	(180 V. plate)	2,250 ohms.
112-A Tube.....	(90 V. plate)	1,300 ohms;	(135 V. plate)	1,650 ohms;	(180 V. plate)	1,600 ohms.
210 Tube.....	(250 V. plate)	1,800 ohms;	(350 V. plate)	1,950 ohms;	(425 V. plate)	1,950 ohms.
250 Tube.....	(250 V. plate)	1,600 ohms;	(350 V. plate)	1,400 ohms;	(425 V. plate)	1,550 ohms.
224 Tube.....	(180 V. plate)	450 ohms.				

Thus for two tubes, divide these resistor values by 2, for three tubes divide the value by 3, etc. For two tubes in push-pull operated with a common "C" bias resistor,

The resistance values given are for a single tube. If two tubes are to be operated with a single common grid bias resistor, twice as much plate current will flow through the resistor, so only half the resistance value is required for the same voltage drop.

divisor, divide by 2. Thus for two 245 tubes in push-pull with 250 volts on the plate, use 1500 divided by 2, or 750 ohms for "C" bias resistor.