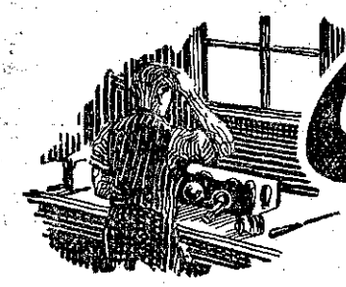

Questions and Answers

B. S.D. (Wanganui): I cannot procure 5-8in. former for the r.f. chokes. I can get either ¾in. or ¾in. former. Can either of these be used? If so, will it be necessary to change the gauge of wire and the number of turns?

A.: You can make the change to suit ¾in. former without altering any of the specifications. You will find that it will do quite well.

2. What type of speaker do you recommend for use with the Advance a.c. short-wave receiver?

A.: Any good quality speaker will do, preferably for tone, a dynamic or an inductor dynamic.

JUST ONE (Otira): Do I have to disconnect the speaker from the set to use phones?—No.

2. How long would I have to use my set on one unit of power?—About 100 hours.

3. Which would be the best short-wave adapter in the 1931 "Guide" to make and fix to my set?

A.: We suggest the super-heterodyne converter, although, if you are not accustomed to construction, you had better get some competent radio dealer to build it.

H.E.R. (Hokianga).—I have a 4-valve set, using the American S.G. valve, but it does not light. However, the set operates just as effectively as before.

A.: This is rather strange, unless the glass of the valve has became obscured. If this is so, all is well, but, if the valve is really done you will find that a new one of the same type will give you better results than you are getting now. It is not surprising that a set will work with a dud valve in the socket. The h.f. current is getting through between the grid and the plate, but of course the valve will not amplify.

SOLDO (H.B.).—I am building the Radiogram all-electric receiver, and would like to know what size transformer to build.

A.: We suggest a 100-watts transformer, for although one of the smaller ones would do, yet by making this size you will have ample to spare in case you ever wish to increase the size of your set.

2. I do not understand how the high voltage secondary turns are computed for full-wave rectification.

A.: The figures given in the "Guide" refer to half-wave rectification. Where full-wave rectification is to be used, double the number of turns on the secondary, and take the centre tap.

BONZO (Masterton).I have a slight alteration to a Majestic set, for I have found that by winding two coils and using these between the aerial terminals, I can get better results from the local switch. However, results with the distant switch are distinctly inferior.

A.: We cannot give a full explanation of this phenomenon unless we knew the model of your set, because the antenna systems of the models vary slightly. It appears, however, that when your gadgets are used on the local switch you are really putting in extra inductance and making for the losses brought about by the local switch. When, however, you go over to distanec and the set is now as it was really designed, you are putting in another inductance that was not intended to be there and, of course, throwing the set out of alignment.

Z. L.D.X. (Palmerston North): Where can I obtain midget condensers of a .00005 straight-line frequency type referred to in this week's "Radio Record"?

A.: Try Ballingers, Wellington, or Johns Ltd., Auckland.

2. What is the principle and how does an electric induction motor work?

A.: The electric induction motor is perhaps most easily understood when considered as a dynamo worked backwards. If a coil of wire is rotated between the poles of a magnet, the flux through it is constantly changing, and an electro-motive force (E.M.F.) is induced in it. If the ends of the coil are joined, a current, which a galvanometer will show to be alternating, will flow. The coil ends are attached to "slip rings" which in turn are attached to the terminals by two brushes. If direct current is wanted, a "commutator" is substituted for the rings. The effect of this is to keep the "brush" voltage always in the same direction, but it still alternates between zero and its maximum valve every half revolution. If the dynamo has a large number of coils following one another round, each will contribute a fluctuating E.M.F., but the maxima will come at different times, so that the total effect is that of an almost constant voltage. As remarked previously the electric motor may be considered as a dynamo worked backwards, i.e., a current is passed through a coil which, because it then has poles, like a magnet, revolves in the magnetic field. When the N face of the coil faces the S pole of the magnet, the commutator reverses the current, and so the coil keeps turning. The above explanation is very simple, but to go into the matter in greater detail will take much more space than, as a subject outside the realms of radio, could be allowed.

3. Are the following aerial turns correct? Aerial 10, grid 30; 25, 22; 30, 32.

A.: No, for selectivity the aerial coils are far too large. Try these for best all-round results: Aerial, 9, 17, 25.

DUO WAVE (Whangarei): I have constructed a four-valve receiver using a three-coil tuner and wish to convert the set for short-wave. How can I do so with a minimum of expense?

A.: A three-coil tuner set is not the easiest thing in the world to convert over to a s.w. set. You must make coils that can be pulled out and put in at will, like valve base coils, but with a set such as the three-coil tuner you would find this difficult. Your best plan is to read up the instructions to be given for the Kestral Three and see how you get on. Rather than convert a broadcast set to all-wave, dismantle the whole thing and use your parts for a special all-wave set.

D.V.W. (Wellington): I have a five-valve neutrodyne set and am unable to tune out 2YA.

A.: Try taking out one of the r.f. waves and you will probably find that the station will still come in quite well, but it will be more sharply tuned than before. Otherwise you will have to use a wavertap. Shielding would probably be effective, although it should not be necessary.

PIAKO (Hauraki Plains): You are referred to "Diagnosis of Radio" for the answer to your query.

SUBSCRIBER (Pahiatua): Owing to out of phase reception here, the Wellington stations are almost useless in the evening, and we have to rely on the more distant ones, which, of course, do not come up to requirements as far as signal strength is concerned. I wish to erect a better aerial to bring these stations in more strongly. Would the addition of a new arm to my "L" aerial be of any benefit? The proposed new addition will make the aerial into a V shape.

A.: We think not. A V-shaped aerial with the lead-in in the centre would be more or less the same as a "T" aerial, and this would be no more satisfactory than the one you already have. Possibly a little more height would be of some value, but the improvement would not be very noticeable. However, try say an extra 10 or 15 feet in height. You could lengthen it out to about 100 feet if you could get the space to extend it in the direction it already runs.

ENVOY (Timaru): What is the capacity of a Ford spark coil condenser?—A.: About 2 mfds.

2. What is the duty and the approximate freight charges on American receivers?