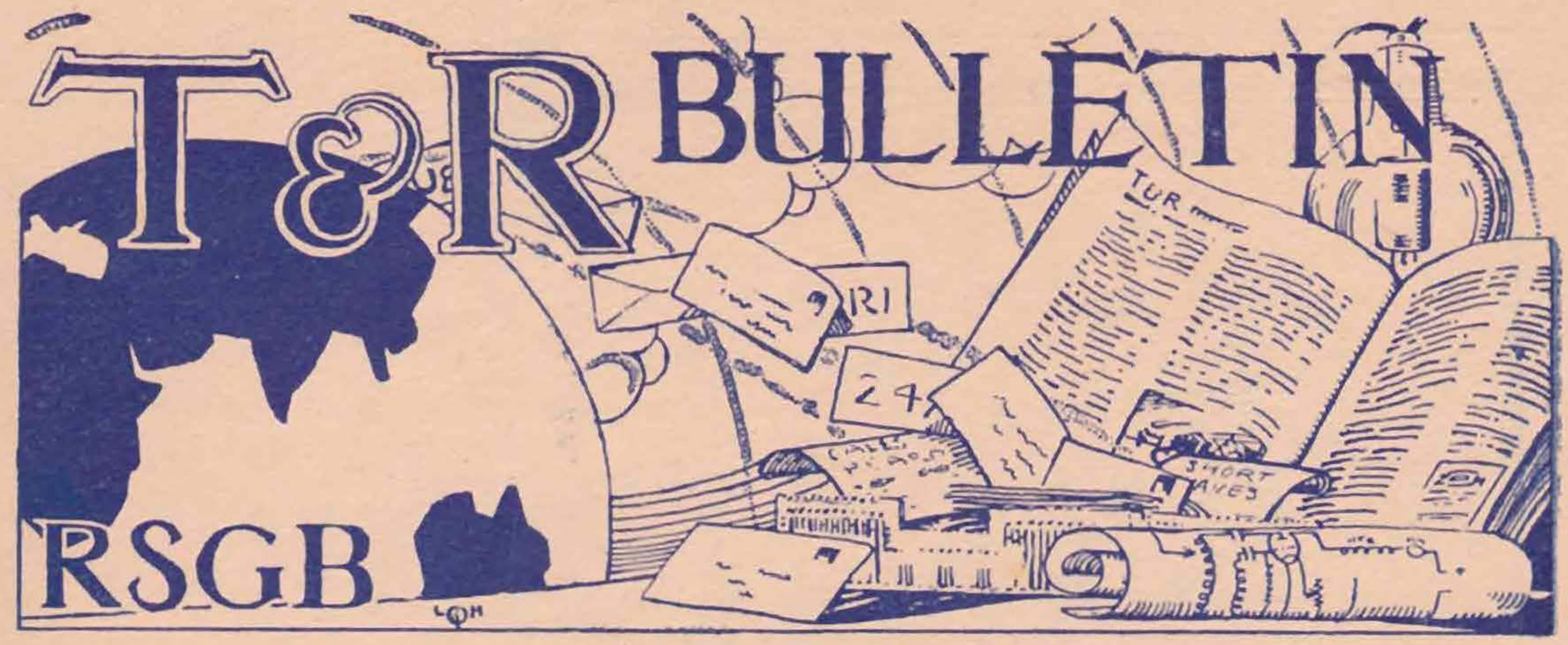

No. 10. June, 1926. Price 1/-

T. & R. Bulletin

Devoted to the Interests of the Transmitting Amateur

— The Official Organ of —

THE TRANSMITTER AND RELAY SECTION

of

THE RADIO SOCIETY OF GREAT BRITAIN,

53, Victoria Street, S.W.1

The EDITOR will be glad to receive articles and illustrations within the scope of the BULLETIN. The illustrations should preferably be double size and should be original. Contributions should be addressed to 53, *Victoria Street, S.W.*1., *and marked EDITORIAL, ADVERTISEMENTS, Etc.*

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The T. & R. BULLETIN IS SENT POST FREE TO ALL T. & R. MEMBERS.

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T. & R. BULLETIN

The only British Wireless Journal Written and Published by Amateurs

JUNE, 1926. No. 10

EDITORIAL

WHAT OF THE FUTURE?

FOR a long time past the position of the experimenter in this country has been a difficult and precarious one. Many of my readers will recollect the struggle which we had after the Great War to regain for the amateur the privileges which he so willingly gave up on the outbreak of hostilities. Again, many of us can call to mind the yeoman service performed by these amateurs in forming the nucleus of the signal services which had to be created in order to keep the temporary forces in touch with their different headquarters and bases at the front. The regular signal service was unequal to the task, totally inadequate in fact, and were it not for these amateurs who turned professional at a moment's notice, our communications would have taken many months longer to perfect. In view of these circumstances, we who were in the know wondered at the tardiness displayed in official quarters to reinstate the status of the amateur.

Since the advent of broadcasting the position of the amateur transmitter has been very critical on many occasions. In the early days especially, those who were in close touch with the negotiations which were set afoot in order to retain his facilities, had every cause to view the position with the utmost gravity. Even up to a couple of years ago it seemed that the octopus fingers of the newly-inaugurated service would so extend that the hours during which the amateur could carry out his tests would be limited so that it would be impossible for him to find time during normal hours to perform even the most simple of experiments. The official attitude was that he was perfectly entitled to work at any time as hitherto, provided that he used his licensed wavelength and power. This is all right in theory, but owing to the fact that nearly every transmitter has a neighbouring BCL, and in view of the fact that the P.M.G. encourages these people to lodge complaints of "interference," even though very elementary and untunable apparatus is used by them, the transmitter speedily finds that he cannot work the licence for which he has paid until after midnight. Many transmitters have received official letters informing them to this effect, and have been reminded by the P.M.G. that they are in the minority, and that therefore they must work as far as possible outside broadcasting hours. Needless to say, that if experimenters as a body did not take this official tip, we should probably find that the official foot would be placed very heavily on existing facilities. These very unsatisfactory terms have perforce to be endured despite the fact that in almost every case of alleged "interference" investigated by the writer the grounds for complaint were very thin, principally owing to the fact that very crude apparatus was used by the complainant. One is generally informed that the apparatus is that which has been recommended by one or other well-known wireless journal, and that therefore it is sufficient. This is, of course, the view put forward by the complainant. We hope for better times to come, but for the time being we are compelled to accept the inevitable.

For a long time past, prior to the advent of the BULLETIN, we were without a transmitter's paper, and this is mainly owing to the fact that those who at one time catered for the experimenter have found that the BCL is a far better source of revenue and have therefore changed their policy in order to suit their pocket. We can hardly blame them for this, for a commercial paper has to study the majority of its readers, otherwise it would cease to exist. The loss to the transmitter was great, for it is a serious matter for any section of the community to lose its only source of publicity at a moment's notice.

We have several important matters under our notice which seem to call for careful consideration. The rapid growth of the number of unlicensed transmitters, which we believe has been aggravated by the present unsatisfactory conditions under which transmitters work, is one of these. Whether or not they deserve sympathy, we are not at present in a position to say, but when these people deliberately use the call signs of our own members, we must "sit up and take notice." There are many reports to hand concerning unlicensed transmitters who not only work without a licence, but who also bring the amateur into disrepute by working during closed hours and on wavelengths not normally allowed for experimental purposes.

We do not know what the future has in store for us, but the present position is as outlined above, with the exception that this Section is a very virile body and now has its own publicity organ, the T. & R. BULLETIN. The Section is growing in strength at a very rapid rate, and the inauguration of the QSL Section has done much to bring it into favour with many transmitters who had not hitherto heard of its existence. It is rapidly becoming strong enough to be an important factor, and one which must be considered very seriously when the question of wireless regulations

(*Concluded on page* 10)

QRA and QSL Section.

WE are pleased to be able to announce that arrangements have now been completed by this Section, whereby members' QSL cards for American amateurs, *when QRA's are unknown*, will be forwarded if sent: c/o Executive Headquarters, A.R.R.L., Hartford, Connecticut, U.S.A.

It now appears that the troubles of the Dutch amateurs have blown over for the time being, and cards may now be forwarded, if all sent under cover, to: I. A. R. U., Hoogduin, Noordwijk aan Zee, Holland. No addresses should be put on the cards, even though they may be known.

Danish amateurs are at last receiving official recognition, and the following stations are now licensed: 7AA, 7BJ, 7BZ, 7CF, 7GL, 7JM, 7JS. Cards for any other Danish transmitters should be sent under cover for the present.

In reply to many queries for a good Call Book giving U.S.A. and Canadian QRA's, "The Citizens' Radio Call Book, Amateur Section," is a very comprehensive publication, and can be obtained from: Citizens Radio Service Bureau, 508, South Dearborn Street, Chicago, Illinois, U.S.A. (Post free, price 85 cents.)

We are indebted this month to G5KU for his services to this Section with the typewriter, and we shall be glad to know if any member can help us with a duplicator, should an occasion for its use arise!

WE BEG TO REMIND YOU:—

A stamped postcard or envelope should accompany all queries to this Section requiring a reply—

* * *

Much time and trouble can be saved the various QSL bureaux if members will forward cards direct when QRA's are known—

* * *

In all correspondence with this Section, please put your call sign after signature—

* * *

The facilities of the *QRA and QSL Section* are covered by membership of the (*T and R*) *R.S.G.B.*, and an additional subscription is not asked for—

* * *

Cards for Belgium and France should reach the Section by Wednesday in each week—

* * *

Cards to be QSR to unlicensed amateurs abroad should be accompanied by plain envelope, stamped to reach destination at letter rate.

Important!!!

Whenever cards are sent *anywhere under cover*, no address must be put on the cards; simply the addressee's name or call sign only.

QSL's Waiting.

Will all members who have not already done o please forward stamped addressed envelopes for any cards that may be here, or subsequently arrive!

QRA's.

2BQU.—(AA) R. Warrener, "Inwood," 3, St. Mary's Road, Tonbridge.

2BRH.—(AA) E. Harvey, 28, Cowley Street, Derby.

2KA.—B. Hodson, 31, Broomfield Avenue, Palmers Green, N.13. (2nd op. to G2WJ.)

6OO.—T. Woodcock, "Santos," 8, George Street, Bridlington, E. Yorks.

6UG.—H. Dean Poulton, 18, Albion Street, Cheltenham.

6ZD.—S. Smith, 14, Hatters Lane, Berwick-on-Tweed.

6ZJ.—C. R. Hunt, Kensington House, Church Street, Sheringham, Norfolk.

G—AKC.—Army Call Sign. Reports to W. D. Horniman, Virginia Water Cottage, Sunninghill, Berks.

T—PAI, T—PAJ, T—PAV, T—PAX, etc.—Reports: c/o Radio Amator, Wilcza Street, Nr. 30, Warsaw, Poland.

Changes of Address.

5QV.—"Kingsmead," Lancaster Gardens East, Clacton-on-Sea, Essex.

6BR.—Overdale, Ilkley, Yorks.

6TD.—"Meadowlea," Gobowen, Shropshire.

QRA's Wanted.

G—2FO, 2NX, 5DA, 5IH, 5NM, 6BR, 6GG, 6JH, 6ZM; HVL; N—TAF; R—2RPO; PI—CD8; and all new stations, please.

G6BT,
(T. & R.) R.S.G.B.
Bury, Suffolk.

To Lessen Interference.

BY J. A. J. COOPER, 5TR. (*Hon. Editor*).

WITH the Q.R.M. at present prevailing in the ether during busy hours on 45 metres, we are sometimes hard put to it to find a remedy for the exasperating condition of affairs which nearly drives us in desperation to "hit the trail" for the good old 150-200 metres wavelengths. The short waves are of themselves naturally selective if a pure C.W. carrier wave is used, but as there are so many stations which use but a poor pretence at pure C.W., and there is such a miscellaneous assortment of notes as a consequence intermingled with a weird assortment of "spacing waves," even the naturally selective properties of the 45-metre wave leaves much to be desired, and we yearn for something more comfortable to use. Vague references are sometimes made to "note tuning," and whilst this may be carried out to a certain extent by the aid of the reaction effect on the receiver, no serious attempt seems to have been made to utilise this rather valuable stunt to its full advantage. Proper note tuning can only be effected after rectification, in other words, we need a filter circuit and this entails the use of an extra valve which does little or no amplification to the signals.

In order to tune a note properly, the usual iron core low frequency intervalve transformer generally used in low frequency amplification is out of the question. If the detector is followed immediately by an iron core step-up transformer with a flat peak all notes or audio frequencies will be amplified in equal proportions (theoretically). Should we use a transformer which has a peak frequency of 800 to 1,000 cycles, such as are sometimes advocated, we shall only secure maximum amplification of these frequencies. Moreover, we shall amplify all signals having these frequencies arriving on the grid of the detector. Many wanted signals will have one of these frequencies, but unfortunately

there are many which will have a lower frequency. In order to reach our ideal we are therefore forced to tune the stage following our detector unit.

We may therefore follow the detector valve with an air core transformer which may be tuned by a large capacity variable condenser to the frequency of the desired signal, during which process the unwanted signals will be reduced in strength so as not to be unduly self-asserting. The transformer may be wound on a bobbin as shown in Fig. 1 and the secondary coil may be put on first. The inductance of this is approximately eight and a half Henries, and it consists of about 13,000 turns of number 34 D.S.C. wire. This is tuned by means of a .01 mfd variable condenser as stated before. Many ex-Government condensers of this type are at present available for a few shillings.

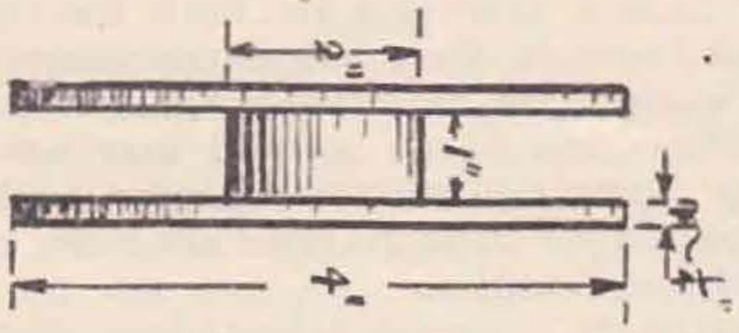


FIG. 1.

The primary coil is wound directly over the secondary, a thin layer of oiled silk intervening between the windings. It consists of about 2,000 turns of the same gauge wire. The primary is not shunted by a fixed condenser.

The circuit diagram used is shown in Fig. 2, although any other circuit will work with the note filter unit. The last valve stage is coupled to the receiver by means of an ordinary "flat peak" intervalve transformer. The scheme is, of course, hopeless for speech or musical frequencies, but the "ham" receiver will find it of considerable advantage to be able to tune his notes in this manner, and some strength will be experienced in the moving power of tuned notes if the system is used.

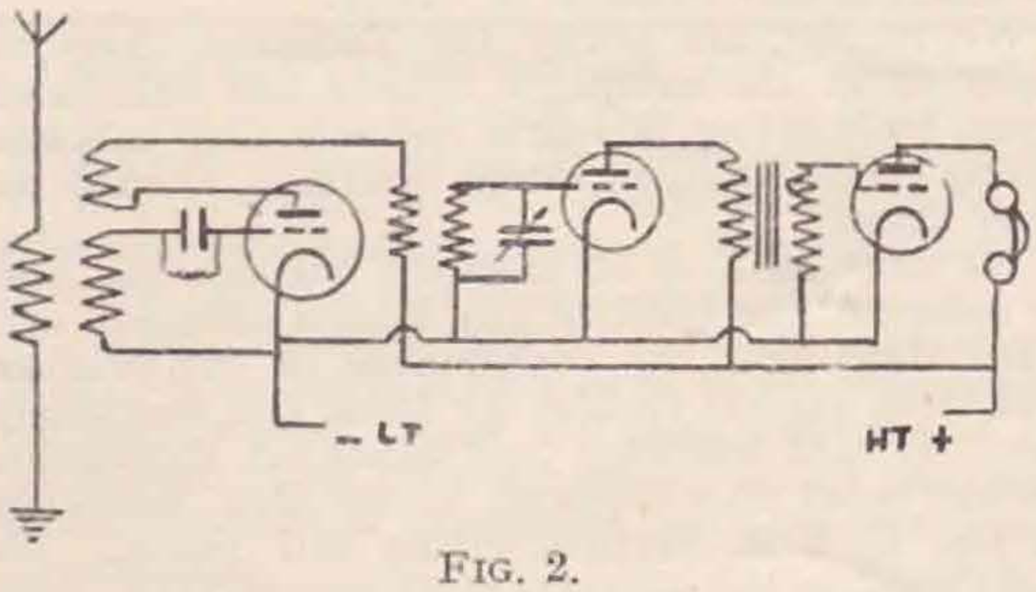


FIG. 2.

There are two main disadvantages in this system which I dare to introduce to readers as something new in telegraphy reception. First, an extra valve is called for, and, secondly, it is extremely selective to notes of different frequencies, with the result that an extra complication is introduced into an otherwise simple receiver. These are more than counterbalanced, however, by the fact that the user of the filter system gets rid of a lot of static and reduces the strength of unwanted encroaching signals to a minimum. with the result that once he has tuned in he is able to work in comfort.

For QRP Stations Only.

By GI-6YW.

AFTER enduring that "pent-up" feeling, with a one-valve short-wave receiver, for six months, I decided that I, too, must have the "tnx fr QSO" feeling, and consequently applied for a licence and police permit.

My finances were, and always are, very limited; I had no supply of power, and very little time to construct a transmitter. Besides, I had to carry my accumulators for a 10 minutes' walk for recharging. I was, as we say here, in "swithers" about my future "aether-crusher." I eventually bought a 2-volt valve (PV6DE), a variable anode resistance, a couple of variable receiving condensers, a milliammeter, a hot-wire ammeter (never needed!), a few fixed receiving condensers, and an ex-Govt. key.

About this time 5NJ began to look very nervous and haggard, and I was told that he had fitted a "reverse energy" relay in his aerial circuit. By the way, it's his fault that I am writing this, as he says you will be interested, but I believe he only wants me to leave the country in disgrace and permit him to remain the star Irish station. However—I got an aerial and cpse hung in everyone's way, and bored two lead-in holes in the window-pane with carborundum powder and Sloan's Liniment. (It's a fact—FB lubricant fr glass!)

Time did not permit of my having a transmitter built before my licence was rushed to me! So when it arrived, I hooked up the parts as they lay on the table, with pieces of wires twisted round the valve legs, etc.; 200 volts of flash-lamp cells were connected to the Shunt Heath-Robinson circuit, and this gave 2 watts input. After tuning the LC aerial circuit so as to radiate on a 3rd harmonic (45 metres), I sent a test call and, to my surprise, 2XV answered. I was not prepared for QSO (no—am not a Scout), and had no pencil or paper. (Sa, 2XV OM, your call is still on the table in ink!) I tried again, mit pencil, etc., and was QSO two more G stations. Since that day, December 19, 1925, I have been QSO with about 90 G stations with the same arrangement and power. Many of these stations were worked without cpse, E, or Hertz; I connected the aerial to the plate turns and "got over" much better.

The BCL's were very polite, but do not understand our valuable efforts in the cause of science!

My first F station could not speak English, a rare thing in F stations, so I tried my French on him. Now, my French gets very QRZ in places, and one of those places suddenly appeared in the middle of a sentence. I held him with "AS AS AS . . . to nth place" until I called Mrs. 6YW, who (when she had recovered!) put me right, and I wonder if that F suspected? What did he say "Hi" for?

Then I worked (English or American only now) Sweden, Holland, E. Prussia, Germany, Spain, and Belgium.

Then I was fortunate in "raising" and working PR4SA one night in reply to my "test" call. He gave me R4, and we were QSO for a half-hour. Immediately afterwards I called CH-3IJ (I have kept this quiet until now), but my 2 watts must have got entangled in the Saragossa Sea. The greatest asset to a QRP station is cheek!!.

(*Concluded on page 7*)

The Hand and Hertz.

By G5YM.

NO, OM, the "Hand and Hertz" is not the name of the pub which 5TR is going to start when—may it be a very long time—he retires from the editorship of the *Bull.* It is just to draw your attention to the fact that I have been trying to get good results from an hand generator on 45 metres, and have, more or less, succeeded.

The original troubles were: (1) Very bad note; (2) wave changing due to changing speed of turning; (3) chirp on keying, due to having key in negative power lead to make turning easier.

The very bad note was found to be due to broken brushes and broken connections to the brushes. This Messrs. Evershed & Vignoles, Ltd., generously put right free of charge, though the cause could not be determined and did not seem to be due to any fault in manufacture. Reports now vary strangely. I am told that my note is "pur dc.," "semi-rectified dc.," "Accw" and "rac," all without any changes at all in the outfit. This is evidently due to something outside the generation.

Wave changing has almost disappeared since the Hertz aerial was sharply tuned by cutting it and inserting a lamp in series, as recommended by 2SZ in the February *Bull.* Those who want to use the series lamp can easily do so by procuring one of those little gadgets used for testing flash-lamp batteries. They consist of hinged legs like a pair of compasses, with the lamp holder in the middle. One leg is insulated from the other and connections for the two sides of the filament are made to separate legs. If the ends of the legs are drilled, terminals can be fitted for experimental adjustments, and then the wire can be soldered when the middle point has been found exactly. A shorting plug can be made from a "dud" lamp and used once the adjustments have been made.

The Hertz aerial certainly seems to act OK as a master oscillator, and now I only get reports of slight and regular QSS as the handle is revolved.

The chirp on keying has been done away with by removing generator and key as far as possible from the apparatus, and inserting a relay in the aerial lead. This relay is the familiar "Weston," and seems to act very well on the Hertz with low power. It is actuated by a single dry cell and takes practically no current.

Keying in the aerial means that the load is on the valve all the time, or, any rate, a great deal of it. This makes the labour of turning very hard. The labour is reduced by feeding to a high impedance valve, and using a valve of considerably higher rating than the power delivered. But still it is hard work, and the output of sweat has to be balanced by an input of drinks. 5WV tells me that he treadles his generator with an old sewing machine. This should be very good business, as the big wheel of the sewing-machine would act as the very necessary fly-wheel, and the inevitable slip would help in keeping the speed constant. I am going to try that myself.

But I hope for even better results from crystal control, feeding the crystal controlled valve from dbs. and amplifying with a valve fed from the generator. Unfortunately, so far as I can see at

(*Concluded on next page*)

Unlicensed Transmitters.

A Warning.

One startling result of the formation of our new QRA and QSL Section is the large number of cards we have received for unknown stations. While we are open to hope that not a few of these are genuine mistakes, we know only too well that others are the self-adopted call signs of the illegal transmitter. We were aware that a few black sheep existed in this respect, but we hardly expected to have evidence in this form of such a large number of transgressors. This fact is extremely disquieting to us, as the whole position of experimental transmitters in general is thus being jeopardised by these infringers of the law.

We are compelled, therefore, to issue a serious warning to all our members, which we trust they will pay careful attention to, both for their own sakes and those of their fellow transmitters.

As a Section, we must treat these offenders as strict outlaws and on no account may we work or have any communications whatever with them. Cards received for these stations are being carefully tabulated and retained.

Any properly licensed transmitter who knowingly works with an unlicensed station or one contravening the rules of his permit by working upon a wavelength unallotted to him, runs a serious risk of getting his own licence revoked.

The same remark refers to working with stations using the three-letter call sign of the "artificial aerial" worker, who obviously should not be radiating under the terms of the licence issued to him.

We are also anxious to prevent our friends abroad sending out cards uselessly in this manner, where obviously no reply could be expected. We therefore ask all listeners abroad not to send cards to stations whose call sign does not appear in any of the recognised lists or where proof is not given that the station calling is working under full authority. Many lists are available published by the Technical Press, while a list of all T. & R. members is also about to be issued.

We, further, are asking the Technical Press to assist us in the campaign against the unlicensed pirate by inserting this same notice in their columns asking their contemporary journals abroad to copy same.

We trust all T. & R. members will do their best to ascertain the QRA of any known offenders and warn them that the continuance of the practice will mean serious trouble for them and everybody else. If such warnings pass unheeded, the station should be at once reported to the Hon. Secretary of the T. & R. Section, giving full details. We shall then, in the interests of all our members, take the most drastic steps to deal with the offenders.

It should be also remembered that the Post Office officials are constantly on the watch for transgressors, and it must not be thought that silence on their part signifies that they do not know what is going on.

With the new facilities granted to approved T. & R. members for short wave permits, there is no reason why any should transgress. We want to obtain transmitting facilities for all genuine experimenters who will abide by the recognised laws of the ether. Therefore, we ask all unlicensed

(*Concluded on next page*)

SUPPORT YOUR SUPPORTERS.

I.A.R.U. Notes.

T. & R. members who are not members of the International Amateur Radio Union can obtain particulars of membership from the Hon. Secretary (British Section), I.A.R.U., F. A. Mayer. (G-2LZ) "Stilemans," Wickford (Essex).—It is up to every amateur to join this important organisation. There may be slight delay in forwarding particulars, as we are awaiting a supply of copies from headquarters.

2LZ will be pleased to receive DX notes and other information of an international character to be included in a monthly report which is published in "QST" under I.A.R.U. Notes. The DX notes must concern actual two-way working with other countries. They must be received by the first day of each month.

S.O.S.

5YM would be glad and obliged if some fellow member of the T. & R. Section could let him have a diagram of the connections of the 100 watt T.V.T. Unit. This is the one with the balanced vibrator. The connections required are those from the four-plug sockets of the vibrator to the chokes and transformers.

For QRP Stations Only—*Concluded from page 5.*

I was requested by 2CC one day to reduce my power, and was still QSO on 0.035 watts. This is due in a great measure to the pure dc note from DB's. I have tried a left-hand generator but without as good results, as the note is not pure, and the length of transmission never approaches the 10 minutes' limit!

By putting the secondary of a T.V.T. unit in the H.T. positive, and using the unit as a microphone transformer, I have managed to get speech to most parts of Britain on the same 2-watts input. The modulation is poor, but the quality fairly good.

I don't suggest that these results are startling, but they may encourage some enthusiast as poor but as keen as myself.

Now, blame 5NJ!

Unlicensed Transmitters—*Concluded from previous page.*

workers to refrain from transmitting and join the T. & R. Section. Your committee will carefully consider your case and do their best to obtain for you the facilities you seek.

It may be added that the T. & R. Section will shortly issue transmission rules to be observed by all members, and these will form the basis of the agreement made between ourselves and the Postmaster-General in connection with all our recommendations. H. B. S.

Hand and the Hertz—*Concluded from prev. page.*

present, using a harmonic of the crystal controlled valve will necessitate three valves, and there are great difficulties in grinding a crystal to give 45 metres oscillations direct. So far I have only had one crystal—obtained by the good offices of "Sec —who seldom sleeps," and this did not choose to obey the rules and had to be ground so thin to get it down to 92 metres that, taking it further was out of the question. I hope to have another before long that will behave in a more normal manner. Then, perhaps, things can be done.

An Excellent Receiver.

By W. HARTLEY (G-6YR).

THE writer, quite recently, owing to domestic QRM, and from an expense point of view, had occasion to design a receiver for use on all waves from the lowest "ham" wavelength up to, and including, 1,600 metres, and it is hoped that the following details and lay-out may be of interest to others.

Of course, the monetary advantages are obvious as well as the convenience of such an arrangement, it being quite plain to see that, to have separate receivers for the 23 metres to 200, and 200 to 1,600, would entail at least two sets with the consequent double expenditure.

A three-valve receiver (0-v-2) was decided on, and the whole set is housed in a cabinet 15in. by 6in. by 6in..

The coils are mounted on ebonite strips with wide spaced pin-plugs and fit into a special three-coil holder of low-loss construction, as will be seen from the sketches (Fig. 1).

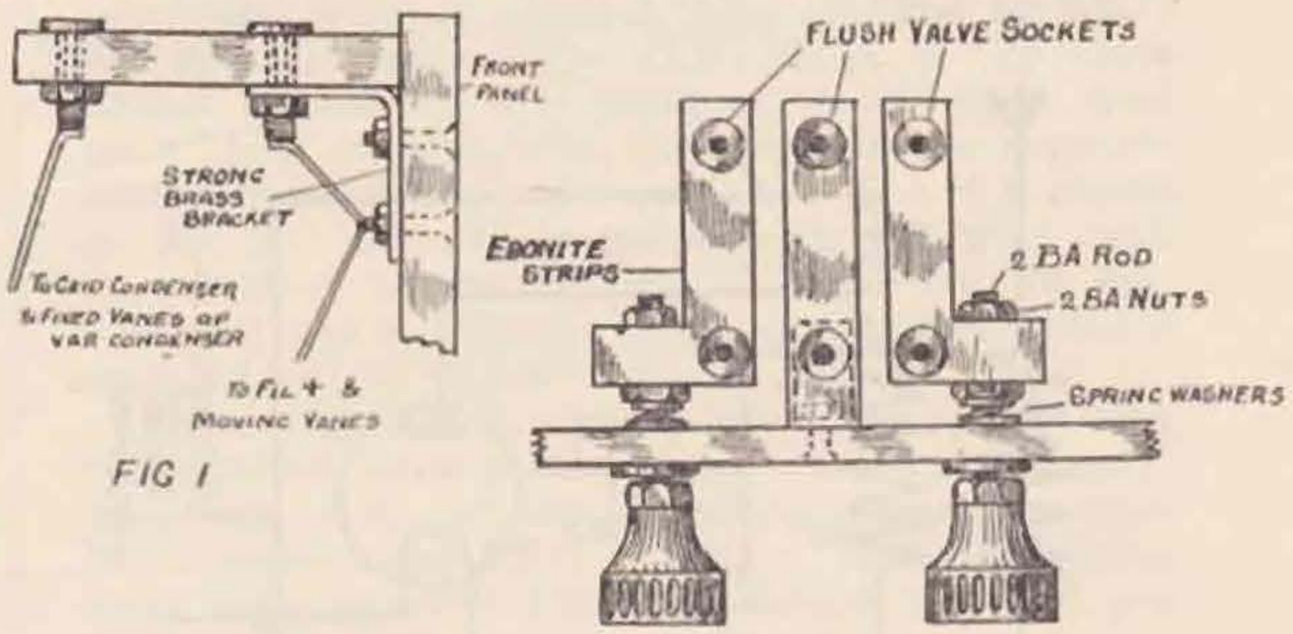


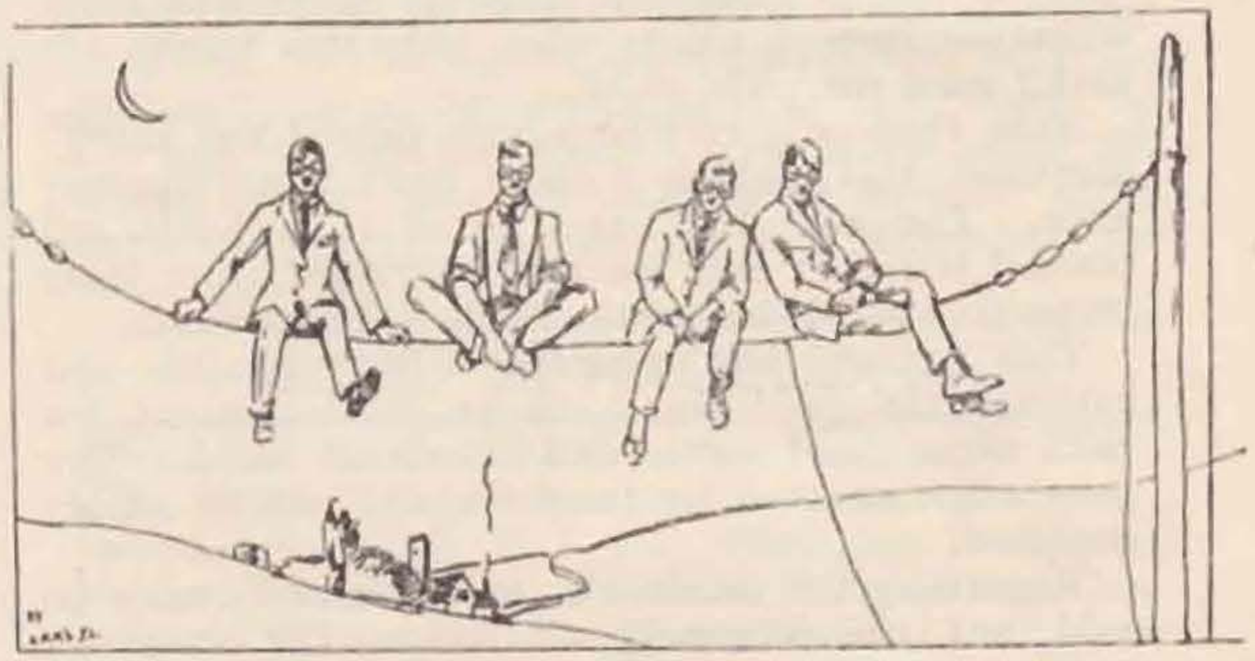
FIG 1

The valve-holders are baseboard mounting porcelain type.

According to what variable condenser is used, the number of turns for the various wavelengths will vary. A .00025 slow-motion low-loss condenser is used in this set and is small enough for the short waves and big enough for the broadcast band.

Elimination of overlap, special attention to low radio frequency potential parts of the detector circuit being nearest the operator's hand, and arranging the three inductances as per Fig. 2, give exceptionally easy control on any wave.

Fig. 3 shows the usual detect or circuit, and special



O.W.L.S.

notice is drawn to the fixed condenser .0005 placed across the primary of the first transformer, the H.T., *and the L.T.* This makes for stability of regeneration no matter what condition, within reason, one's batteries are in.

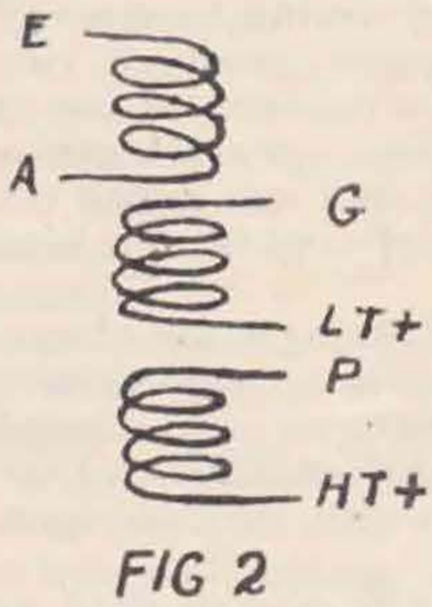


FIG 2

The special feature of the set is the low-loss construction of the detector end, and the wiring for that section only is shown (Fig. 4).

The design is, in the writer's opinion, only open to one criticism, i.e., If the lid is required to be closed, the coils must be taken out, but this is really a minor point. No trouble whatever is experienced with mechanical vibration of the coils, these being very carefully constructed. Lorenz type are used for the short waves (a nine-turn grid coil covering from about 30 metres to 100), and scramble wound coils are used for waves above 200 metres (a 54-turn coil covering from 250 to 500).

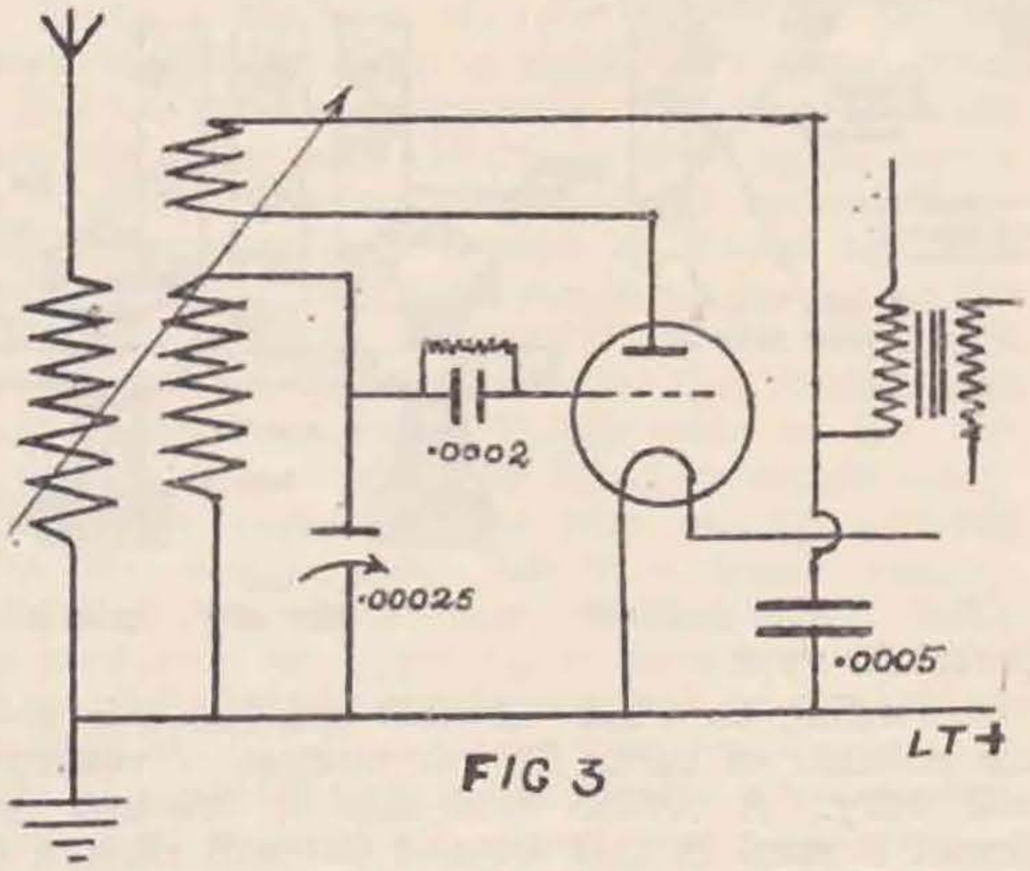


FIG 3

A quick change over from two valves to three is accomplished by the use of jacks, the last one also making and breaking the filament of the third valve.

Two D.E.3's and one B6 power valve are used, and dry batteries (three volts) supply the L.T.

The transformers used give exceptionally good quality telephony on all waves, and the highest ratio is placed next the detector to benefit from whatever step-up exists when only two valves are being used for code work.

Note that only two terminals (aerial and earth) are used, this making a clean front panel appearance. The two L.T. and three H.T. leads are plaited together and are taken straight from their respective points out of the back of the cabinet.

This receiver has been found very flexible and satisfies the need for a really good receiver for both ultra short waves and broadcast band. Any points not covered by the foregoing will be gladly supplied.

Regarding the receiver's performance, it may be said that it is extremely selective on the broadcast band, and of course is really " the goods " on the shorter waves. All the usual amateur trans-

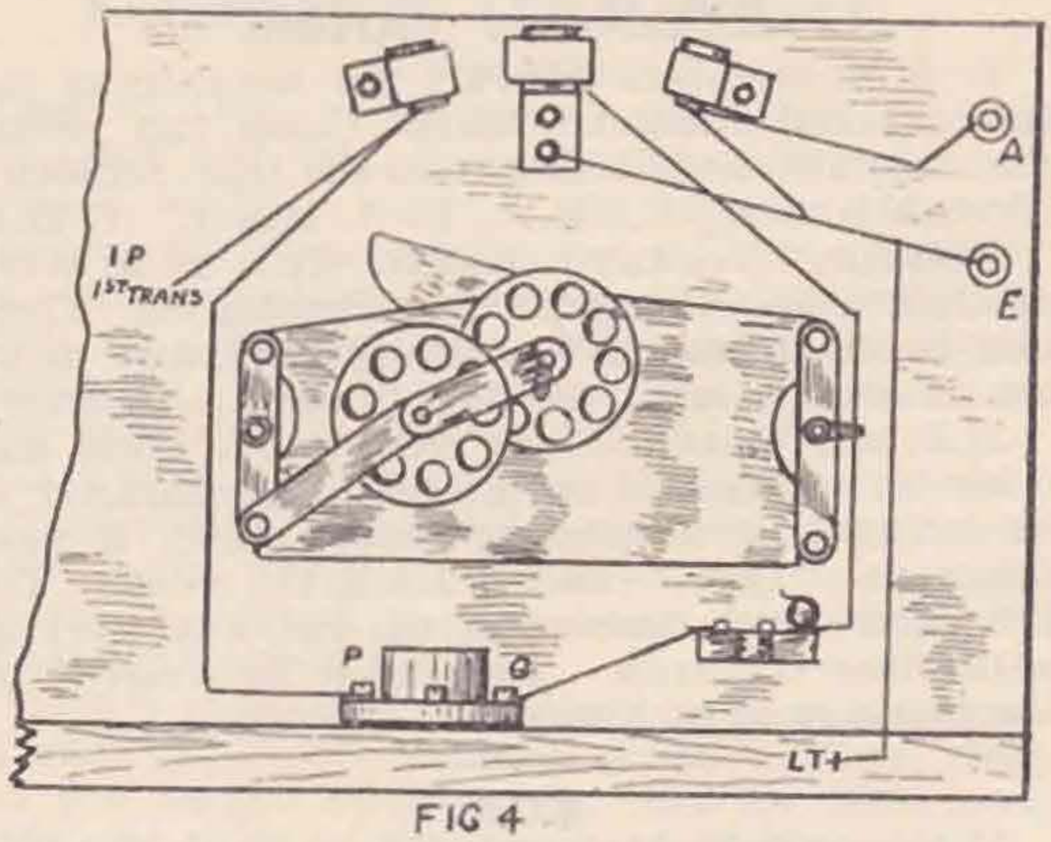


FIG 4

mitters and short-wave stations generally come in with a minimum of tuning trouble, and practically " the whole world " has been heard on it.

Extension Handles.

By A. M. Houston Fergus (G-2ZC and M.A.G.).

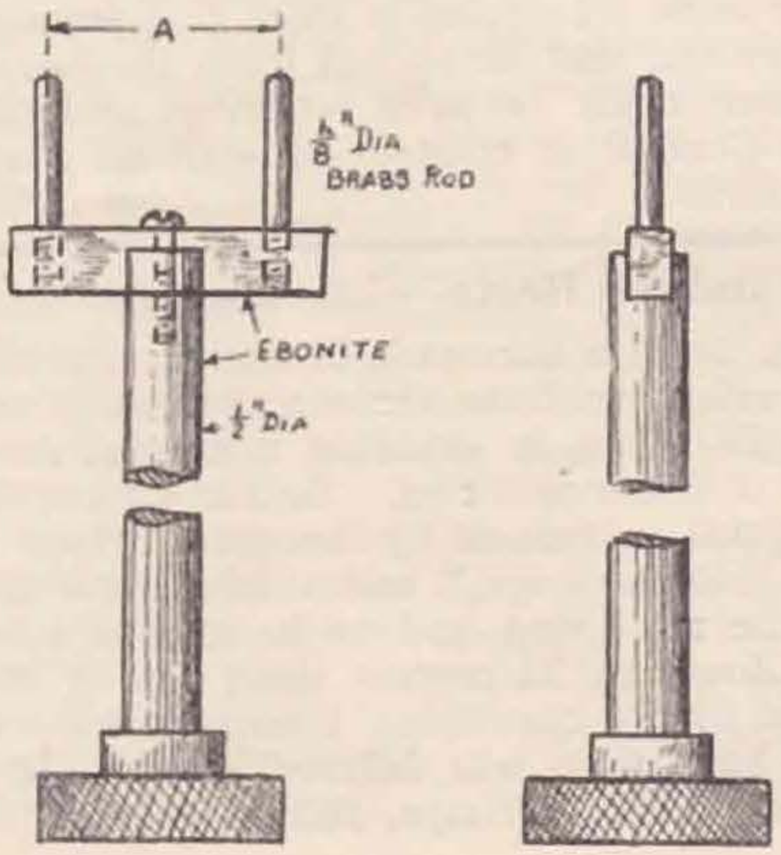
The fitting of extension handles to condenser knobs of a permanent kind means the chance of breakage. About three years ago the writer constructed some handles, which are not only interchangeable with every tuning condenser knob on any of his sets, but have the advantage of being easily plugged in, left there, or withdrawn, when not required.

From the sketch, construction is easily followed, though one or two points may be noted.

The dimension " A " (i.e., the pitch of the brass pin forks) can be varied to suit the type of tuning knobs used, when every knob will have two holes of that pitch bored $\frac{1}{8}$in. clearance.

The knurled handle is not really needed, but was fitted as some were at hand at the time.

If white enamel rings are painted round the holes in the tuning knobs, plugging-in is simplified in bad light, as the correct position of the holes is then easily seen.



Short Wave Telephony.

By G-5SZ.

THERE is a general impression amongst amateurs that the Constant current system of modulation, usually known as Choke control, is the only one suitable for telephony when using (from a "ham" viewpoint) fairly high power, especially on ultra short waves, it being easy to adjust and giving excellent results; this system of modulation is, I believe, used by most of our leading "hams."

The disadvantages of this system, however, lie in the heavy expenditure necessary in hard cash, especially to the "ham" using, say, 100 to 250 watts input. To obtain good results at least two extra valves are required, a modulator and a sub-control or speech amplifier; the filament consumption goes up enormously, especially when using "bottles" taking 4 to 5 amps. filament current, so that apart from the additional drain upon the exchequer, there is also the formidable task of keeping a bank of accumulators up to scratch.

I have a recollection of having read a remark some years ago made by a well-known authority that grid control could give excellent results on powers up to ¼ K.W.

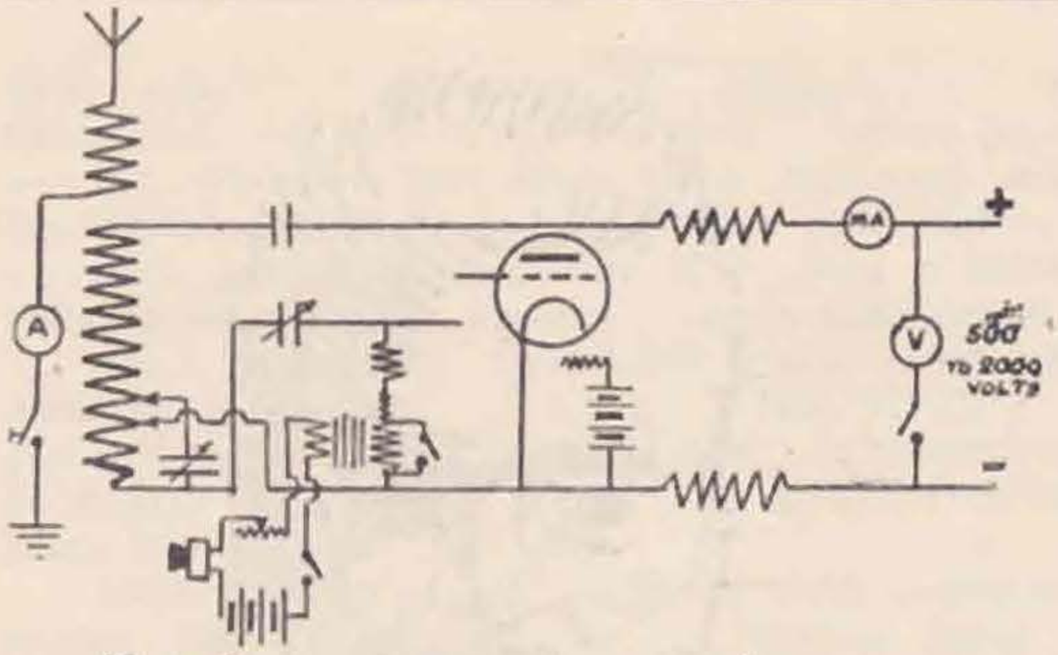
A few weeks ago I decided to try telephony, using grid control, on 45 metres, with a variable input from 20 to 200 watts, and after a few minor experiments, the results are, according to the very numerous reports which I have received, all that can be desired, in fact the reports have been so encouraging that I have the "ninepence for fourpence" feeling every time I speak into the mic.

The transmitter used for these tests is quite a hay-wire job, wired up in a "chair," the circuit being the good old stand-by, the loose-coupled Hartley. It was only the work of a few minutes to put an ex-R.A.F. modulation transformer in the grid circuit, the secondary of the transformer being wired in series with the grid leak with a switch to short the secondary when working Morse, the primary being brought out to terminals for microphone and battery connections, so that having the microphone and battery connected up, all that is necessary to change over from cw to 'phone is to open the switch shorting the secondary, hold the key down and speak into the mic. Nothing could be more simple, and I find that adjustments are not very critical. It is, however, a great advantage to use a variable grid condenser, and to adjust this for quality, in co-operation with another station willing to report.

Regarding the oscillatory circuit, I find that the adjustment which gives maximum *efficiency* on cw gives excellent results on 'phone.

I use a standard spaced variable receiving condenser .0005 mfd. as a grid condenser, but any capacity from .0005 to .001 could be used. The microphone is a Western Electric, solid back G.P.O. type, the aluminium diaphragm having been removed and a mica diaphragm fitted in its place. These mica diaphragms are the type used in Columbia sound-boxes, and cost about 2s. each.

Eight volts are used on the mic. with a variable resistance in series. This controls the range of voltages set up across the secondary of the transformer; when on full power (200 watts), all the resistance is cut out. The valve is a Mullard 0/150 and oscillates freely with inputs varying from 20 to 200 watts. The inductances are 5¾in. in dia., and were made by Messrs. Secretan & Mallett from edgewise-wound nickel-plated strip, very little dielectric being used. The primary contains 12 turns and the secondary (aerial coil) five turns; these are very loosely coupled, thus ensuring a steady wave. The plate stopping condenser is made up with three Dubilier type 577 .01 mfd. in series. The H.F. choke in the plate circuit consists of 150 turns of No. 30 s.s.c. wire on a 1¼-in. ebonite tube, the choke in the negative lead being of similar construction. The H.F. choke in the grid circuit, in series with the grid leak is a Lorenz wound coil of 12 turns 2in. in dia. The grid leak is a Zenite with tappings and variable from 12,000 to 20,000 ohms.



THE CIRCUIT USED BY THE AUTHOR.

Regarding results, speech and music have been transmitted several times to France, Germany, Sweden, U.S.A., and Brazil, reception being reported R7 in Sweden and R5 in Brazil. About 100 reports have been received from the British Isles, 80 per cent. of which report "modulation perfect." When on full power in daylight the strength is reported R8 to R9 in London (over 200 miles from Morecambe). Several well-known "hams" with whom I have been QSO reporting that the modulation could not be improved.

A small percentage of the reports received report slight distortion, which, I believe, might be due to local conditions near the receiving end, and causing some of the component frequencies in the speech band to become distorted or altered in amplitude.

The tests have been most interesting, and, in conclusion, may I be allowed to thank my fellow "hams" for the useful reports sent in, and also the several stations who have been enthusiastically QRV for tests.

NOTE.—Use an efficient H.F. grid choke and an insulated handle on the microphone, also keep the lips away from the mouthpiece, as H.F. burns on the lips, though not serious, even when using 200 watts, are not pleasant, and one is liable to make unparliamentary ejaculations not intended for other ears.

Small Advertisement.

CELEBRITIES by a Celebrity:

Hiram Percy Maxim, President A.R.R.L. and I.A.R.U. "the father of amateur radio in North America." Mr. Maxim is without doubt one of the best known and most popular amateur radio experimenters in the world. He is also well known in aviation circles in U.S.A., and is the inventor of the Maxim silencer. His father was the late Sir Hiram Maxim of machine gun fame.

"BILLY BORRETT."

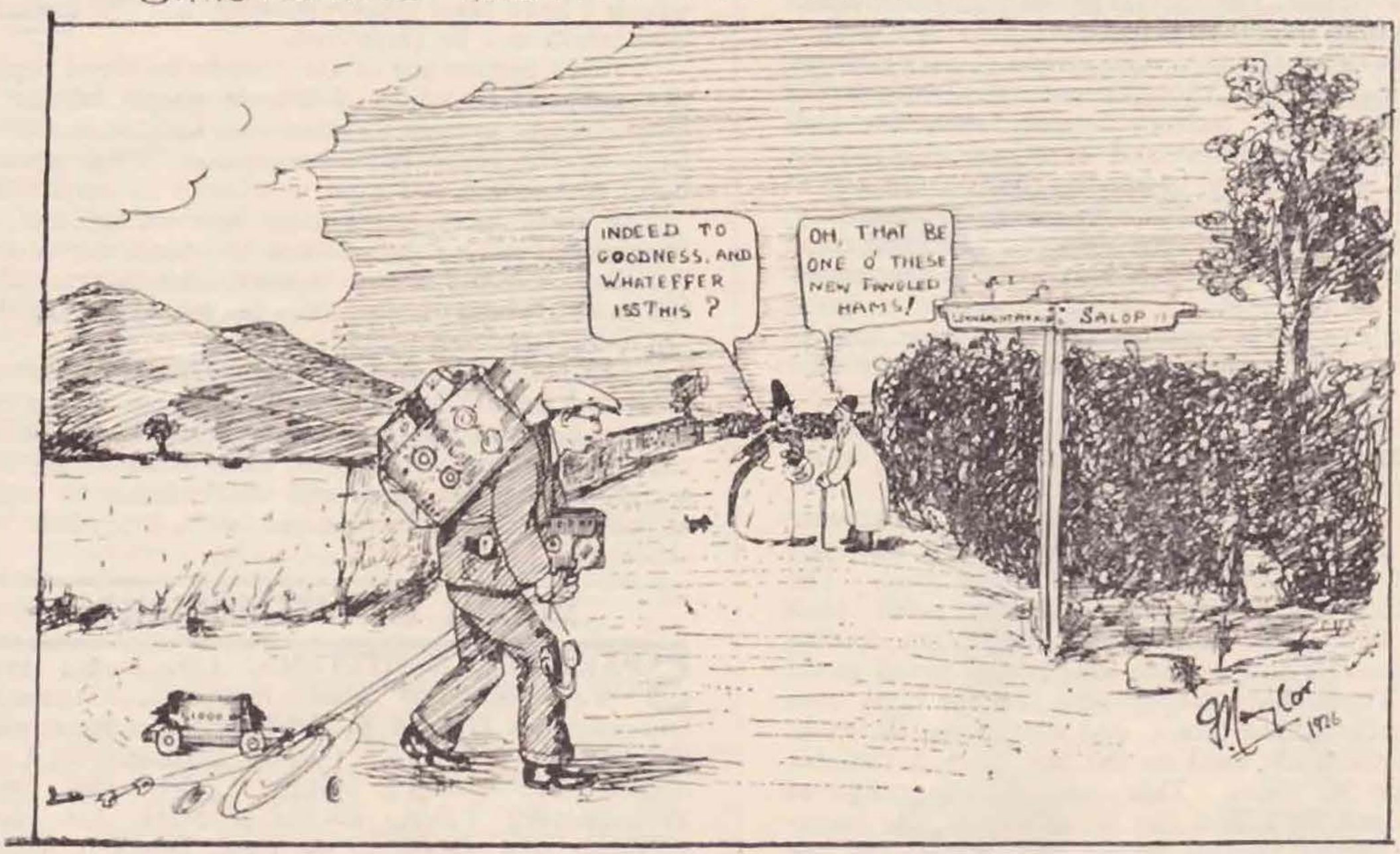
Technical Aid for Members.

Arrangements have been almost completed whereby we shall be able to give technical expert advice to members of the "T. & R. Section" for the nominal sum of sixpence to cover postage and stationery expenses, etc. We hope to enlist the services of some of the best known and cleverest technicians in the amateur movement so that the members will have the satisfaction of knowing that they are getting reliable information from the best sources. Although these arrangements are not yet complete we invite those members with problems to fire them at us, enclosing sixpence in stamps for a reply and we will see that they get what they want. A feature of the Section is that the name of the inquirer will not be disclosed if it is placed on a separate sheet of notepaper. Therefore do not be bashful but let us have your questions.—ED.

Editorial—(*Concluded from page 3*).

is under discussion. Its ultimate success and the full fulfilment of its objects are in the hands of every single individual member. There are three main ways in which you can help: (1) The strict observance of the terms of your licence; (2) the introduction of new members; and (3) the supporting of the BULLETIN by the submission of articles.

SHROPSHIRE HAS NOW TWO 'HAM' STATIONS!!!!



G6TD MOVES FROM WALES INTO SHROPSHIRE.

A Fallen Idol

OR

The Perversity of Human Nature.

By E. H. APPLEBY.

MANY moons ago, when I was young and simple-minded, I roused myself—I say I roused, because it is not, or was not, a habit of mine to exude energy except under trying circumstances, such as eluding caretakers, policemen, etc.

This, of course, is away from the point, so I will return. Well, as I was saying, I roused myself to take an interest in wireless.

The interest began to grow acute, especially as regards the exchequer. I became so enthusiastic that my parents thought I must be unwell.

I can distinctly recall the great day when I first erected an aerial. The family turned out to give the usual helpful advice; neighbours filled their gardens to observe the propagation of this curiosity. Meanwhile, I sat, or attempted to sit, the cynosure of all eyes, in an extremely disreputable condition, on an extremely sooty and uncomfortably sloping roof.

After many slips, the aerial was finally persuaded to remain in an elevated position.

Thereupon I descended to admire my craftsmanship and to bask in the new regard in which everyone held me.

That, of course, was in the days when wireless was a magic craft. From that day I was on a different status entirely. I blossomed forth from an irresponsible schoolboy into a learned professor, whose word on matters of science was—well, you know!

Vague rumours travelled abroad that, on a short piece of wire, I heard people talking in the far corners of the world. Old ladies, whose hobby it was to discuss other people's business in preference to their own, whispered "Caution!" as I might hear and report what they said.

Nervous neighbours commenced insuring their homes for huge premiums, in case I should pick up Timbuctoo and it fell on their houses instead of my aerial.

But the wheel of progress moves relentlessly; whispers of rumours deepened into print, that music and news could be heard by wireless.

From a local magician, I became a public benefactor, a necessary adjunct to the welfare of the district. As I grew older, so my friends increased in number, until I was, as you may say, overcrowded.

The installation of a loud speaker caused a violent sensation, although as far as I remember, it sounded far more like a kitten shut up with a pup in a biscuit tin.

About this time I leave college, and, having an indulgent father, I commence an indefinite holiday before supposedly entering his business. Unfortunately, this coincides with most residents in the district either buying, having made, or making themselves, radio sets. Note: Americanism has just got across.

Approximately, one in every hundred emitted some sound. The rest produced either dead silence or a noise like a herring when its devilled.

Unheedingly, I continue my merry way, amusing myself here, there and everywhere. "Hallo, Mr. Grid-Leak!" "Allow me, Mr. Podgson"; "Mr. Grid-Leak, our local wireless expert"—short pause—"Mr. Podgson has some little difficulty with his thirteen valve set, which he has made lately"—longer pause—"No doubt it is only a minor snag he has come up against"—very long pause—"I don't expect Mr. Grid-Leak you'd mind just *glancing* at his set." "Ah no! Not at all." I just glance at Mr. Podgson's set. It resembles, as nearly as possible, a wireless shop in which there has been an explosion.

I have a vision of Mr. Podgson, with assistance rather varied, building same. Having hung a chunk of ebonite on a sugar box, he proceeds to shoot at it with Podgson Minor's air-gun. He takes some flux and well smears the said ebonite to a depth of a quarter of an inch.

Then takes twelve paces to the rear and aims, with as much strength as he can muster, the most homogenous collection of components the local stores can supply, at the offending panel! Having got all these to stick on moderately well, he takes some wire and systoflex, rolls the whole into a good-sized ball, puts the lot through the family mangle, unstrings it slightly, then spreads it as evenly as possible over the components. Valves are then poured on and the set is served with leads, shellac, solder and string to taste.

Glancing at Mr. Podgson's set took four days of ten hours each. At the end of that period it worked. At least, I could make it work. Not so old Podgson. Having once touched the elaboration, he apparently considered me responsible for its behaviour, called me in at every conceivable moment, and spoke as if I had sold him a set at an inflated price and given him no satisfaction. And so it was all round. I, without realising it, had become a public convenience.

About this time, I took over, for amusement, a decent little workshop, and commenced delving into the mysteries of transmission.

This added a further incentive to the neighbourhood, and my benches, instead of being used for my own experiments, became filled with a motley collection of junk, subscribed to by all and sundry; understand me, not as free gifts, as a recognition of my services, but only just to *glance* at.

The idea suddenly dawned on me that if, instead of taking a friendly attitude, I adopted a professional one, I should be quite well off.

How prone we are to come to false conclusions. From the moment I changed, so did the district. Every householder became studious. Piles of literature were sold on the theory and construction of wireless in general. My work dropped to answering questions put to me judiciously in the train, bus and in the street.

Advanced listeners, who suffered much interference in the shape of home-produced howls and crackles, had recourse to reading the daily rags, considered the articles therein and propounded the idea that I was the cause of every squeak, crackle, bang and howl for miles around. For what was I; everyone knew by then what the transmitting amateur would stoop to. The blackguard interfering with their pleasure! The thought that I should interrupt such a public service as broadcasting was considered a far more heinous offence than cutting the telephone wires or turning off the gas main.

Correspondence.

To the Editor of T. & R. BULLETIN.

SIR,—In view of the fact that numerous experimenters are working with very low powers and miniature aerial systems, I would like to suggest that the high-power experimental stations observe a silent period, say, for one hour on Sunday mornings, in order to give the smaller stations an opportunity of carrying out tests which would probably be of more value than those consisting of high-power DX.

I refer in particular to the wavelengths of 45 metres and below, as on these wavelengths the interference will probably become more acute than at present despite the sharply-tuned circuits in use.

Nowadays, one rarely sends a report to a station only a few miles distant, but given a period during which all transmissions are of a miniature nature, the observer would realise that any report would probably be appreciated. I hope that the suggestion outlined above will find some support, although I am somewhat biased in this matter.

Yours faithfully,
J. B. KAYE.
London : 5BU.
Huddersfield : 5BG.

QUARTZ CRYSTAL CONTROL.

To the Editor of T. & R. BULLETIN.

SIR,—Having had considerable difficulty in getting quartz oscillators to work, I would like to draw the attention of other workers to a very simple solution of my trouble, first brought to my notice by 2OD. Instead of the value for the fundamental wavelength of 105 metres per millimetre (or 2.68 metres per mil) use the value 150 or $3\frac{3}{4}$.

The exact value may appear to vary between 150 and 130, but I have an idea this is due to the thickness not being measured correctly along the axis.

I should be glad to hear from anybody who can confirm or disprove my statements.

Incidentally, the only difficulty in obtaining 45-metre crystals is one of cost and delivery—they are easy enough to grind down, but one finds such a distressingly high number of duds.

Yours faithfully,
A. HINDERLICH (2QY).

To the Editor of T. & R. BULLETIN.

SIR,—Referring to your note under "Editorial" in April issue of the "Bull," I am pleased to know that some "hams" do work on this W/L, only somehow I have not heard them nor do they hear me, and until I read that article I was partly decided that I was all alone, my sigs go out O.K. as I am QSO France, Sweden and Finland with the big push of 2.2 watts, and fone being reported R5 in the former. In this case where do they all go to ? (the "hams" I mean) or are they that busy sending calls, V's and test that they haven't time to listen for replies.

Can I persuade one "ham" to be serious ?

Best 73's.

Yours faithfully,
R. MAYNARD (G-6MI).

My QRO.

By G5HS.

"anode current went. I examined the valve, and although the filament was still O.K., the anode current of 6 amps. had cracked the glass at the plate lead-in, and the valve was full of air.

"I then sat down and made rude remarks about Ohm's law and things in general.

"I took the valve along to the makers and told them that it had burst in trying to consume $1\frac{1}{2}$ kilowatts. They said they thought it might have been soft! In the end I was lucky enough to get it changed for a new one."

See page 20—T. & R. BULLETIN *for April.*

Southern DX Reports.

Prepared by G-2LZ.

6BT reports very little doing as he has been busy with the new QRA and QSL section. He has worked most of Europe on 2 watts.

2GO has worked the 1st, 2nd, 4th and 8th American districts on low power and has got across to 2AGQ on about 1½ watts.

6TD has moved into Shropshire. He tells me there is very little to report for Wales. 6JO has worked C-8AR on 9 watts. The call 6BN has been allotted to Mr. Bond, of Welshpool, and he hopes to get going on 45 metres shortly.

2VJ is a newcomer to the Southern Section and is now situated at Wembley. He has worked most of Europe on low power and hopes soon to get further afield.

2TA says he is still going strong in spite of YL's and local QRM. He has not got out of Europe yet, and would like to know how to attract a Yank's attention, as he replies to all their CQ's, but gets no answer. (Try a slight change of wavelength.)

5HS reports working the 1st, 2nd and 8th districts U.S.A., also A-2CG, 2BK, and 3WM. He has also worked three Brazilians and Z-2AE, C-IAR. He has had reports of reception from India and Tunis.

5UP has worked 13 countries on 2½ watts, and has got phone over to most of the Europeans. He is only using 3 watts on a LS5 valve.

5HJ has been unable to hook a Yank yet. He is using about 2½ watts and has worked P-3FZ at Madeira.

6QB reports no real DX. He has been experimenting on aerials. He tried 150 metres for a change and worked 9 stations right off, all of which received him at loud speaker strength.

5KU has done all Europe on 10 watts, also a 1st district U station. He is trying a 23 metre transmitter on a Hertz aerial and would be glad of reports. Stamped addressed envelopes will be sent.

5TZ has worked all over Europe on about 10 watts. Total stations to date 161. South Africa has been worked on 50 watts.

2JJ has recently gone down to 45 metres, and with 9 watts has worked C-8AR and U-IBZ, also all Europe.

2OD has done some excellent phone work with Australia. Every word has been received perfectly.

2ZC is QSO all Europe on 45 metres. He hopes to work U.S.A. soon, but is having trouble trying to smooth his generator ripple.

6OX is the DX station on Jersey, C.I. He has worked U.S.A., New Zealand, North Africa, and all Europe, and has been heard in California and Australia.

2BKC has just started on 45 metres, and is also testing on 8 metres. He would like to have any reports of his sigs. on this latter wave.

6PU has been QSO all Europe and U.S.A. on 9 watts, on 45 metres. He is now carrying out some tests on 23 metres.

5GW reports working India, U.S.A., and all Europe on 10 watts, using 210 volts H.T. accumulators. He has been testing on 23 metres, but so far has found no one there to work with.

Northern Notes.

Collected by 2DR.

On the whole no very startling work has been done in the North during this month. Steady is the word indicated, I think. Reception conditions have been much better this month than last, and consequently I have been expecting some hectic reports of DX, but spring cleaning has very marked effects on most of us, and perhaps this and the Easter holidays may be blamed for lack of activity.

There is a good story going round here about one of the gang going to visit a fellow victim the other day, and was surprised to see two halves of a coconut carefully suspended to the counterpoise by some useful lengths of 18's D.C.C.

On inquiring the reason for this unwarranted display, the inquirer was gravely informed that hanging nuts on the counterpoise was by far the quickest way of being QSO with Brazil, and hadn't he tried it yet? Judging by the number of birds visiting the nuts, one was forced to conclude that the ham in question had provided a few harassed fathers with a handy means of filling some half-dozen gaping beaks, situated in the nearby nests.

Northumberland and Durham.

5DA (Berwick-on-Tweed) has worked A-3KB on 28 watts, and found out that he had been QSO before many times in Australia on this power. 45 metre phone has been reported from Rawlpindi,

India, when using 30 watts. The mystery station, GBI, has also been worked first on 25 watts, and finally on 5 watts. The usual U's have been QSO, but working this month has been confined to week-ends.

2CC (Stocksfield-on-Tyne) evidently had his conscience stirred by my remarks last month. Good; I want as many reports as possible, so rouse them up, 2CC. Rumour has it that 5MO has deserted radio for collecting postage stamps, but I can hardly believe that of the veteran brass-pounder. 5KO is reported to have been busy among the U's, BZ's, and NZ's, using a power of 30 watts, but I have no details.

2CC has QSO'd over 60 U's and 15 BZ's this year, although his time has been very limited. Altogether some 100 U's and BZ's have been worked to date, whilst reports have come in from Yokohama and Bermuda. More dope from you next month, OM please.

Yorkshire.

5KZ (Keighley) is again to the fore in medium-powered working, having worked 50 new stations during March. Perhaps the most interesting is the QSO with the Swedish ship SKD (S.S. "Kiruna") whilst off the Lofoden Islands, in the Arctic Circle. Sigs. were reported r6 using 20 watts. Danish 7MT has been worked with 8 watts, whilst 7MT gradually reduced power to 1 watt and came in r2. Poland T Pax. was QSO three times, and India reported good sigs. whilst using 18 watts. E1BK, Cairo, reports r7 sigs. on 23 metres, although the transmitter is working on 46 metres. Hi!

6YR (Harrogate) has been carrying on the good work on his minute power of 4 watts, and has worked most of Europe and three Irish Free Staters. Tests with 6RY (Bath) proved that good readable sigs. could be sent when the input was 1 m.a. at 90 volts (0.09 watts). Who wants 100 watt licences? Well, I know 6YR would have one if he had the means to drive a motor-generator.

2XY (Leeds) has not yet sent in his report, and it will have to be held over until next month. He is in want of some dope on "Syncs." Will anyone oblige?

2DR (Shipley) has been very short of time this month, and has done very little except with C-1DD and the usual Continentals.

Cheshire.

My remarks last month brought in another report from Cheshire, and I hope others will follow on and let me have as many reports as possible.

5PO (Rock Ferry) is a recent addition to the 45 metre band, using a power of 7 watts. He is QSO all Europe, and has had replies to test calls from U.S.A. and Canada, but has been unable to effect two-way working owing to QRM from hams using higher power. (See 6YR about this, OM; he is with you every time.) During the recent holiday week-end he worked 35 stations using the above power, including an r6 report from Bilbao.

5SO ( ), in spite of the fact that he uses a hand generator, has been QRT with a chill, and although QSO with most of Europe on powers varying from 5 to 10 watts, he is hoping to get a U one of these days.

6TW (Willaston) has been trying phone on 45 metres, using 25 watts and a choke controlled set. He has had very good results with this and is still strong for the Hertz. He is trying 23 metres now, and would be glad of reports.

I am asked by some of the Cheshire men why 2SO, of Macclesfield, does not send me a report. Now, come along, Treacle Town!!

Lancashire.

5JW (Manchester) complains that his gang have sent him no reports this month. Call with the persuader, OM! He is still using small power and has been QSO Madeira, r4 on ½ watt. He gets good results from the Hertz after help from 5KU.

5XY (Burnley) has recovered from scarlet fever, and did useful work with a bedside transmitter, employing one watt and a ten-foot indoor aerial. A true ham this! He actually worked Ireland with this outfit! 5MS ran a daily schedule with him to keep him in touch with the gang. He is at present rebuilding.

5MS (Lytham) is down from Cambridge, and soon got his transmitter into shape. Using 30 watts, he has worked T Pax. and T Pay. (Poland), Morocco, Newfoundland, and 1, 4 and 8 districts U.S.A., which seems to me a good start anyway.

6KK (Blackpool) has worked U.S.A. and Brazil on phone, but I do not know the power used.

5DC (Thornton-le-Fylde) is a newcomer on the 45 metre band, and celebrated the event by at once working BZ1AF on phone. No power stated, but not a bad start. I hope to hear more of this next month.

5SZ (Morecambe) has not been so active this month, and has had to lower his aerial 25ft. and entirely reverse its directional effect (if any). Using 180 to 200 watts, he has worked 13 U's (1, 2, 4 and 8), also BZ SNI, and 1-1B (twice). DJG has been worked, but I have no information at present as to his QRA. On phone, using the same power and grid control, 1st and 2nd district U's have been worked, also SMYZ. A report from B-K5 gave the strength as r9 on the L.S., using a 0-V-1 set.

C. W. reports have also been received from India, China and Tasmania this month. Reception conditions have been not so good for A, NZ or BZ, but much better for U.

Two Requests.

Canadian 1DD wishes G's to listen for Canadian stations on the new wavelength of 52.5 metres. All C's are using this wave now.

Will everybody send in reports to reach me not later than the tenth of each month? OM Ed. is sacking me for sending these notes late, so don't forget OM's, the tenth of the month, pse.

Mid-Britain Notes.

Prepared by G6JV.

Shropshire (by 5SI).

This month has been of great moment for Shropshire, as it saw the much-delayed arrival of 6TD from "foreign parts" (i.e., Wales). Shropshire has two ham stations now, the Salop R.R.L. is being formed, and initiation ceremonies will be held when 5SI gets over to inspect 6TD's new QRA. Great things are expected by this League (and they may eventuate!). 6TD has planted a 58ft. stick, which daily causes much life-risking by tourists on the nearby Holyhead Road (people are curious, for some reason). A temporary aerial and cpse were up immediately, and the cpse nearly caused the death of several people round the

house, being below head level. Now things are a little better, and tests with European stations indicate an improvement over the old QRA. 6TD reports no time for real DX as yet, but that will soon be remedied, and then watch his smoke. Power still remains 75 watts, but now comes from home-made juice.

5SI has managed to get on the air once or twice, but has only worked NOT at Alexandria. Business and health have seriously interfered with DX work, but the warmer days may see a change.

Cambridge (by 2XV).

2ANO reports having convinced the P.M.G. that he really can "pound the brass," and is only waiting for an official call sign.

5YK has rebuilt his transmitter. It is doing better work now, and seems more stable. He is experimenting with keying in the counterpoise. He has worked P3FZ (Madeira) on ten watts, being reported R8. He has also worked GW3ZZ on less than one watt QRK R3—4. 2XV has just got going again on low power. During March practically nothing was done as a new transmitter was under construction on the "Skeleton box" plan. He is awaiting the arrival of a 50 watt bottle, and is QSO most Europe on 8 watts meanwhile. Will Mr. Brewer please report to me next month with the rest of the "gang"?

Northampton.

2QM reports working 25 U's, two PR's, two BZ's and one FI on 100 watts upwards. In spite of this, he thinks conditions have been "on the whole, rotten." He has been doing a lot of work with the Hertz, and finds it rather better than 3rd Harmonic. He finds that efficiency of the Hertz does not fall off much for several metres on either side of fundamental. Tests with a U station show that on fundamental of 44m., QRK was R6, and on 42.5m. and 46m. it was R5. He thinks that loss of efficiency would have been more obvious if he had been using much less than 100 watts. Please note, gang, this is the sort of practical and useful report which we appreciate. We hope to persuade 2QM to "take on" Northampton for us.

Warwick (by Mr. Erith).

"Some good low-power work is being carried out in this county. 6YD (Small Heath), with 400 volts on the plate of an Osram D.E.T.I., has been QSO with 14 U's, 2 C's, 2 PR's and 5 BZ's. He also has a regular schedule with C-8AR, who reports signals as R5-6. 5PX (Sutton Coldfield) is engaged in transmission without aerial or earth. His success can be measured by his QSO with New Zealand and Mexico with only 15 watts. Recently he has had the misfortune to be sick, but hopes to be on the air again soon. The Coventry Transmitters' Association, recently formed, will probably include some T. & R. members shortly. Reports from those working on 90 and 150 metres as well as 45 would be welcome."

Stafford (by 2KK).

There is a dearth of news this time. (This won't do, OM's!) We must keep our end up and make our Section *the* one.

6UZ forwards his report from Paris. He states his best DX to be QSO A3EF, and is naturally proud of his working with the Antipodes. In addition to the usual bag of Contin..tals, his report includes some good 'phone work, and he

considers grid control to be far the best. He is heard R8 over Europe.

6OH continues to work all European stations quite easily on input of 1.5 to 2 watts. He forwards a good log of calls heard.

2KK has, at last, got the Hertz going well—QSO Sweden on one half-watt. Under good conditions he can raise a few U's on 7 watts. Reports by 7th please, latest.

Norfolk.

Mr. C. R. Hunt, of Kensington House, Church Street, Sheringham, has obtained his licence, and the call 6ZJ. He becomes the second transmitter in Norfolk, thus breaking in upon the splendid isolation of 6JV! 6ZJ is using a Hartley circuit on 45m., and will be glad of reports. He is using a H.T. generator. 6ZJ's QRA has been given in full because he has promised to help. He will look up various friends known to be interested in ham radio, armed with a sample of the BULLETIN, and will endeavour to gain recruits. Will Norfolk hams get into touch with 6ZJ and report to him, please?

6JV has nothing startling to report. His best DX for the month being a long QSO with U4BL, of Florida. Since then the old and faithful O/30 A Mullard has departed this life, and all work has been done since with an LS5. During a recent schedule with 5SI, the latter tried QRP and put R3 signals into the cans at 6JV, with an input of 60 volts at 2m.a.—but this is to the credit of 5SI, of course!

By the way, can anyone undertake missionary activities in Leicester, Huntingdon, Worcester and Hereford? These counties ought to hear the glad tidings about short-wave DX, and the T. & R., but it is not known whether they have heard about either up to the present.

Irish Notes.

Prepared by 5NJ.

There is nothing very startling to report this month as regards DX work in Ireland, with the exception of the work done by 6YW, which will be dealt with later; and as comparatively few reports have been received, these notes must be somewhat brief on this occasion.

In the South, I understand that the gang there are awaiting word from Hartford in connection with the "getting under way" of their IARU branch—we expect it will be in full swing very shortly. This will be a big step forward in the interests of amateur radio in the Free State, and it is to be hoped that the Free State authorities will soon raise the ban on transmitting permits, and so give the many experimenters there the facilities they have so long hoped to obtain. In passing, I should like, on behalf of all the Irish gang, to extend a hearty welcome to our good friend Burne, of 2KW, who has come to live in the Emerald Isle. He has already done excellent work in organising the gang in the South, and we hope to hear him on the air in due course. 11B continues to carry on good European work on low power, and his signals are now well known over most of Europe. He has now got a super going on the low waves—FB.

In the North, the outstanding event of the month is the low-power work done by 6YW, who has *raised and worked* PR-4SA on an input of exactly 2 watts. It should be noted that, in this case, there was no question of reducing power after establishing contact, as 4SA answered 6YW's test call which was sent out on the power mentioned. Two-way working continued for 30 minutes without a repeat, the test being very satisfactory in all respects. I think this constitutes a British low-power record for the raising and working of a trans-oceanic station on a stated power—at all events, 6YW can safely claim it as such, until someone else disputes the claim. Now then, low-power hams, hw?!

6MU has now got his generator going well, and uses a power of from 20 to 35 watts. He has worked A-3QH, BZ's, 1AC, 1AP, 1AF, and 1AK, as well as C-8AR, and many other stations, including NOT (at Alexandria), NRL, TPAX, and the usual European and North African gang. His best report is R8-9 at S-5NF.

2IT is, we hear, struggling with crystal control—he refuses to say anything more at present!! But he has worked plenty of good DX, including Aust., Baghdad, Porto Rico, etc., and has been reported R4 in India and R4 in Tasmania.

2WK has had very bad luck in getting started owing to various troubles having developed. But we hope to hear him soon.

5NJ has worked Cape Town again and is QSO Australia and sundry places on schedule.

Will Mr. Campbell, of the Free State, please let us know his call sign and QRA, as we understand his licence has come through? Also Mr. McVea, Northern Ireland? Inn, OM.

Plenty of reports by the 10th, please.

To the Editor of T. & R. BULLETIN.

SIR,—Would it not be a good idea to provide a badge which members of T. & R. could wear in the form of a lapel button or brooch? Now that the holiday season is approaching, I consider it would be a most useful asset as a means of introducing members to each other. If bought in quantities, and sold by T. & R. only, there might be a small profit—every little helps.

Best 73's, OM,

BERTIE WALSH (GI-2IT).

The Passing of K-4CN.

Those of you who have established contact with German 4CN, will no doubt learn with regret that you have done so for the last time.

The writer had a visit this week from another well-known German transmitter, and in course of conversation was informed that his best friend 4CN had died very suddenly on March 16. On March 12 he was attacked by the deadly "flu," which three days later developed into double pneumonia, and this onset he only survived twenty-four hours.

Though only twenty-two years of age, 4CN had a splendid DX record, and had been QSO with NZ with an input of only 15 watts.

J. WYLLIE (G-5YG).

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FOR over twenty years the Telegraph Condenser Co., Ltd., have been solely engaged in the manufacture of Condensers. Millions bearing the mark T.C.C. are now in use—from big power Condensers weighing over 3 tons to the familiar little green Wireless Condensers. It is this experience which goes to the making of every single T.C.C. product.

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Tuning Up.

By 6L.J.

WHEN we went down to 45 metres most of us spent the greater part of our spare time in trying to get a respectable sort of QSB. Even those using D.C. generators were troubled with comm. ripple, while most of those using chemical rectifiers gave up all hopes of ever filtering the juice properly. Now, it is by no means impossible to obtain a pure D.C. note with even a very small filter condenser on the short waves. It is a question of correct adjustment of the R.F. portion of the oscillator.

We all remember how, in the old days, we used to set the shunt tuning condenser for the right QRH and then push up the anode tap until the anode current was lowest for the best aerial current. Nowadays, we actually use the valve capacity to help us out with the tuning and make the fine adjustments to get the QRH right by pushing the anode clip round the inductance. Unfortunately, this varies the efficiency at the same time. It generally happens that when you switch on the transmitter for the first time, even if the wave happens to be somewhere near right, the anode current is dangerously high. Then you listen on the receiver, and Oh, Gosh ! of all the awful QSB's yours is the worst. This is partly because the very high anode current drains the filter too quickly to allow it to do any smoothing. Well, what is to be done ? You can reduce the anode current by changing the QRH, but that simply won't do. Your wave MUST be within a certain small band, and that reduces to one spot when all the other G's have settled down in that band. The result is that the anode tap is left where it was, and you resign yourself to being the perpetrator of one of the world's worst QSB's. To add to your discomfort, the ham " in the next block " says nasty things about you, and, what is worse, all the DX fellows say, " Sorry, can't copy ur QSB thru QRM."

Now for the remedy. Take the " sure-fire " or " reversed feedback " circuit (For the purposes of tuning up this is the same as the Hartley, except that in the Hartley the grid tuning is done by varying the grid tap instead of using a variable shunt condenser.) Put the anode tap where you think it ought to be, and watch the milliammeter while you vary the grid tuning condenser. If no R.F. energy is being absorbed in the power leads the anode current will drop for a certain adjustment of the grid condenser. Under these conditions the set is working at maximum efficiency on that QRH, whatever it is. So measure the QRH. If it is too high then reduce the anode tap and tune up again. If the QRH is too low you must increase the anode tap. Keep on doing this until the milliammeter drops when the set is working on approximately the right wave. When you couple up the aerial coil you will find that the anode current goes up at one particular point on the aerial condenser. So does the aerial current go up. Perhaps there are two adjustments of the aerial condenser which give maximum aerial current with no current in between. This indicates that the aerial coupling is too tight. Loosen it and try again until you get maximum current on one adjustment of the aerial condenser. At this stage you have gone as far as you can go with the tuning, unless the bottle has blown up in the meantime. Never forget that when you do any testing with the circuit you must reduce power, so that if the set stops oscillating and the anode current shoots up it is limited to a low value because of the low power input. When everything is O.K. then you can push up the power, but don't lose sight of the other limit which we are asked to consider.

Now that the set is tuned up the QSB is almost bound to be fairly respectable, so you can cast about for improvements. The hint given by 2SZ on page 14 of the November number is one of the most effective. Reversing the coupling of the aerial coil sometimes gives you a better note. A bubbling water grid leak is often responsible for an unsteady wave.

Since the oscillating circuit is formed by the inductance together with the valve capacity and the self-capacity of the coil, and since the efficiency is generally improved by using more inductance, it behoves us to try more inductance with less self-capacity. For this we need a coil whose turns are widely spaced. Keep the diameter of the coil small, and you will reduce field losses.

But, whatever you do, don't forget to reduce power when you change the circuit, and to measure the wave whenever you change the aerial coupling because this changes things quite considerably.

We Apologise and Thank You.

We very much regret that owing to the crises through which the nation has just passed, the BULLETIN, in common with other journals, ceased publication. This number is therefore dated June owing to the fact that our facilities do not permit of us bringing out another issue so close to our normal date of publication. Will all area sub-editors please kindly let us have their reports for the next issue (July) at their earliest convenience so that there is no undue delay in producing this issue.

THANKS.

We have to thank all those members who so kindly placed their services, skill, and stations at the disposal of H.M. Government during the strike. Although at no time did it seem likely that it would be necessary to take advantage of their offers, yet at the same time their willingness to help is very greatly appreciated.

COMING MEETING.

This is the only intimation of forthcoming meetings which members will receive.—ED. NOTE.

June 11.—J. H. Whitehouse, Esq., of the B.B.C., title not yet selected, at the Institute of Electrical Engineers at 6 o'clock.

Eliminating Body Capacity.

CONSIDERABLE interest has been taken lately in the Technical Press on various methods of condenser screening. Theoretically, of course, this very necessary article should be locked up in an iron safe, but in practice cannot be done.

This short description of the method adopted in the writer's commercial receivers has been prompted by the remarks of G8JY. The system to be described is quite effective up to a point, when a sub-panel is essential.

Enclosed is a sample of the disc used, it is made of zinc, being easy to spin, but thin tinned sheet iron is better, and works nearly as well. When made, it is slightly heated over a spirit flame, and the back rubbed with Chatterton's Compound, when it can be instantly and permanently attached to the panel. In the sample, single-hole fixing condensers are utilised, and insulated from the screen by a thin celluloid washer that just covers the bottom butt end of the condenser top bearing.

The rings are easy to turn out once the lathe has been set up, the method being as follows :—

Two oak blocks are turned up and polished smooth with glass-paper. Both have a diameter from 3½ to 4 inches, as required, and are 1 inch thick, being finally bored to take a ½-inch machine bolt (hard steel). It is most important that both the blocks are of same size and dead true, including the bolt to be mentioned later.

Roughly cut out a circular piece of metal, slightly larger than the discs, bore a ½-inch hole in the centre, and clamp between the blocks, screwing up with the bolt and nut, the protruding shank of bolt being held in the chuck jaws. Next trim the rough edge down with a cutter, leaving about 3-16in. when finished. Draw cutter back, and, using cutter block as a rest, force the exposed edge over towards the chuck, until it lies flat with the wood, this operation must be done with care, so that there shall not be a "jamb up," while a suitable tool is a large lathe spanner.

Remove the disc from the matrix and chuck up in the lathe, so that centre hole can be cut out to desired size in order that it will clear the condenser spindle bearing by ⅛in. all round.

The machine bolt used should be of good quality steel, about five inches long, and threaded nearly the whole way, the length is necessary to get a good hold in the chuck jaws.

The amount of electrical loss is small, while the effect is good, even when zinc is used no hand capacity effect is noticeable even on critical tuning, provided, of course, the screen is earthed, the raised flange being suitable for soldered connection.

Apart from the above, where all kinds of problems are daily coming forward, it is remarkable the gadgets that can be rigged up, to do seemingly impossible jobs, while it is also most interesting making special tools to secure effect different from the other fellow.

"SWISHER."

AN EMPTY SPACE would have been filled if *you* had sent us an article to fill it !

Improving a "Junk" Condenser.

By G6JV.

UNLESS the majority of the gang are wiser than the writer, it is probable that the junk box will contain several so-called "variable condensers" which have been discarded as the result of somewhat bitter experience. This being granted, then the time will arive when, for some purpose or another, the use of a variable condenser is once more indicated.

Supposing that, at the moment, the funds are in a less satisfactory state than might be desired, thoughts will turn in the direction of the junk box. It is thought, then, that a few remarks based upon a method of making junk condensers fairly serviceable may be of assistance.

These instruments may be classified broadly into two classes. Those with metal end plates complete with the dried-mud bushes, and those with dried-mud end plates. In either case the method of treatment advised is the same.

Take the thing to bits. Prepare a piece of ¼ in. ebonite of good quality in the usual way by removing the skin with emery cloth. Using one of the old end plates as a template mark out, drill, and cut out two new end plates from the prepared ebonite. Tap the holes for the three pillars 2B.A., being careful to hold the tap so as to cut a thread which will allow the pillar to stand *vertical* when inserted. Screw in the three pillars, with a lock-nut on the under-side of the end plate. Run another lock-nut (these are all 2B.A.) down each pillar. These should be *thin* lock-nuts, not full-size nuts.

Before inserting the stator-bearing bush, and if a lathe is available, put this in the chuck and with a sharp tool skim the bearing surface and finish by holding a piece of emery cloth, which has been wrapped round a block of wood, against the surface of the brass so as to remove tool marks.

Now treat that end of the stator which takes its bearing upon the bush in a similar manner.

Where there is no lathe, much may be done with a good hand brace held in the vice, plus a little ingenuity, and the assistance of the O.W. or the junior ap. The job won't take long enough to burn the cakes. The great point is that unless the bearings are true it is of little use proceeding further.

Now fit the bearing-bush in end plate, and insert rotor. Slip on the first stator plate and adjust height of this plate by means of the three extra lock-nuts, which we ran on to the pillars previously. It may be that a washer or distance piece will be required on the rotor shaft in order to bring the rotor up high enough to engage the stator plates satisfactorily. If so, such distance piece should be turned true on its bearing surfaces. Note that no mention is made of spring washers. These things have no place in a condenser to be used on the higher frequencies. If the distance piece, too, can be avoided so much the better.

Next build up the stator with alternate plates and spacer washers, clamp up solid with another lock-nut on each pillar, and the stator is completed. Now run another lock-nut on each pillar. These will be used later on to fix the position of the bottom end plate.

The next job is the bottom bearing. Take a piece of 2B.A. threaded rod, carefully file one end flat, centre punch and drill down ⅛ in. with a small spear-point drill. Countersink with a larger drill.

Now drill the centre hole in the bottom end plate and tap 2B.A. Screw in the 2B.A. rod, prepared as above, with a lock-nut on either side.

Now entre punch and drill the bottom end of rotor spindle just as described in the caseof the 2B.A. rod.

Now solder on to the rotor spindle either 4in. of thin phosphor bronze tape about ⅛in. wide, on to which is slipped a 3½-in. length cut from a suitable bootlace, or failing this, solder one end of a piece of flex to the spindle. Wrap the pigtail so made round the spindle a few times and tie in place with piece of cotton.

Replace rotor in its top bearing and, holding spindle vertically, carefully place a small steel cycle ball-bearing in countersunk hole in its end. Now slip on end plate so that the steel ball rests between our spindle end and the prepared 2B.A. rod, which we had previously screwed into centre hole in our end plate. Run a nut on to each pillar and screw each down carefully until end plate is level and rotor revolves smoothly and just freely enough. Now screw the three lock-nuts on under side of end plate upwards until end plate is firmly gripped between the three pairs of nuts.

The last operation is to drill, tap, and secure a small terminal into a suitable position in the bottom end plate. If available, a fretsaw should be run down the shank ⅛ in. Now cut cotton securing pigtail and insert its free end into the fretsaw cut; a blob of solder does the rest. A small brass screw passing through one of the end plates and placed in a suitable position to engage the end rotor plate will act as a stop, which is necessary to protect the pigtail.

If the above operations have been carefully carried out the result will be a very passable condenser, with none of the "fast and loose" places so much in evidence when rotating a junk instrument. Its losses will be small, and the scraping or "frying" noises always to be heard in the fones when cheap condensers are rotated in a tuner that is used on the higher frequencies, if not entirely absent, will at least be bearable. It will certainly pass for use in a local oscillator or the like. After all, none but a really first-class instrument will give real satisfaction in the closed circuit of a dependable short wave tuner.

The writer is using with satisfaction several condensers which have been treated as described. One tip (borrowed from the A.J.S. people, in which the writer has no "shares") may be mentioned. Since the connection to the rotor is positive—via pigtail—there can be no great harm in smearing the bearings with a *little* vaseline, and it will make the action "silky." Now, discretion must be used. There is no point in greasing the plates as well! Remember that we are lubricating a condenser and not greasing the bottom bracket gearbox of a motor bike!

Correspondence.

To the Editor of T. & R. BULLETIN.

SIR,—Mr. Goyder, of 2SZ, has pointed out to me that a certain amount of misapprehension may have been caused by my letter in last month's issue, concerning crystal control.

I therefore hasten to endeavour to correct any wrong impression that may have been caused.

Firstly, I would say that my letter was never intended to dispute the fact that 2SZ was undoubtedly the first amateur station to convert his set to crystal control for DX working on 45 metres. I would go further and say that at that time I believe he was unique in being the only purely amateur station in Europe actually making use of this principle in a practical manner.

What I did intend to convey was that, although I had been working crystal control experimentally for some months, I had quite failed to interest the gang in its tremendous possibilities.

None is more delighted than I to know that amateur stations are now being heard using crystal control, and, personally, I have sat for long periods simply listening to 2SZ's signal and eulogising its beauty; in its splendour I must admit I derived an immense amount of personal satisfaction.

With regard to the second point—I inferred that 2SZ had caused his crystal to become inoperative. This was due to the fact that I had apparently been misinformed, and I hasten to apologise for any misapprehension I may have caused in this respect.

Fellows may rest assured that quartz plates having a natural frequency around 90 metres are not dreadfully fragile and, if handled with ordinary care should last for ever. The two crystals to which I referred were destroyed "in the cause of science." One was cut with the idea of making two out of one, and the other was deliberately ill-treated with excessive voltages.

I hope the above will clear up any misunderstanding on the subject.

Yours faithfully,

KENYON SECRETAN.

To the Editor of T. & R. BULLETIN.

SIR,—A friend of mine—Captain E. J. Hobbs, of the Tank Corps, who is at present living at Berkeley House, Primrose Road, Bangalore, South India—who is a very good DX man, tells me that he is anxious to communicate with people in England on 20 metres. I do not know whether you might care to publish a note as to this in the T. & R. BULLETIN. Captain Hobbs would, I am sure, like to communicate with anyone in England who might care to write to him on the subject.

Yours faithfully,

IAN FRASER.

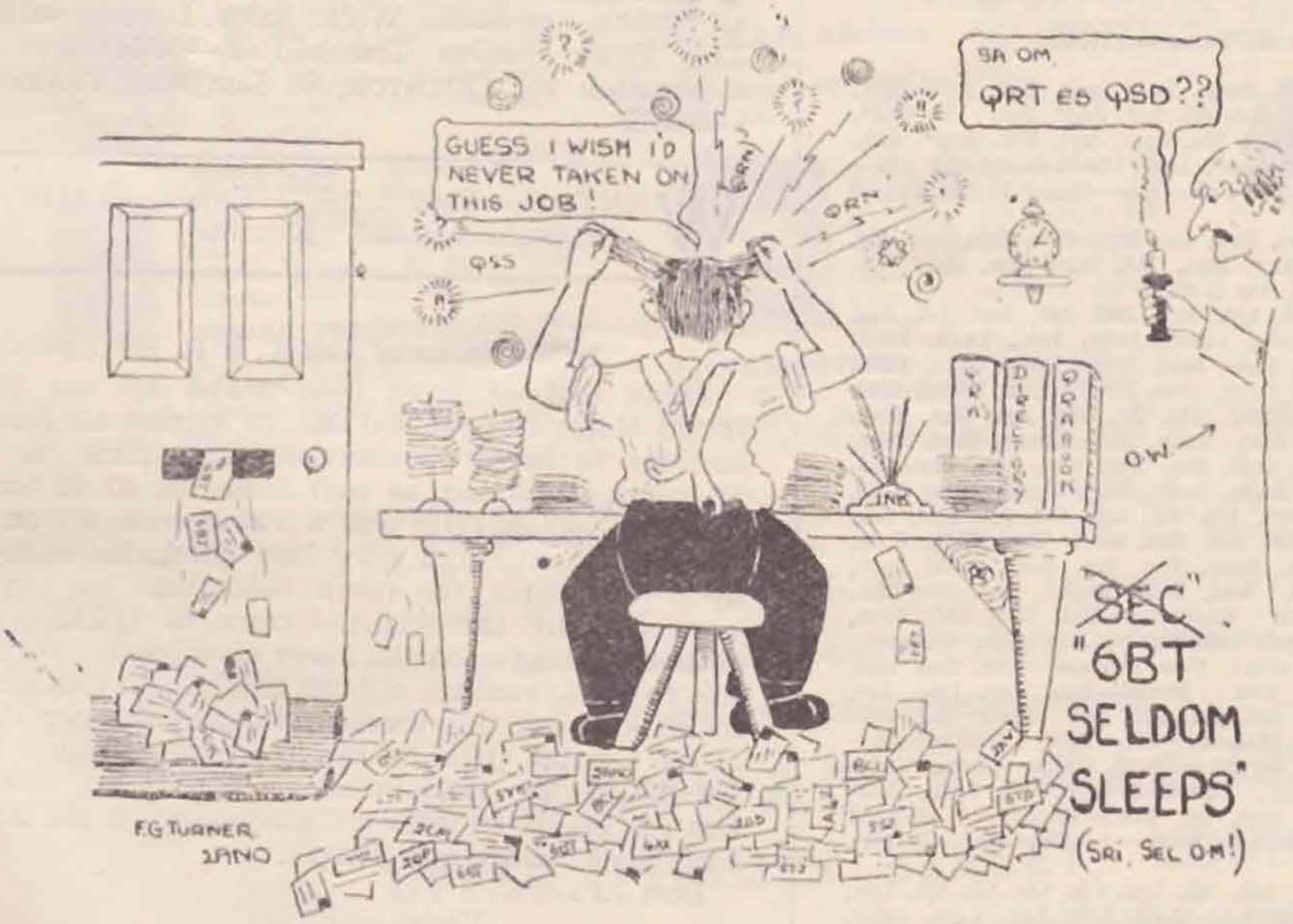
St. John's Lodge, Inner Circle,
Regent's Park, N.W.1.

PROPOSED TRANSMITTER'S CONVENTION.

It is proposed to hold a "Ham" Convention probably some time in June or the end of May, providing that sufficient Provincial members can attend. Will all those who would like to join us in this the first Convention of its kind in England, kindly send a card to the Hon. Secretary, T. & R. Section, to this effect?

DO YOU KNOW OF A BETTER AMATEUR PAPER?

Grundy's



One Member's Impressions of another who "Seldom Sleeps."

3216 communications since the inception of the Q.S.L. Section is a record of which 6BT might well be proud!

THEN IT IS YOUR OWN FAULT!

Calls Heard.

Calls heard at Fethard, Co. Tipperary, during March, 1926 :—

Gt. Britain—2bg, 2cc, 2dr, 2ek, 2fm, 2go, 2it, 2 ', 2od, 2oj, 2oq, 2qv, 2vw, 5fs, 5kz, 5lf, 5ls, 5ms, 5so, 5up, 5vl, 5wq, 6ah, 6ep, 6iz, 6jh, 6mu, 6pq, 6qb, 6rm, 6ut, 6uz, 6vp, 6xd, 6yd, 6yg, 6yr; France—8bu, 8fu, 8il, 8jms, 8nn, 8o8, ocng; Finland—2nd; Belgium—b9, d4, e9, k2m2, o8, p7, w1, 82; Sweden—smtn, smvj; Norway—1a1a, 1a4x; Denmark—7bx, 7mt, 7vx, 7zm; Spain—ear9; Ireland—gw, 11b, gw11x; Italy—1ae, 1as, 1ay, 1ak, 1cs, 1fp, 1gw, 1ma; Holland—o'kn, opx, oxw, oxb, owc; U.S.A.—1ajx, 1cak, 1ch, 1cmx, 1ga, 1gr, 1sk, 2agm, 2anp, 2aoc, 2bw, 2cyx, 2fk, 2gy, 2ku, 2sq, 2vp, 3bqj, 3cgs, 31d, 3xan, 4aft, (pr)4sa, 7bf, 8aly, 8yek, 8xe, 9bpb, 9ei, 9 :i; Canada—1ar; Brazil—1ic; Australia—3mp; Portugal—1ae, 3gb, pi, 4ur, ys, 7xx; Miscellaneous—ke, 4cc, k4fl, fx, lpz, aakb, not, uk7.

All below 50 metres on O.V.1 Reinartz.—H. Goldsbrough.

U.S.A.—1ajv, 1bqt, 1cmp, 1xm, 1cjj, 1bcn, 2av, 2brb, 2xbb, 2ccl, 2cxl, 2arm, 2ev, 2or, 2cpd, 3cah, 3chg, 3mv, 3bqj, 4bl, 4tf, 4tv, 6xi, 8dbb, 9dqu, nr'k; Porto Rico—4sa, 4rx, 4ur; Brazil—1ap, 1ak, 1ad, 2ab, 1ar, 1ao, 1al, sni, 5aa, 1ib, 1ic, 1ac, 1af, 1ab, 6ya, 1a, 6qa, 1an, 1ia, sq1; Chile—9tc, 3ij, 2ld; Phillipines—3aa, neqq, 1hr; South Africa—a6n, a4z; Siberia—tuk; Canada—1ar (phone), 1dd, 2ax; Australia—3bd, 3bq (phone), 2cm, 2bk, 6ag, 4rb, 2ds; Poland—tpax, tpav; Denmark—7bx, djg; F-Indo-China—8qq; Argentine—rdb2; Portugal and Madeira—3f', 1co, 1ae, 3gb.

Reports will be sent on receipt of station cards. Pse QSL 6YW's sigs. All cards answered.—T. P. Allen (GL-6YW), 19, Ardgreenan Drive, Belfast, on O.V.1 Reinartz.

India—y-12g; Spain—ear5, ear6, ear20, ear22, ear24; Finland—2ol, 2bs, 2nd; Italy—1ma, 1ad, 1ch, 1cu; Germany—w9, b7, i8, 4cn, 4lv; Holland—2pz, pb7, nstb, pck4, 0nlf, 0pm, 0fp, 0ro, 0fk, 0rb, nl2; Belgium—a44, o8, c22, s4, y2, k44, p2, m2, v8, a22, 4mb; France—ocnq, onm, 8jf, 8jws, 8ml, 8rbp, 8pep, 8c', 8bd, etc.; Britain—2bz, 2oj, 2fk, 2tp, 2sw, 2sx, 2oc, 2mi, 2da, 2qv, 5ku, 5ls, 5nn, 5wt, 5kq, 5yk, 5rz, 6yv, 6kk, 6jo, 6zj, 6op, 6cc, 6ko, 6jv, 6qc, 6zc, 6uz, 6tg, 6mj, 6mu, 6td, 6pg, 6rm, 6bt; Unknown—9vu, mp, x2m, q1o, sp (qra's).

40—115 m., O.V.O. es O.V.I.

Pse QSL.—G2-BJP, Langside, Cromer, Norfolk.

Y-12G was received here at 08.15 G.M.t. on about 43 m., calling or working CRP. Am carrying out tests with different systems of modulation, etc.—G2-BJP, via G-6ZJ.

U—1cpf, 1gp, 1rd, 1vy, 1za, 1cmp, 1aao, 2pa, 2cjj, 2apv, 2ahm, 3ara, 3mu, 3bms, 4tc, 5mg, 8mk, 8add, 8ada, 8bqi, 9bfp, 9bxg, 9bxj, 9cxx, 9dfb, 9dib, 9ebx, 9ee, 9egu; BZ—1wr, 1ap, 1ib, 1ia; F—8trax, 8rf, 8jn, 8sss, 8hm, 8cr, 8sd, 8pep, 8wu, 8um, 8yor, 8pm, 8nib, 8udl, 8tk, 8gm, 8ric, 8fu, 8sax, 8jmj, 8xe; B—s5, b2, 9e, g33, p7, k5; S—smtx, smvj, smuv, smyu, s2nd, smxu, smua, smri, smsr, smuk; G—k4pf, kpl, k18, c3ni, c5hp, c5ba; Fi—8qq, 8vg; British—about 20; New Zealand—2ac, 1ax, 4ac, 4ar, 4az; O—a4l.

Pse QSL. Y not.—Ralph H. Parker (2KK).

G—2bz*, 2cc, 2kf, 2kw, 2lz, 2mm, 2nb, 2nm, 2od, 2qb, 2qm, 2sz, 2xy, 5ma, 5qv, 5xy, 5yi, 6iv, 6lj, 6nf, 6td*, 6yu; F—8bf*, 8ca, 8dk, 8gi, 8ip*, 8jd, 8jn*, 8ln, 8lx, 8pm, 8qq, 8tk, 8xp*, 8yb, 8yor*, 8za; I—1ay, 1as, 1bd, 1no*, 1rm; B—4yz, ' 2, S4; E—ear3, ear6, ear9; N—pc11, pb3; S—2co.—From U-2BUY, via G-6TD.

2kf, 2dx, 2nm, 2lz, 2od, 5vl, 2xy, 5at, 5qv, 6yu, 6gh, 6pu, 2lj, 2cc, 2bz*, 2nb, 6tm, 6td*, 5xy, 5ma, 2sz, 2fm, 2kw, 6kk, 5dh, 2sh, 6nf, 2qm.—From U-2JN, via G-6TD.

U.S.A.—1aw, 1bi, 1ch, 1cd, 1ga, 1kk, 1rd, 1se, 1sw, 1sl, 1ue, 1uu, 1vc, 1gw, 1yb, 1za, 1abz, 1akm, 1aap, 1aiu, 1axa, 1apz, 1awe, 1aao, 1afm, 1aci, 1air, 1aae, 1ald, 1aep, 1ahb, 1aay, 1akz, 1afl, 1acg, 1acj, 1bdk, 1bhm, 1byx, 1bie, 1bwf, 1cmf, 1cmp, 1cal, 1ccx, 1cmx, 1ckp, 1cpf, 2ax, 2bg, 2da, 2fj, 2fo, 2gk, 2kz, 2mk, 2nz, 2or, 2aey, 2ahm, 2agm, 2aky, 2akb, 2acp, 2anm, 2acs, 2aim, 2aev, 2buy, 2cvj, 2cjj, 2czr, 2cxl, 3bz, 3hg, 3he, 3kb, 3lw, 3ld, 3qt, 3auv, 3ahl, 3aha, 3afw, 3acm, 3ade, 3bqj, 3bms, 3bnu, 3ckj, 3cel, 3chg, 3vai, 4jk, 4gy, 4rm, 4rz, 4ti, 4qi, 4xe, 5jf, 5mi, 7ek, 8al, 8es, 8gz, 8jq, 8ks, 8pl, 8rh, 8xe, 8za, 8ayo, 8avj, 8bth, 8bzc, 8blb, 8blp, 8ccr, 8ccq, 8don, 8dcv, 9xe, 9zt, 9aio, 9adk, 9aot, 9ail, 9beq, 9cib, 9eky, 9eik, 9eel, 9ebj, 9egh; Canada—1am, 1ar, 1aw, 1dd, 2ax, 2al, 8ar; Australia—3bd, 3bq, 3hl, 3wm, 3kb, 3xo, 2cm, 2yi, 6ag, geft (calling cqa de geft, Sydney); Africa—a3e, a3b, a3y, a4z, a6n; New Zealand—1ax, 2ac, 2xa, 4ac, 4as, 4al; India—2bg, hbk; Brazil—1ab, 1ac, 1an, 1ae, 1aw, 1aq, 1ia, 1ib, 1ic, 1bd, 2af, pt1, pt2, pt5; Chili—2ld, 9tc; Argentine—db2, 1cd (?); Madeira—3fz, 3gb; Philippines—1hr, 3aa, neqq, najp, npo; Egypt—egeh; China—gfup; Indo-China—8qq; Singapore—gecq; Palestine—6yx, 6zk, 6zm; Miscellaneous—kibd, ntr, nkf, urss, sp, hbt.—Report of stations received February 6 to March 6, 1926.—J. Rodgers (G- JO), Falmouth, Cornwall.

U.S.A.—1ad, 1ax, 1ch, 1cf, 1di, 1df, 1ga, 1ja, 1je, 1jl, 1pl, 1py, 1qb, 1rd, 1rf, 1sw, 1vc, 1wp, 1xm, 1yd, 1yb, 1zk, 1ane, 1ahb, 1ahl, 1aao, 1afm, 1aof, 1aci, 1aiu, 1ahm, 1air, 1ajx, 1akm, 1akz, 1apv, 1ahc, 1azd, 1bie, 1bbk, 1bby, 1bvb, 1bsm, 1bcg, 1bad, 1bux, 1bhm, 1bdh, 1cmf, 1cmp, 1cmx, 1cjc, 1cal, 1cpq, 1cio, 1ckp, 2ax, 2av, 2bw, 2cs, 2gw, 2gk, 2kg, 2kr, 2kv, 2mm, 2mk, 2ol, 2px, 2arm, 2ahm, 2arh, 2asa, 2atc, 2atg, 2aef, 2akb, 2atk, 2acp, 2apv, 2amj, 2brb, 2buy, 2cvj, 2cxl, 2ccl, 2crb, 2cwr, 2cjb, 2cpd, 2cod, 2cyx, 2cty, 2tje, 3ej, 3hg, 3jw, 3ld, 3lw, 3mk, 3ps, 3ry, 3aha, 3anr, 3acm, 3aib, 3aih, 3brw, 3baq, 3blu, 3bmz, 3bqj, 3buv, 3bgj, 3cjn, 3ckf, 3chg, 3cgs, 4pl, 4jk, 4bl, 4rm, 4kn, 4ux, 4it, 4si, 4la, 5ac, 5yb, 6fz, 7xf, 8fp, 8kw, 8xe, 8amj, 8aly, 8bpl, 8brd, 8ccq, 8dan, 8dpj, 8zae, 9xe, 9dwk, 9dge, 9dos; Canada—1ar, 1am, 1dd, 1dj, 1ei, 2be, 2eg, 8ar; Africa—a6n; Australia—2cm, 3bd, 3wm, 3xo, 5kw; New Zealand—2ac, 2bx; India—hbk; Palestine—6zk; Madeira—3fz, 3gb; Morocco—mf2cnp; Egypt—egeh; Brazil—1ar, 1al, 1ac, 1af, 1aw, 1aq, 1ap, 1an, 1aj, 1ao, 1ay, 1bd, 1bi, 1bh, 1ia, 1ib, 1ic, 1id, 1ii, 1ix, 2aa, 2ab, 2af, 5aa, 5ab, 6qa, sni, pt2, pt3, pt4, pt5; Argentine—ba1, dm9, de3; Uruguay—y1cd, yjcp; Philippines—1hr, 3aa, 1ga, cd8; Indo-China—8qq, 8blt; Alaska—wxp (calling u6oa); Miscellaneous—geft, gfsq, xgb1, gb2, x3ok, r2wd, 3crl, ntt, not, cs, bl, nir, nkf, nidk, sdk.—List of calls heard February 6 to April 2, 1926.—J. Rodgers (6JO). Falmouth, Cornwall.

B—4qq, 4yz, w1, k2, q2, r2, s2, y2, d4, s4, d5, p7; F—8ar, 8bf, 8bs, 8bu, 8co, 8de, 8dp, 8ef, 8ez, 8gi, 8ip, 8ix, 8ju, 8rb, 8ri, 8rv, 8th, 8uu, 8xh, 8zm, 8aon, 8coq, 8gra, 8gsm, 8hfd, 8jms, 8mgr, 8rrr, 8sss, 8ssz, 8tis, 8zsm, fw; G—2bo, 2bz, 2cc, 2go, 2it, 2nj, 2oj, 5ma, 5ms, 5sk, 5sz, 5tz, 6iv, 6kk, 6qb, 6tg, 6ut, 6yd, 6yq, 6ys, 6yu, 6op, gakb; I—1ad, 1ay, 1bk, 1bw, 1cc, 1cr, 1gn, 1lp; K—4cn, 4lv; N—0aw, 0bl, 0gk, 0kh, 0wb, 0zb, 2pz, npck4; S—2bs, 2co, 2nd; E—ear20, ear21, ear22; U—1aao, 1ana, 4tn; LA—1g, 1w; SM—smaa; ?—fwzhc8, eaha, f3ca, fona.—Alexander Cross, Jun. (BRS3), The Manse, Muthill, Perthshire.

By Bzl, 44, Bd Frere Orban, Liege, April 1 to April 10, 1925.—G. only.—gfl, gfc, a'ka, akc, knl, 2baz, 2cc, 2cl, 2dr, 2dx, 2fm, 2go, 2ia, 2jj, 2nj, 2mi, 2nt, 2qb, 2un, 2xj, 2za, 2zb, 5ar, 5df, 5ec, 5fq, 5gq, 5gs, 5jw, 5pm, 5po, 5qz, 5tz, 5up, 5uq, 5uw, 6bt, 6br, 6hf, 6ia, 6kd, 6lc, 6me, 6oo, 6rd, 6tg, 6vp, 6yd. Who wants a Cid ?

To the Editor of The T. & R. Bulletin.

Dear OM,—I have been asked by our good friend Major Borrett, C-1DD, to request all British stations to listen specially for Canadians on the 52 metre waveband, as well as on the 37-42 band. Recently, when 1DD was working with me on 37 metres odd, through very bad QRM, he changed up to 52 metres, the result being that his signals were without the slightest trace of QRM, and quite as strong as on the lower waveband. So that it is to the advantage of both British and Canadians to hook up on this wavelength, and so keep clear of the terrible QRM on the lower waveband.

Incidentally, 1DD informs me that my station was the first G to work a Canadian when the latter used the 52 metre wavelength.

Best 73's.

Yours sincerely,
Frank R. Neill, 5NJ.

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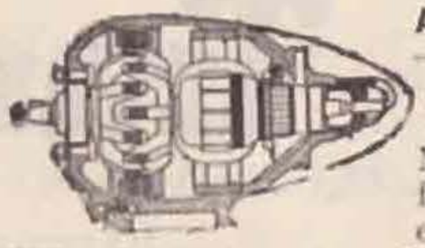

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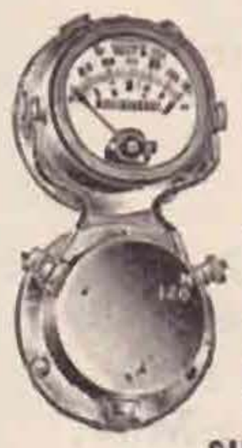

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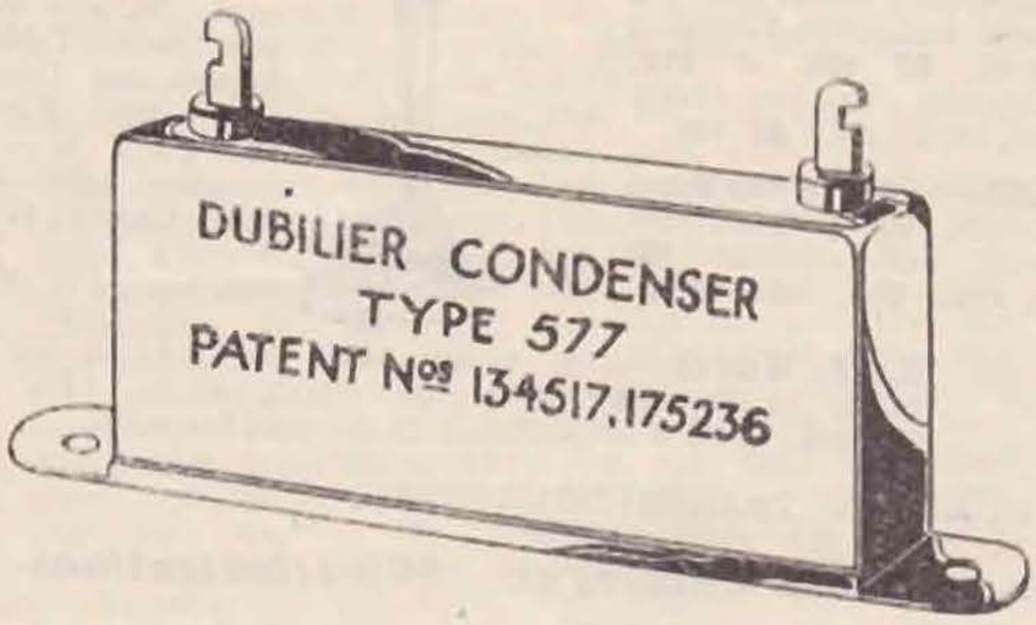

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