

Our Crystal Corner

By "Galena"

Crystal and Catwhisker.

WHAT is the best crystal and whisker combination to use in a set? asks "Crystal" (Wellington):

A fine grained galena crystal with any coiled catwhisker wire. The advantage of one type of wire from another, within certain limits, is negligible. Thus a gold wire is little to be preferred to a copper one, but there are certain observations as in the following:—

A catwhisker of almost any metal pressing upon a crystal will produce results of a sort, but it is useless to expect the best unless a really good and suitable one is employed. It will be found that much better and more permanent results are obtainable if gold, silver or one of the special alloys is used for making contact with the crystal. Copper and brass will give good results so long as they are clean and perfectly free from tarnish, but they are really more trouble than they are worth, since the point must be perpetually brightened. The other metals mentioned are more or less non-tarnishing.

Catwhiskers should also be light and springy, hence only a very slender wire should be used, and it should not be scratched across the surface of the crystal, since in this way the sensitive points are destroyed. The object should be to lower the point straight down upon the surface and if this point is not suitable, lift it and lower it on to a fresh point.

The Crystal Valve.

"A.G.B." (Brooklyn), who is using the "A.Crystal and Valve," wishes to know if the crystal is dismantled from the set, should signals be heard.

ANSWER: Unless they are loud, they will not detract from the efficiency of the set. Where this set is being used close to a powerful transmitter, a certain amount of rectification will take place with the most carefully constructed amplifiers of this type. Suggestions to offset this were published previously.

I am using a 4-vaned variable condenser. Is this large enough, or should I place a fixed condenser in parallel with this?

ANSWER: The capacity is not sufficient, and a fixed condenser of at least .0004 would have to be placed in series with it. This, however, would very much limit the tuning range.

I cannot cut out 2YA. Is this to be expected?

ANSWER: Yes. 2YA is rather too powerful to limit to a short range of the tuning condenser of the 1-valve set.

Would the double grid valve be suitable for this set?

ANSWER: Yes. Either A141 or A441. The pentode would not be suitable, and the running cost would be too high.

Should there be any hand capacity when tuning?

ANSWER: No. If there is, reverse the connections to the condenser.

The Full Wave Variometer Set.

"X.Y.Z." (Wellington) writes: "You state in reference to the 15 turns on the stator, 'Connect one end to the aerial and the other to the primary winding of the other variometer.' Is it meant that there are an extra 15 turns on both stators?"

ANSWER: Yes. By primary is meant the extra 15 turns on each stator.

I have tried many times to get full wave results, but have always been unsuccessful. I have not tried the two carbondums. Are they likely to be matched, for I have read in an American magazine that full wave rectification with a crystal is impossible, because of the difficulty of getting two matched crystals.

ANSWER: If the correspondent has not tried carbondum crystals, there is no wonder that he has not been successful, for it is absolutely essential that permanent crystals be used, for if the catwhisker or other contact is not at the most sensitive position full wave rectification cannot take place. The following letter from an English magazine seems rather to be of a different tone to the American.

Full Wave Rectification.

IT has been stated by one correspondent that full-wave rectification is impossible because of the impracticability of perfectly matching two crystals, but the following letter from "Popular Wireless" is a contradiction of this statement: "Dear Sir,—It is an amusing fact that, almost invariably, when a reader writes to 'P.W.' on the above subject, he preambles with information to the effect that though the owner of a multi-valve set, he occasionally 'plays about,' or 'messes with' a crystal, to entertain the kids, or kittens, or because his grandmother is afraid of an explosion in a high tension battery. May I, therefore, on behalf of less ashamed, or apologetic crystal users, herald the fact that I abandoned the valve for the 'humble crystal' six years ago, and that 'since then' I have never regretted it? I must add that this amazing act is greatly due to 'P.W.' which, at the time, published a method of using two crystals as rectifiers. Unfortunately, this method was technically damned in the following issue by a destructive critic. Six years' test has, however, more than vindicated the 'P.W.' invention. The circuit in which the twin crystals are employed has never been published, and never will—because it is too good to appear true.—Grand Knight of the Whisker."

Poetry Competition

STATION 2YA has received a total of 50 entries in connection with the Poetry Competition. The judges' report and the names of the winners will appear in next week's issue.

D.X. News

New Stations.

MR. DUDLEY HUSTON, Timaru, writes:—

I was fortunate enough to log two apparently "new" Americans last evening, Sunday March 3, which both came through at loudspeaker strength.

KMA, Shenandoah, Iowa, was the first to be received, and he came in just a fraction above KWFB, in fact the two stations were heterodyning to a certain extent. Just a degree above him I logged KFEL, Denver, Ohio, who was also "colliding" with KOIN, Portland, Oregon.

It was certainly a "night out" for the Americans, and even RFI, Los Angeles, on about 450 metres, was coming in at fair volume.

New American Logged.

FEBRUARY has been a wonderful month for DX hounds, and I am sure there will be some record receptions coming to light, if the same conditions continue. This applies particularly to the Americans, some of them have come through with astounding volume. KFI, on late frolic, on the 3rd, audible 50 yards from loudspeaker. The "Aussies," too, are being received at good strength from 8 o'clock most evenings. 7ZL and 5CL have attained loudspeaker strength. The Japs. have been rather patchy, with JOAK and JOHK at loudspeaker strength occasionally soon after 9 o'clock.

The station "Kauspanka" queries is most likely KGJK, on about 260 metres. This station was fair strength on Saturday evening. The following are new loggings during the month:—

KMIC (267), KSL (265), KJR (309), KTM (380), KFWE (316), KFOX (240), KMOX (277), WBBM (385), KFRG (492), KFWM (325), KFSD? (500), 3DB (253), 4ZO (277) and what sounded like KFNF, "Shenandoah, Iowa," on 329 metres. "H.P.G." and others will find that the Americans will fall off considerably in volume as we get into the winter months; that at least is my experience.—W. E. DAVIES (Picton).

Experience With the S.G. Browning-Drake

A CORRESPONDENT, "Screen Grid," has been experimenting with the types of Browning Drake, and his results are as follows: With a high impedance valve (199 type) as R.F., his results were weak. Using a lower power impedance valve (201 type), and a phasatrol stabiliser, the result was much better. He found the 3-coil shielded model very good, but it gave rather much trouble, but the screen grid was excellent. Using a push pull amplifier with two power valves, he states that nothing could be better for clarity and volume. With this model he worked Australian stations full loudspeaker strength during all February.

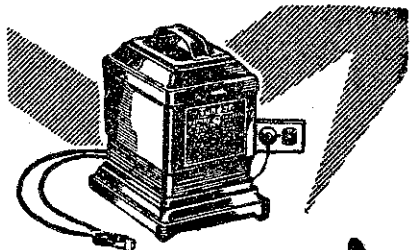
VIOLENT and uncontrollable oscillation on a short-wave set is very often due to the fact that the high-frequency choke and the reaction condenser are setting up an unwanted tuning effect (the easiest cure is another H.F. choke).

Australian License Figures

THE position as regarding licenses in Australia is a very interesting one. At the present time, there are 289,000 odd licenses issued, representing a percentage of 4.6 for the Commonwealth. This is an increase of 277 during the month of January. The highest ratio is in Victoria, where 8 per cent. of the total population listen in. However, during the month of January, the number of licenses in this State dropped 597, making the now existing total just over 141,000. South Australia is next with a percentage of 3.88.

As in New Zealand, the licenses are now falling due, and warnings are being issued to listeners to renew their licenses immediately, and not allow through neglect, Court proceedings.

FOR a sensitive long-distance set it is often an advantage to use a variable condenser as a grid condenser, provided that this does not necessitate long wiring.



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