How to Obtain Selectivity

No Need to be Annoyed by the Local

(BY ROY KEITH.)

MANY listeners who live near a broadcasting station find that it is difficult to tune it out and get other stations, and usually blame the station in question. But the fault is not with the station, but usually with the set or location. This may be overcome no matter what type of set or how close it may be to a station, and there is no reason for any listener to have trouble of this description nowadays.

Many crystal users are greatly troubled in this way mainly because of the crudeness of most crystal sets which are usually designed to receive whatever may be on the air.

It is just as possible for a crystal set to be able to tune to any of a number of local stations as it is for any valve set to tune in distant ones without interference of any kind. Any of the three following methods will be found quite satisfactory if followed carefully, and in fact they may be used singly or in combination if found necessary, although in the hands of the writer any one of them alone is quite satisfactory.

Three Types of Rejectors.

THE first method to be described is most satisfactory for a crystal set, and although it may be used for a valve set it is only suitable when it is desired to tune out one local station and tune in another local station, and consists of placing a small fixed condenser between the aerial and the set, the capacity being from .00005. to .00001, or a midget condenser may be used if you have one.

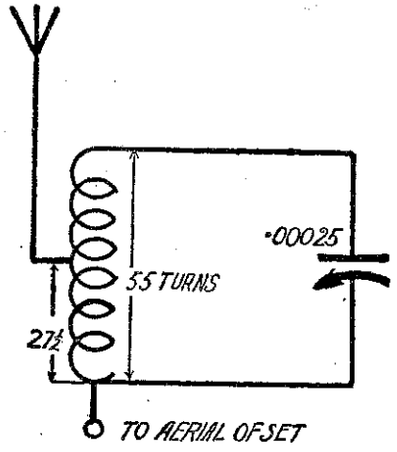
Another method has been found quite satisfactory, and has the advantage of cheapness, which should appeal to crystal users. Take about 10 feet of ordinary lighting flex such as is used on electric lights. Make a knot in each end of one of the wires, making sure that you knot both ends of the same wire.

Disconnect the aerial wire from your crystal or valve set and connect the wire with the knot in it to the aerial terminal taking care of course to first remove the insulation. At the other end of the flex connect the end without a knot to the aerial wire, removing the insulation as before. Proceed to tune in either of your locals when they are both in operation. You will find that the tuning of your set has become much sharper. However, you still get both at once, and cannot separate them. Proceed to untwist the remaining knotted end of the flex from the other, readjusting the set each time you have unwound a few turns until you will find a point where you can tune in either of them separately.

Now fasten the ends of the flex with string so that they will not untwist further, and cut off the end you have untwisted, and no further adjustment will be found necessary, and any number of locals may be tuned in without interference from each other.

The Wave Trap.

THE second method is the use of a suitable wave trap which, if correctly constructed, will enable you with either a valve or crystal set to tune in outside stations as well as other locals without reducing the volume of



the station wanted, while reducing the strength of the unwanted station to the vanishing point. In building such a wave trap a little care must be taken, and although we will not go into the technical reasons here, suffice to say that the proportions given here should be strictly adhered to. Wind on a bakelite former 55 turns of No. 24 D.C.C. wire, making a tap at the 27½th turn (be careful about the 27½th turn), for it is this that makes the success of this wave trap assured.

Connect each end of the coil to the terminals of a good low-loss variable condenser, .0025, which, of course, should be mounted on a small panel of good quality bakelite or other insulating material.

Two terminals should also be mounted on the panel, the lower one being connected to the moving plates of the variable condenser, the upper one being connected to the 27½th turn tap of the coil.

The upper terminal in use is connected to the aerial, which has been removed from the set, and the lower one is connected to the aerial terminal of the set. This trap may be used with any set and will, if correctly built, separate local station 10 k.c. apart and distant from locals 15 k.c. apart. It should be stood at least three feet from the set, otherwise it would be found that there would be coupling between the wiring of the set and the coil of the trap, which, being tuned to the interfering station, would act as a coupling coil feeding back to the set.

When used either close to the set or with some types of A.C. set it is advisable to shield the coil itself, placing it in a can at least 1in. larger than the coil each way, and although this may be a little more trouble it is well worth while.

Other Methods.

An indoor antenna may be used for receiving locals, or the aerial may be disconnected altogether, and in this case no interference will be had from one local station with another, and if the set is tuned carefully the volume will be quite as good as with an aerial.

Especially is this the case with some A.C. sets which derive quite a large amount of pick-up from the power lines, which act as an aerial. However, with some of the latest types of all-electric sets which are well shielded it may be found necessary to connect a couple of feet of wire to the aerial terminal, or a good plan is to disconnect the aerial at the lead-in tube, or to switch the aerial to ground.

Any or all of the methods described will give perfect selectivity and will enable any listener to tune out a local station and tune in either outside or other local stations without interference from each other, and at little trouble or cost to the listener.

Fig. 1 shows the use of a small fixed condenser or midget variable condenser connected in series with the aerial, while Fig. 2 shows how to make a fixed variable coupling with twin flex.

Fig. 3 shows the circuit diagram of the wave trap, and we know that any listener who cares to follow the instructions laid down here will have no further trouble with interference, and will be able to tune in any station he wishes.

The main two things to be remembered are that the looser the coupling to the set the sharper the tuning, and the smaller the series condenser the looser the coupling to the aerial, and with a wave trap always remember that it does not impede but absorbs the unwanted station while having little or no effect on the station required, and one of these wave traps has been used in Auckland a few hundred yards from the broadcasting station, and while all three of the Auckland stations were operating was able to tune in either of them or any outside station without inferference from any of them.

In Defence of "Canned" Music

Views of Eminent English Musicians

A RECENT issue of "The Listener", published by the British Broadcasting Corporation, London, has the following comment on the controversy respecting the merits of radio and gramophone music:—

The discussion in the Press on "mechanical music" seems to be drawing to an end with a distinct score for the gramophone and the wireless. The old gibe about music which comes from a machine and not from a living personality probably dates back to the time when some prehistoric professional singer grew annoyed with the first man who discovered that wind-blowing over a hollow reed produces a musical note!

That particular gibe (though it was revived with the invention of the gramophone) rests upon so obvious a fallacy —for no matter through how many processes "mechanical music" may pass, there must always be a living personality behind it—that it never really carried much weight. The more serious accusation was that the gramophone and the wireless provided such easy music that people would give up playing music for themselves and, above all, give up playing the piano. This was a point put forward by Sir Hugh Allen in his recent address to the Incorporated Society of Musicians, though one must hasten to add that this was only one point in an address which was otherwise very friendly to the gramophone and the wireless.

Sir Walford Davies, as is well known, has long supported the view that the proper use of "mechanical music" is extremely stimulating to music making. He draws a careful distinction between the desire to listen to and the desire to interpret good music. The satisfaction of the one does not reduce the other. These, however, are theories, and it is interesting to notice that a hard fact has been introduced into the debate, and from a source unlikely to be prejudiced in favour of the wireless and the gramophone.

In a letter to "The Observer" of recent date, Mr. R. H. Tatton, writing on behalf of the Federation of British Music Industries, says that at the present day there are far more pianos being sold than ever before in the history of music making. He concludes his letter by saying that "in the opinion of this federation both the gramophone and the wireless have enormously served the art of music making by pianoforte and otherwise." That, at any rate, seems fairly definite.