

Democratic Watchman

Bellefonte, Pa., September 18, 1925.

RADIO.

With the many circuit diagrams available today, some of which are very efficient and some of which are not, the layman gets confused when he starts out to get a circuit which is simple and still workable. The uninitiated may tackle the neutrodyne (along with old-timers) with assurance of success. When this set is built on low-loss lines it is a charm. It is simple to neutralize and easy to operate. The neutrodyne has received some "booming," but this came from the people who didn't take the pains to build the set properly, and also those who used poor and inefficient material. This set is a cinch to log and settings don't change, except if you have a poorly insulated antenna, when during the damp weather the insulators get wet and start to leak, thereby broadening the tuning and unstabilizing the set also.

All the neutroformers are wound seriatim on one low-loss form for the basket-weave type. The panel of the set is the same as that of the standard Neutrodyne, that is, it has the conventional three dials, one rheostat, a filament switch and the two jacks. You, therefore, can purchase a drilled panel that was originally designed for the Neutrodyne and use it for this set without going to the trouble of drilling the holes and also making the engraving.

PURCHASE OF PARTS

Three low-loss straight-line frequency condensers are used for tuning. The five sockets should be of the porcelain base type. The neutralizing condensers are variable from .000015 to .000019 mfd., and are very easy to adjust. The resistance across the grid and filament of the detector tube is a variable grid leak. The grid condenser is a .00025 mfd. (mica). J1 is a double-circuit jack, and J2 a single-circuit jack. Five UV201A tubes are used. Make sure that when you purchase the tubes that the prongs do not shake and also test the tube in a set and see if it is noisy, as this is the cause of a lot of trouble in neutrodyne receivers.

Changing around of tubes will help a great deal in making the set work efficiently. A filament switch, a terminal strip, a 6-volt storage battery, two 45-volt B batteries and a 42-volt C battery are needed. The resistances A are amperites, type 1-A.

If you desire to drill the panel, the following data are given: Six and a half inches from the left of the panel and 3 1/2 inches from the top of the panel drill a hole for the first dial, which is a 4-inch dial; 6 1/2 inches from this hole and 3 1/2 inches from the top of the panel drill the hole for the final dial. All the holes are 3-16-inch in diameter. Six and a half inches from the left of the panel and 1/2 inch from the bottom drill a hole for the first jack, J1, the diameter of the hole being 1/2 inch. In the same line and 13 inches from this hole drill a hole for J2, also 1/2-inch in diameter. Three inches from the right of panel and 2 inches from the bottom drill a hole for the rheostat, the diameter of the hole depending on the type of rheostat being employed. Going back to the left-hand side of the panel, 3 1/2 inches from the left and 1 1/2 inches from the bottom drill the last hole for the switch, the diameter of the hole being 1/2 inch.

HOW TO WIND THE COILS.

The coils are wound in basket-weaver fashion. L1L2, if desired, may be made in a continuous winding. Using No. 22 DCC and a 3-inch diameter form, with 15 dowel sticks equidistant on the circumference, wind ten turns for L1 and 50 turns for L2. The division of the two windings is denoted by a tap. Both the ground and the A minus are connected to this tap. This affords conductive coupling of the aerial to the grid. For conductive coupling L1 is wound separately and so is L2. The two other transformers, L3L4 and L5L6 are wound with ten turns of the same kind of wire for the primary, and 50 turns secondary, tapped at the fifteenth turn for the connection of the neutralizing condensers.

The single winding on the aerial coil works very well, but a little more selectivity will be obtained by following the diagram, with the two windings separate.

The coils are wound "under two and over two." When the winding is finished the coil may be raised about 1 inch from the form and cord inserted in a wave form through the inside length of the winding and knotted for security, or the cord may be employed in any other fashion for support.

The coils are removed from the form after this lacing is completed. L1L2 is mounted on the baseboard at least 2 inches in back of C1, the coils' axes parallel to the baseboard (windings at right angles to baseboard). For this purpose two dowel sticks may be used reinserted at two adjacent holes in the winding, using two 2-inch hard rubber or brass right angles, secured to the baseboard and to the dowel sticks. L5L6 is mounted in the same way. L3L4 is mounted with its axis perpendicular to the baseboard, the more conventional fashion. Thus adjoining coils are at right angles to each other and magnetic interplay is successfully avoided.

Place all the instruments in their respective places, taking care that the RFT are all near their own sockets, so as to have very short leads, and thereby save some energy.

THE WIRING OF THE SET.

Bring the beginning of the wire of L1 to the antenna post of the terminal strip and the end of the coil (this being the ten-turn primary) to the ground. Connect the beginning of the secondary coil L2 to the stationary plates of the condenser, C1, to the grid post of the socket, and to one end of the neutralizing condenser, C2, the end of C2 going to the fifteenth-turn tap on the coil, L4. The beginning of the coil, L3, goes to the plate post of the first tube socket, the end of this coil going to B plus post, 67 1/2 volts, on the strip. The end of L2 goes to the

rotary plates of the condenser and also to the negative side of the A battery, and to one end of amperite. If you desire to obtain volume and a bit less selectivity, connect the end of L1 to L2. The beginning of L4 goes to the grid post of the second tube and also to the stationary plates of the condenser C3 and also to one end of the neutralizing condenser, C6, this is the second one, the end of L4 going to the rotary plates of C3 and to the end of the amperite which in turn goes to the A minus. The beginning of L5 goes to the plate of the second tube and the end goes to the same place the end of L3 went to, that is the B plus 67 1/2 volts. Bring the end of the second neutralizing condenser to the fifteenth turn of L6, the beginning of the coil goes to one post of C5 and also to the stationary plates of C4. Bring the end of the coil to the rotary plates of C4 and also to the post of the leak, and finally to the A-plus and B-minus post of the terminal strip. The left-off terminal of the grid leak goes to the left-off terminal of the C5, which in turn goes to the grid post of the detector socket, the third tube. Note that all the amperites are placed in the negative lead of the A battery and the detector rheostat is placed in the negative lead, to same, the only difference here being that the grid return is put to the positive side of the low potential line instead of the negative as was done with all the grid returns of the other tubes.

The C battery is inserted in the leads of the APT, which go to the minus side of the C battery, the positive side of the C battery going to the switch, eventually to negative A battery. The set is designed for earphone use only to facilitate tuning, otherwise always for speaker use. If earphone service on regular reception is desired insert another switch between the filament side of S1 and the battery side of the audio amperites.

HOW TO NEUTRALIZE THE SET.

Neutralization is a simple process of follow out, but it takes a little time to get it just right. Put a small piece of paper between one of the filaments of the second tube from left and the spring on the socket. Push the filament switch out and light the tubes, then tune in a loud local station. If you hear the least undertone of a signal, there is some interstage coupling present. Adjust the small neutralizing condenser until this signal disappears. The same procedure is followed out with the first tube (extreme left). Both settings are left permanently and should never have to be touched, except if the ground is changed, which may change the apparent capacity of the tubes through the interchanging of current from the coils, and which in turn will change the capacity effect of the neutralizing condensers.—By Neal Fitzalan, in Radio World.

Oyster Season is Here.

The oyster season, lasting during the months containing R, is at hand. Purveyors of bivalves have been notified that the oyster boats are out and shipments can be expected shortly. June to August are the spawning season of the oysters, when they are not disturbed. Cool weather also seems to add to the flavor.

Oysters are one of the cheapest articles of diet at the present time in the United States, considering quality. Baltimore is the great oyster city of the world. The best oyster beds are located in the Chesapeake bay, along the coast of New Jersey and Long Island Sound.

Most oysters after being dredged out are put in fresher water for plumping, losing some of its salty taste and giving it a fatter appearance. Oysters, it is stated, are ready for the table in a year and a half and are at their best at three years of age.

Better Roads Cut Cost.

American motorists cash in a yearly dividend of 10 per cent. on the capital invested in the improved highways of the country. It has been estimated that the average car runs 6,000 miles a year. A saving of 2 1/2 cents a mile for 6,000 miles amounts to \$150 a year. For 17,000,000 automobiles this means a saving of \$2,500,000,000 a year on gasoline, tires, parts, upkeep, renewals and all phases of operation.

The Man Who Never Sleeps.

It is said of the clever Magyar of Hungary that he never goes to bed, but gets up at seven o'clock every morning, that he never has any money and spends it royally, that he never puts off until tomorrow anything he hopes he can induce somebody else to do for him next week, and that he never works on Sunday or any other day if he can help it.

MEDICAL.

Back Bad Today?

Then Find the Cause and Correct It as Other Bellefonte Folks Have.

There's little rest or peace for the backache sufferer.

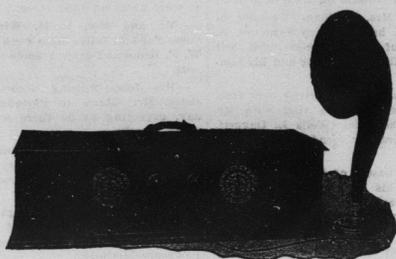
Days are tired and weary—Night brings no respite. Urinary troubles, headaches, dizziness and nervousness, all tend to prevent rest or sleep.

Why continue to be so miserable? Why not use a stimulant diuretic to the kidneys?

Use Doan's Pills. Your neighbors recommend Doan's. Read this Bellefonte case:

Gilbert Haupt, Mgr., Weis Store, S. Spring St., says: "Kidney trouble came on suddenly and a dull pain in the small of my back caused many uneasy hours. Mornings I could hardly stoop to tie my shoes. My kidneys acted too frequently and I had a tired, languid feeling. It didn't take much work to make me feel worn-out. After I had used Doan's Pills, from Runkle's drug store, I was rid of the attack."

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There are certain phrases that have come down from the remote past. They live because of their inherent truth. One of these is:

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