

Vol. 2. No. 1. July, 1926.

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ON

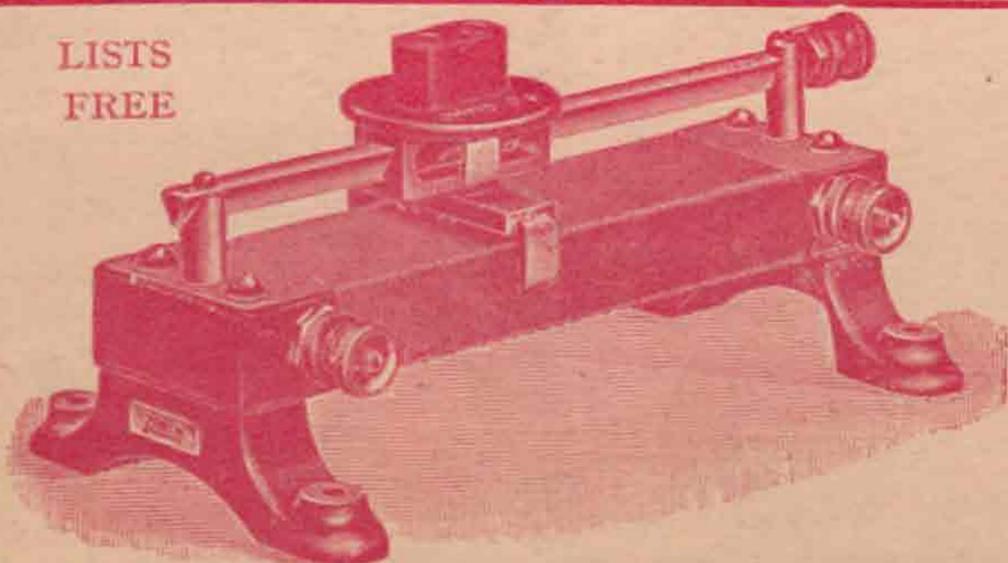
“Short-Wave Super-Heterodyne”

BY

H. J. B. HAMPSON, G6JV.

Page 4.

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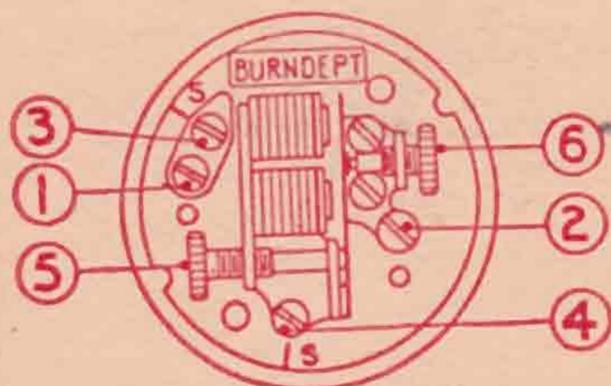


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T. & R. Bulletin

Devoted to the Interests of the Transmitting Amateur

— The Official Organ of —
THE TRANSMITTER AND RELAY SECTION
of

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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.



SUBSCRIPTION RATES

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

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ADVERTISEMENT RATES

Rates for display advertisements will be sent post free on application. Small advertisements are charged for at the rate of 1d. per word or a minimum charge of 2/6.

IMPORTANT NOTICE

IN order to carry into effect a reorganisation, long overdue, "SEC" will, in future, control absolutely the business with which his name has been for so long associated.

The same staff and administration exactly are retained, and this reorganisation scheme will enable a service to amateurs to be maintained unapproached in this or any other Country wherein amateur transmitters are licensed.

"SEC" takes this opportunity of thanking the gang whole-heartedly for their wonderful support which alone has made this change necessary or possible.

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T. & R. BULLETIN

The only British Wireless Journal Written and Published by Amateurs

JULY, 1926.

Vol. 2. No. 11.

EDITORIAL

Enter Volume 2.

WE present with this, the first issue of Vol. 2 of the BULLETIN an index to Vol. 1, which we think will be useful to those members who have taken an interest in the growth of the Journal. From this it is possible to see the names of those members who have so kindly done their little bit toward keeping this venture fed with articles which we believe have been thoroughly appreciated by all readers. Our thanks are also due to those who have kept us supplied with cartoons, notably Canadia IDD (C. W. Borrett) who has taken great pains to see that we are never without these amusing and interesting drawings. Perhaps you will permit us to have a little grouse all to ourselves at this juncture. We are always receiving "grouses," so that we are merely changing places for once in a way! It is that we should like a few more *technical* articles as opposed to humorous and semi-humorous articles, of which we receive a plentiful supply. We can still do with short humorous articles, but when you are making the choice between humorous and technical writings please give us the latter if possible.

Diplomas for Members.

We have great pleasure in announcing that we have completed arrangements whereby we are about to present two very special diplomas of merit in certain cases. The first and most important of these will be presented to members who have contributed some specially good work to the radio art. This does not mean that we propose to issue them to those people who have carried out two-way transmission with some long distance station on microscopic power; rather it is to be given as an incentive to invention, research or experiment. The primary aim is to encourage work in this direction as opposed to mere "brass-pounding." Details of the work of the recipient of these diplomas will be published in the BULLETIN. Full particulars will be published in a later issue of the BULLETIN, but it might be said that it will be necessary for an applicant for one of these diplomas to get a number of members to back his application on its merits.

The other diploma will go to members who, in the opinion of the committee, have contributed some extra special services for the well-being of the Section or the BULLETIN. Both diplomas will be something very good, and we anticipate that this

venture will result in much good and profitable work on the part of members.

Correspondence.

Our post-bag has now become so heavy that we can no longer undertake to reply to correspondents unless a stamped addressed envelope is enclosed for reply. Those letters which are considered of general interest to members will be published in the BULLETIN, whilst those which are received without an accompanying stamped envelope will in future be noted but not replied to. These remarks do not apply to correspondence from area organisers or area sub-editors.

Section Notes.

Mr. C. A. Jamblin (6BT) was co-opted on to the T. & R. Committee on Friday, March 26, with a view to his rendering assistance to the T. & R. Section in the matter of the QRA and QSL Section.

* * *

Mr. F. A. Mayer (2LZ) has been co-opted on to the T. & R. Committee with a view to his rendering assistance to the T. & R. Section in the matter of representing the Southern Area.

* * *

Mr. F. R. Neill (5NJ) was co-opted on to the T. & R. Committee on Friday, June 18, with regard to the organisation and representation of Irish transmitters in the Section.

* * *

Mr. S. R. Wright (2DR) was co-opted on to the Committee on Friday, June 18, with a view to his representing Northern amateurs on that Committee.

* * *

Mr. G. Wyllie (5YG) was co-opted on to the T. & R. Committee on Friday, June 18, with a view to his rendering assistance to the Section in the matter of his representing and organising Scottish amateurs.

* * *

Captain H. J. B. Hampson (6JV) was co-opted on to the Committee on June 18 with a view to his representing Mid-Britain amateurs on that Committee, and also with regard to his assistance of the Section.

* * *

SUBSCRIPTIONS.—Members are again reminded that certain subscriptions due last September are still unpaid by some, and that Certificates of Membership are only issued to those whose subscriptions are paid up to date.

Prospective new members should note that, on joining between now and the beginning of September, their subscriptions are 7s. 6d., the full sum of 15s. only being demanded for the full year's membership.

A Short-Wave Super-Heterodyne

By H. J. B. HAMPSON, G6JV.

This article is an introduction to a series of four very excellent articles on the short-wave super-heterodyne receiver. The author is speaking from actual experience with the gear experimented with by him in various stages, and the complete set of articles will, it is thought, be invaluable to members contemplating installing apparatus of this description at their stations. We have had considerable experience with super-hets at G5TR, and after a number of years of experience it is thought that the super-het method of amplification is the only efficient method of obtaining efficient H.F. amplification available to the experimenter on these wave-lengths.—Ed. Note.

IN view of the manifest difference of opinion existing among experimenters regarding the value of the super-sonic method of reception for short-wave purposes, it is thought that an account of experiments carried out at G6JV extending over 2½ years may be of some small interest.

The writer's first experience of the super-heterodyne was in the autumn of 1923, when an instrument was built primarily for the Broadcast Band of Waves. The design provided for one stage of H.F. at incoming frequency (tuned anode) oscillator—coupled to anode inductance of H.F. valve—first detector, with reaction to anode H.F., three stages of transformer coupled intermediate frequency, and second detector.

This instrument was made to function with reasonable efficiency as low as 50 metres—KDKA on 102m. was first heard in January, 1924, and the Eiffel Tower transmissions on 115m., 75m., and 50m. were copied in the same spring. By this time a second I.F. amplifier had been constructed having but one stage of I.F. and a detector, since this proved adequate and saved L.T.

Minute details of this instrument are of no interest to the transmitting amateur, and will not be given. Experiences with it, however, established the following:—

(1) the H.F. stage amplifying at incoming frequency is an advantage both from points of selectivity and DX ability.

(2) Provision for regeneration at both incoming and I.F. frequencies is a great asset in increasing DX ability, but excessive use at either stage ruins quality of reproduction.

(3) The complication and extra controls involved by (1) and (2) make rapid searching impossible, and such an arrangement is only of value to the transmitting experimenter when carrying out a schedule with a station whose wave-length is previously known.

(4) The effectiveness of the H.F. stage decreases with a reduction in wave-length, while difficulties in tuning and stability increase with any set so equipped.

(5) Interference from long-wave stations forcing signals into the I.F. amplifier is apt to be most troublesome until adequate and elaborate shielding is provided. Even then battery leads must be kept short as possible.

Based upon these experiences, a special short-wave instrument was designed in which the H.F. stage was abandoned, but provision for regeneration at the incoming frequency was provided. Experiences on B.C.L. waves proved that maxi-

imum sensitivity and optimum purity of reproduction could not be obtained at one and the same time. The use of critically tuned air core transformers, together with provision for regeneration up to the point preceding self-oscillation, either in the circuits associated with the incoming or the intermediate frequencies, while greatly increasing sensitivity quite ruined the quality.

Now "quality," while of the utmost importance to the designer of B.C.L. apparatus, only matters to the transmitter, so far as mere intelligibility is concerned. He must *understand* DX fone but nothing more is really necessary.

And so a new I.F. amplifier was constructed whose cabinet was lined top, bottom, and sides, and between I.F. stages with stout tinned iron (the exchequer being unequal to copper sheet!) Air core transformer coupling was adopted for the input filter and the first two stages, while the last stage was tuned anode coupled (as grid condenser and leak was to be used in any case).

Both primary and secondary of the input transformer of "filter" are fully tuned with variable condensers, while the secondary of each interstage coupling transformer and the anode inductance of the final stage are critically tuned also with variable condensers. This permits that frequency for the I.F. amplifier to be chosen which is most free from interference.

All transformers are provided with adjustable coupling between primary and secondary—the writer being a firm believer in loose coupling throughout, and thinks that this plays no small part in the success of a super-heterodyne.

Where coupling is loose, where secondaries of transformers contain a considerable preponderance of turns over their primaries, and where interstage shielding is complete, little trouble will be experienced from the tendency towards instability so generally associated with multi-stage H.F. amplifiers, and the writer finds that excessive grid damping is unnecessary.

The grids of the H.F. valves are connected to the moving arm of a rotary potentiometer which is itself connected across the L.T. battery.

This arm is never less than three-quarters of its travel towards the negative end, and if the centre of such a potentiometer may be regarded as the zero point it is seen that actually a negative potential is always applied to the grids, while a small movement of the arm effects a delightfully smooth control of regeneration without causing objectionable losses. This, of course, only applies when each stage has been critically tuned. Neutralising could be tried, but the writer has found it unnecessary, and would like to warn any who think of trying it against the danger of parasitic H.F. oscillations—especially if neutralising is effected by means of centre topped primaries.

Now, since the stage of H.F. preceding the first detector has been abandoned, there was no anode coil to which the oscillator inductance could be coupled. Moreover, since the instrument has been designed essentially for short-wave work, the number of turns in the closed circuit of tuner is naturally few, and it was thought that the usual system of "pulling out" a few turns from the secondary as a "pick-up coil" would be far from ideal. Experiments were, therefore, made in which the oscillator

(Concluded on page 12)

The Wilson Break.

By 5YM.

TO the man who has to derive his power from accumulators some form of the familiar induction coil is a fascinating temptation. There must be a large number of discarded 30-watt T.V.T. units in the junk boxes of transmitters up and down the country. These units are not really suitable to our purpose for they deliver a lot of volts and very few milliamps. They give a nasty note that sounds like raw a.c., and any attempt to smooth and rectify results in an almost complete disappearance of those very necessary milliamps.

The 100-watt "Adnill vibrator" unit is rather a different proposition. This is so arranged that a double contact breaker reverses the current through the primary of the transformer. It is an efficient generator and can be required to deliver 10 to 20 watts of rectified interrupted d.c. When it is working properly the note is good and sharp. The trouble is that it is almost impossible to prevent the heavy sparking at the contacts and they have an unpleasant habit of sticking. This happens—of course—in the middle of an important DX QSO—always!

The most efficient form of the induction coil generator is that known as the "Wilson Break." In this the contact breaker is a motor-driven wheel, fitted with copper contacts, contact being made and broken by two slightly staggered brushes. These brushes can be adjusted to give an almost sparkless make-and-break, when the motor is running at the proper speed.

The 150-watt Wilson Break, ex-W.D. generators, such as can be obtained from Leslie Dixon, are beautifully made pieces of apparatus and, obviously, cost many times the £3 asked for them. Unfortunately they are unprovided with any wiring diagrams or working instructions.

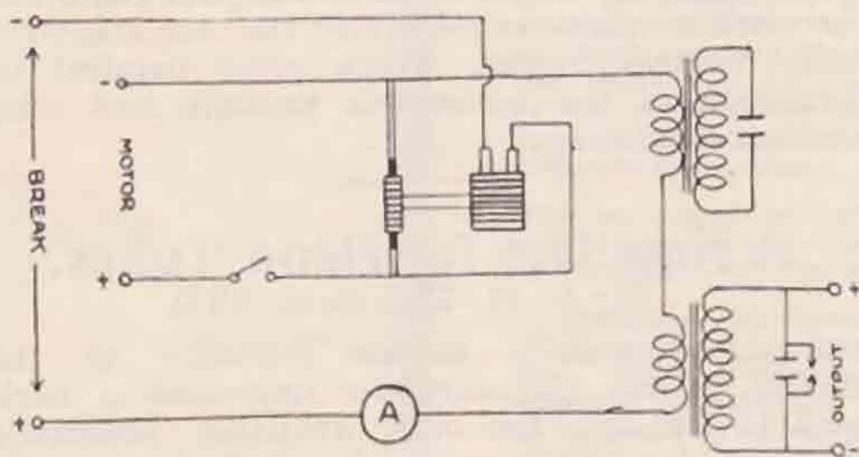


Fig 1.

The generators, "as issued," are wired as shown in Figure 1. So far as can be ascertained by experiment they were designed to work with a battery of 24 volts on the motor and another battery of 24 volts across the break. As will be seen from the diagram these two batteries act as one battery of 48 volts to deliver power to the transformers, the negative pole of the "break" battery being connected to the positive pole of the "motor" battery, through the break wheel.

The system of this generator is ingenious and pretty. It is designed to reduce the induction of the spark coil to zero at the moment when the primary circuit is broken, thus reducing the current to practically zero and giving a sparkless break. An oscillating circuit, consisting, in this instance,

of the tuned secondary of a step-up transformer, is connected in the interrupted power supply. When the frequency of the interruption of the supply is in resonance with that of the secondary the energy stored in the secondary tends to boost the incoming power to the primary of the spark coil every time the rotary interrupter "makes." This results in very efficient working and a reasonable supply of output power for the input from the accumulators.

Obviously the speed of the motor must remain reasonably constant and the make and break must be in resonance with the frequency of the auxiliary circuit. A shunt-wound motor is used to give reasonable constancy and the make and break brushes can be adjusted, once the speed of the break wheel is nearly right, to get the point of resonance.

In its original form the apparatus is not suitable for the average station. A battery of 48 volts is rather large when charging has to be done a mile or so away from the operator's home. It is better to rewire the circuit as shown in Figure 2, when an output to the transmitter of from 10 to 20 watts can be obtained from an 18-volt battery and an output of nearly 50 watts, in best working conditions can be obtained with a 24-volt input. The efficiency of the apparatus when worked with a 24-volt battery is much higher than when worked with smaller pressures as the motor can then be made to revolve the break wheel at about the right speed for resonance with the oscillating circuit. But, by careful adjustment, very good results can be obtained by using the 18-volt battery on motor and break and adding as many cells as possible as additional "juice" on the break.

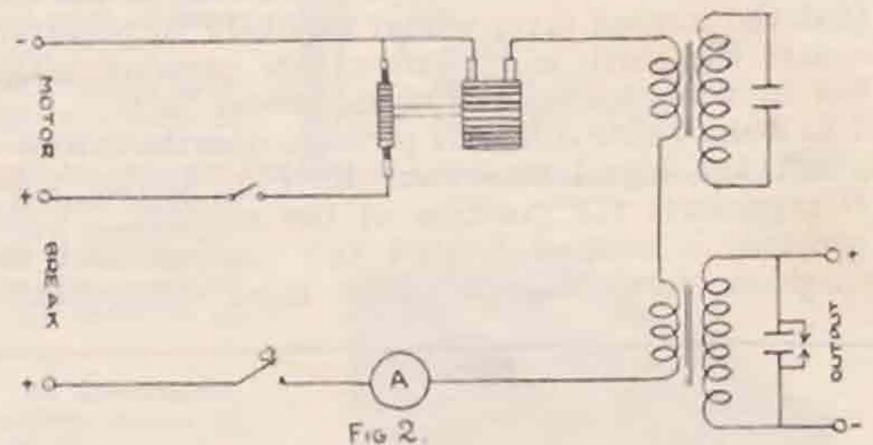


Fig 2.

Besides rewiring, as shown in Figure 2, a certain amount of work will probably be necessary on the motor. The commutator and brushes will need cleaning and the break brushes will probably need easing and resetting to allow the break to revolve at a high speed. Correct working is indicated when the make and break is practically sparkless and the maximum current is delivered to the transmitter for the input. A point to remember is to have the valve alight when making adjustments because the apparatus will deliver something over 2,500 volts on no load and the result of pressing the key when the valve filament is not hot will be a disconcerting display of sparks and fireworks.

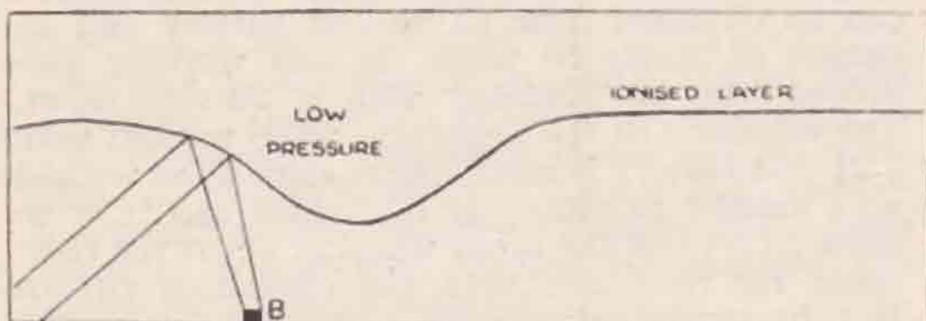
When the apparatus is working properly the resulting note is a fairly sharp i.c.w. Making and breaking the supply to the break, with the transmitting key, does not seem to result in any pronounced chirping nor key-clicks. A much better note is obtained if the output from the generator is rectified, and better still if smoothing chokes are

(Concluded on page 12)

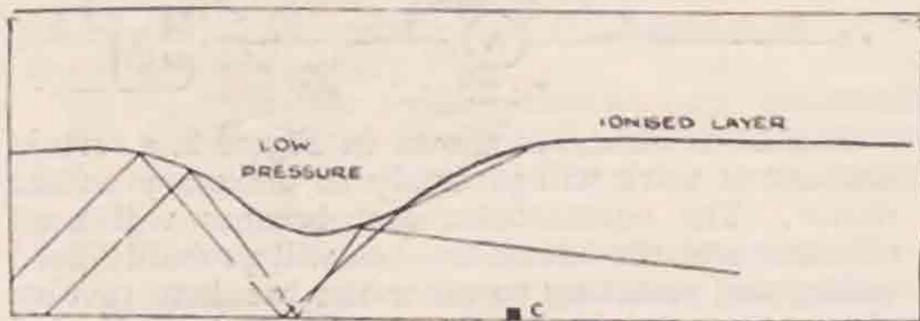
"Wireless and Weather"

ALTHOUGH remarkable success has been attained with short-waves, there still remains an undesirable feature of long-distance communication—namely, inconsistency. Whilst this article is not written to suggest any method of overcoming this inconsistency, it is hoped that it will explain the causes of the variations, and thus help those desirous of perfecting short-wave transmission.

Those who have studied the variations will know that meteorological conditions bear some relation to wireless, more especially the barometric pressure. Most of those who have studied on this line have only considered the local barometric pressure, but if results are compared with a weather map showing isobars a much more interesting comparison is found. A depression lying across the path of the signal within 600 miles of the receiving station will be found to cause a deteriorating effect on the signal received; the deeper the depression the greater is the effect.



Recently Capt. Duncan Sinclair, in a lecture before the R.S.G.B., suggested that the relation between barometer and wireless was due to the fact that the ionised layer would be likely to penetrate nearer the earth in regions of low pressure. This fits in remarkably well with actual facts. Figs. 1 to 3 show how different pressure distributions will affect the signal received. In Fig. 1, the point B represents the position of the receiver. A depression is centred behind this station, and the diagram shows the heaviside layer consequently

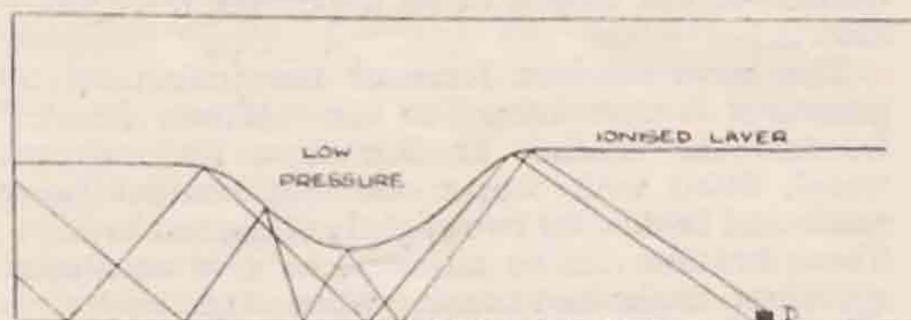


falling to a lower level. The downward slope of the layer causes signals to be concentrated on to the receiving station. In Fig. 2, the station C is influenced by the opposite effect—the signal is scattered by the upward slope, causing weak signals; it is even possible that the station may be in a "skipped" area. If the depression is some distance away from the station, as with the point D in Fig. 3, the signal will be only slightly affected. It will thus be seen that the most desirable conditions are a rising pressure (or level of layer) in the direction of the transmitter.

As an actual example, the conditions reigning during the evening of December 27, 1925, may be considered. Pressure was high over South France and low over the Hebrides, the isobars running

roughly East and West over the British Isles. From this it is to be expected that good signals would be received from the South, and the antithesis from the North. Signals were undoubtedly strong from the South. On a signal valve receiver OA6N was heard easily readable, as were A3BD and A3XO. Later on a few North Americans were logged, but not of satisfactory strength. During the last fortnight of 1925 numerous West European stations were in communication with South Africa, Indo-China and Australia during the evenings, due, no doubt, to the high pressure then prevailing over South-Eastern France.

It has recently been evident that British signals in some parts of the world are not so easily received as in others. Examples of this case are the Pacific coasts of North and South America, Japan, and in a lesser degree, South Africa. In each of these cases the pressure rises as the signal approaches its destination, resulting in the level of the heaviside layer sloping upwards away from the transmitter. The extreme variability of North American signals received in this country can be similarly explained. There is an almost permanent region of high pressure



over the Azores and a corresponding region of low pressure over Iceland. Thus, in the intervening region there is sometimes an anti-cyclone and at other times a depression, the former bringing strong signals and the latter weak.

Finally, if any readers should like further to investigate the effects of meteorological conditions on wireless, they should study the Air Ministry's daily weather report, which gives detailed information of the barometric pressure and other weather conditions.

A New Use for Neon Tubes.

By E. H. ROBINSON, 5YM.

For tests with a Mackie generator at this station it was necessary to improvise a back-load to the key, the only available resistances being inadequate for the job. A brain-wave led to dragging out some Neon tubes from the junk cupboard. These are without resistances. Two of the "beehive" pattern and one with "I" electrodes, in series, made exactly the right back-load when feeding a Mullard 0 50 valve, and there was no appreciable change in speed of "revving" when the key was pressed. This certainly seems a cheap way of providing a back-load to take 30 to 50 *m a.* current. The chain of Neon tubes is connected up just as though it was a resistance. If this back-load is kept in work permanently it will have to be put in a box, as the glare when the key is up is a bit trying and there are no children to amuse!

ED. NOTE.—It should be noted that Neon Tubes will not take an overload for any appreciable length of time.

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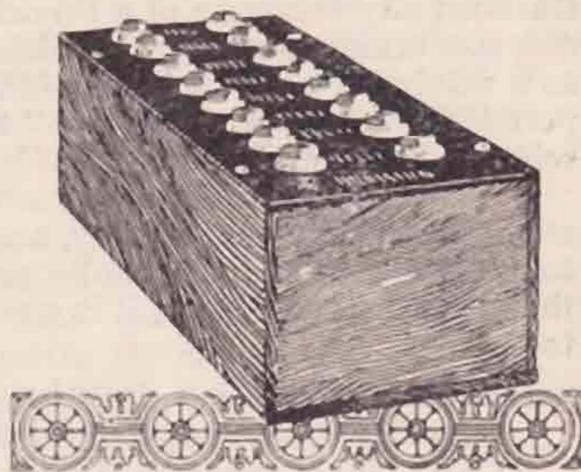
The Dubilicon is a multiple condenser containing eight separate units, the terminals of each unit being brought out to sockets on the lid. By using Clix plugs (made by Messrs. Autoveyors, Ltd., 84, Victoria Street, S.W.1) of which two are given with every Dubilicon, the units can be connected in a variety of series, parallel and combined series, parallel arrangements giving a very large number of different capacities.

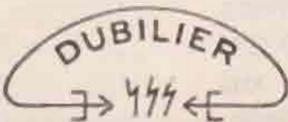
The uses and advantages of the Dubilicon, which we have summarised above, make it more than worth its low price of 30/-.

In addition, the purchase of a Dubilicon entitles you to enter for the £200 prize competition. All you have to do is to estimate the number of different capacities you can get by connecting up the first five units in various ways.

Ask your dealer about one to-day—and mind you enter for the £200 competition! He will tell you all about it!

*The
Dubilicon*



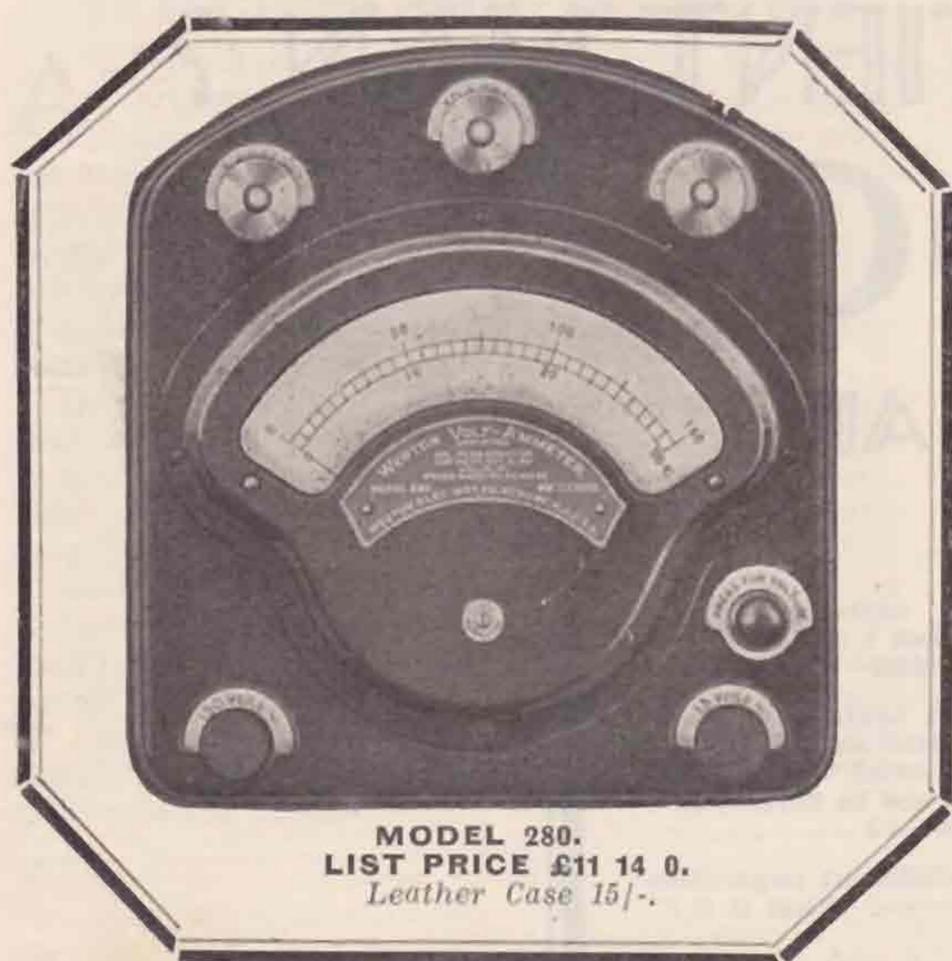
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Greenly's

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I think it is generally recognised that the transmitting amateur transmits because of and to further his experiments in wireless telegraphy. It is also well known that he cannot transmit any messages of a private nature, or those not concerning his tests. It has struck me that, as a whole, we are not taking full advantage of the permission granted to us to "transmit messages solely relating to experiments."

It is a very rare thing to have a message from anybody or have one to relay, and this prompts me to ask those who are more fully versed in translating the permits issued to us, if it would not be possible to—

- (a) Start a system of relaying or delivery of messages, keeping strictly within our permits.
- (b) Lay down recognised form of preamble and procedure to be taken with such messages.

There seems to me to be dozens of different ways in which such a system would be of use to us. Fixing up schedules, asking for information on abstruse points, arranging collaboration in tests, being a few. I feel certain that this idea would save many hours of calling "Test de—." I know this has its uses, but does not always obtain one the precise information required.

In any case, let us have more schedules. The usual reply when asking for one seems to be "cul" or "cuagn." The above idea would give us something to talk about and transmit.

The idea may or may not have value to the great transmitting fraternity, and therefore I should like

to see in your correspondence columns other opinions and ideas.

I am,

Yours faithfully,

W. HARTLEY, G6YR.

To the Editor of T. & R. BULLETIN.

SIR,—An unauthorised person is using my call sign. He uses a wavelength of about 150 metres, a wave which this station is not licensed to use. The reports so far have all come from North London, and he appears to work chiefly on Sundays after midnight.

I should very much appreciate the help of fellow members in tracing this unauthorised station.

Yours faithfully,

RONALD J. DENNY, G6NK.

Member T. & R. R.S.G.B.

To the Editor of T. & R. BULLETIN.

SIR,—I think I am voicing a general opinion when I state that we should be glad to see more descriptions of various amateur stations published in the BULLETIN, giving circuit diagrams with descriptions and values of components, together with photographs if available.

Now come along, "gang," who will be for next month's issue?

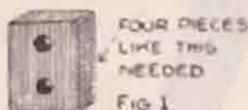
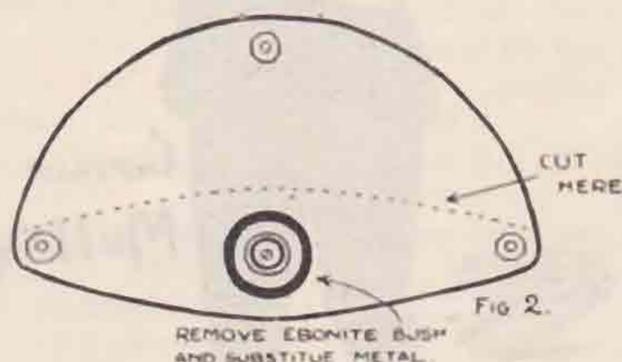
GERALD A. JEAPES, G2XV.

"Chandos," Gt. Shelford, Cambs.

A Condenser Tip.

MOST of us have old type condensers knocking about in the junk box. Occasionally, when rigging up trial transmitters and the like, a need is felt for a good low loss condenser or two, and this short article is one on how to turn practically any old metal end-plate condenser of the type shown in the sketch into a respectable low-losser.

Four short pieces of good quality ebonite, such as Radion, are prepared as per Fig. 1, and for the



size of these a little judgment on the part of the constructor will have to be used according to what type and size of condenser is to be altered.

The large semi-circular end plates may be cut down as per Fig. 2 and the assembly proceeded with, using the small pieces of ebonite to insulate the rotor from the stator plates.

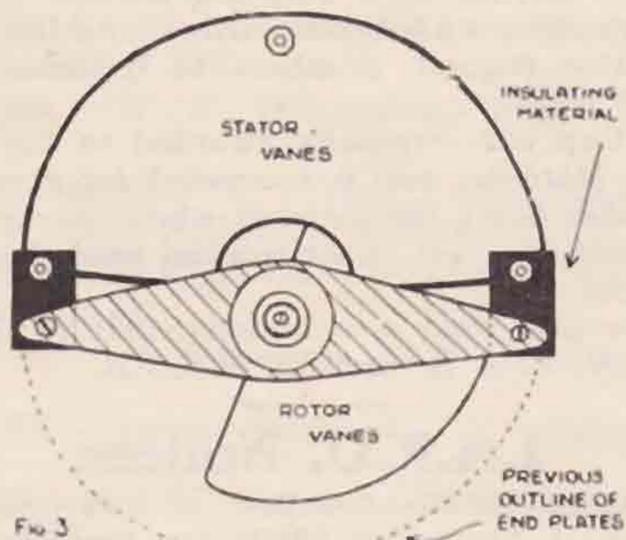


Fig. 3 is practically self-explanatory, and the ingenuity of the constructor may be allowed full scope as to other methods of fixing the insulating material.

The main point of this design is that the ebonite is out of the main field and there is very little of it. The previous insulating bushes may be taken out and metal washers substituted in order that the end plates may be connected electrically to the moving plates, giving a "grounded rotor" effect. It will also be noticed that a very low minimum capacity is obtained.

If done carefully there is no reason why a real sound job should not be made, and the writer has used these condensers with good effect in both receivers and transmitters.

G6YR.

Radio Ripples.

Being selected extracts from our postbag.

I have already received three replies to my S.O.S. I have now all the information I want. Brother hams are very good.—5YM.

* * *

For your information and others interested, English stations come in here FB now and then, but, as a rule, they don't have much chance on account of QRN. I don't know whether this is the case with American stations in the East, say, from Pennsylvania on up to Maine, but conditions here are not very favourable. We have had very heavy QRN for the past two months, and every indication points to the condition lasting throughout the summer months and possibly until October or November. My suggestion would be that, when you fellows work anyone in the Southern part of the U.S.A., that you make your dots a little heavier. That is the only thing that makes it hard to copy your stations.—E. M. WINTER, Post Office Box 377, Jacksonville, Fla., U.S.A.

* * *

With regard to small advertisements in the BULLETIN, I hope soon to take advantage of these when I shall be trying to dispose of my present generator and other tackle. *Thank you,* 2TN.—G2TN.

* * *

I have had a note from T. H. Harris, Mintaro Avenue, Enfield, near Sydney, N.S.W., who says best reception for G's and Europeans 4 p.m. to 6 p.m., Sydney time, during winter, but no good in summer. Best time is in early morning both summer and winter from 4 a.m. to 6.30 a.m.—*Hams to note.*—G5VL.

* * *

Don't send any BULLS, OM—you can have all mine if you wish. I thought they were waking up at last, but it appears that they are still in a state of somnolence. Probably they have forgotten my call sign by now—apparently having omitted my name from the register. This month they sent out the BULL minus some of its pages, and it is quite a usual thing for me to get postcards *re* meetings after the meeting has taken place, i.e., if I get notice at all.

EDITORIAL NOTE.—As regards the last extract, we are always pleased to hear what people think of us. As this last letter was not sent to us officially, we refrain from giving the name of the writer. We have, however, an adequate explanation for our little faults, which are being remedied.

* * *

"Radio Ripples" will, in future, be a permanent feature of the BULLETIN, and we think that it will always be worth more than a passing glance.

*Technical Articles
are still wanted!*

The Dobilicon.

We have received from Messrs. The Dubilier Condenser Co. (1925), Ltd., Dacon Works, Victoria Road, North Acton, W.3, full particulars of their multiple capacity condenser marketed under the above title. The maximum capacity of the condenser is .011 microfarads, and the range of tappings is as follows:—

.0001 mfd.	.001 mfd.
.0002 mfd.	.002 mfd.
.0003 mfd.	.003 mfd.
.0004 mfd.	.004 mfd.

It is, of course, obvious to members that by putting these capacities in series or parallel or series parallel a wide range of capacities is obtainable, and this enterprising firm has made this fact the subject of a competition, the prize being £200. The purchase of one of the condensers makes the purchaser eligible to enter the competition. The condenser supplies a long-felt want, and those amateurs who are also experimenters will quickly realize the usefulness of the gadget. It is not out of place in these columns to say that it should find a place on every experimenter's bench.

“Extracts from the Second Book of Barnacles.”

By 2SW.

O H, hams, cease thy wailing. Do not strike yourselves and cry, we are miserable sinners; it is unnecessary. Behold, I say unto you who are stricken with the Bug of Radio, be not afraid, for the Great White Chief, thy Master, is a compassionate man and looks upon thy works with a kindly eye. He, who dwelleth in the Kingdom of the Post Office is an upright and righteous man and will cleave to the chine any ham who disobeys his laws.

Take heed, then, and anger not this mighty man, for I say unto you that he who varies as much as one kilocycle from the straight and narrow band will be plunged into the uttermost depths of Hell.

List ye then unto the parable of the Wavemeter, which is written in the book of Regeneration:—

“And about this time there dwelt on the banks of the mighty Irwell a ham, who radiated much jargon on that wave known unto the scribes as 440 metres. One day he received a barrow-load of stone tablets, which at that time comprised the T. AND R. BULLETIN. And upon reading these mighty works a great light penetrated his dome and he said unto himself, “By the Great Horned Elk, I will reduce my QRH, yea, even unto 45 metres.” And he straightway plied his stone hatchet and did cleave off large gobs of inductance. And on the evening of the second day he did sit upon his key, and was amazed to receive replies from a large number of thugs scattered all over the burg. He did strike himself upon the abdomen and exclaimed in a loud voice, ‘This is the Berries.’ But he had not measured the frequency of his wave, and the P.M.G., hearing a strange sound outside the ham band, did track him down and straightway descended upon him and did jump upon his neck, stabbing him deeply; yea, even unto the brisket.”



The Rotab Challenge Cup.

The Cup is at present held by Mr. Simmonds (20D), it having been awarded to him last year. It is now again up for competition, and the T. & R. Committee request members to recommend this year's winner.

The Cup was originally awarded to the Section by Mr. Marcuse, and is competed for every year, the winner being the member who is considered to have done the best experimental work during the past year.

Please post your nominations early to the Hon. Secretary, T. & R. Section, R.S.G.B.

I.A.R.U. Notices.

Subscriptions now due may be forwarded direct to Mr. E. J. Simmonds (20D), the President of the Union. This will save members a certain amount of time and expense.

LIST OF IRISH RADIO TRANSMITTERS.

- 11B.—Col. M. J. Dennis, Fortgranite, Baltin-glass, Wicklow.
- 12B.—Wireless Society of Ireland.
- 13B.—Wireless Society of Ireland.
- 14B.—J. P. Campbell, Martello Terrace, Sutton, Co. Dublin.
- 15B.—W. R. Burne, 34, Dame Street, Dublin.
- 16B.—H. J. Duncan, 29, St. Anne Street, Dublin.
- 17B.—W. F. Warren, 130, Tritonville Road, Sandymount, Dublin.
- 18B.—Messrs. D. O'Dwyer, 9, Upper Leeson Street, Dublin.
- 19B.—H. A. Goldsburg, Shaftesbury House, Fethard, Tipperary.

QRA and QSL Section.

WE apologise to our members for any delays to their queries during the period of the general strike, which, of course, were unavoidable under the circumstances.

We are now working again at full pressure to schedule.

As our efforts to provide a free bulk exchange of QSL cards with France and Belgium appear to be appreciated by some of our members, we now propose to extend the scheme to Holland, and the Dutch Section of the IARU are very kindly organising the collection and dispatch at their end. The day of dispatch from this side will be the same as for France and Belgium, i.e., Wednesday. No addresses must be put on the cards.

We now learn that the Journal des 8 is not sending us all the cards they receive for "G's," and we have therefore to make other arrangements. The Journal des Emetteurs, of 53, Rue Reaumur, Paris, have undertaken to distribute all our cards for us, and send all cards received to this section.

Will all members, therefore, when carrying out tests with French amateurs, ask them to QSL via "J. des Ems."

This announcement is also being made in the J. des Ems, a similar magazine to the J. des 8, and in the parent magazine, "L'Antenne," which has a large weekly circulation, so that the difficulty of obtaining French cards should now cease to exist.

Supplementary to previous lists, the following forward cards for their respective countries, when QRA's are unknown:—

ARGENTINE.—c/o Radio Revista, Lavelle, 1268, Buenos Aires, Argentine.

AUSTRALIA.—F. D. Bell (Z-4AA), Waihemo, Palmerston, Otago, N.Z.

BERMUDA.—W. F. Horsington, Paget West, Hamilton.

BRAZIL.—Alvaro S. Freire, Rua Oswalds Crwz, 46, Ecarahy-Nichteroy, Estado do Rio.

CZECHO-SLOVAKIA.—M. Schaferling, Praha XII, Sumavska 12.

CHILI.—Luis. M. Desmaras (2LD), Casilla 50D, Santiago.

DENMARK.—James Steffesen, 22, Eklersvej, Hellerup.

FINLAND.—K. S. Sainio (S-2NM), Merikatu 3A, Helsinki 10.

INDIA.—R. J. Drudge-Coates (Y-DCR), Cambridge Barracks, Rawalpindi.

LUXEMBOURG.—Jean Wolff (L-IJW), 67, Avenue du Bois, Luxembourg.

MALAY.—J. P. C. Bell, F.M.S. Railways, Kuala Lumpur.

NEW ZEALAND.—(As for Australia above).

NORWAY.—J. Diesen, Moen-i-Maalselv.

RUSSIA.—Wladimir Petroff, U.S.S.R., Nijni Novgorod Laboratory, Russia.

YUGO SLAVIA.—M. Torbarina (YS-7XX), Dubrovnik 2.

QSL's WAITING.

2A—A, CK, IZ, JY, K, KG, L, LP, LT, OX, P, PU, RZ, SG, TM, WD, WH, WK, XU, YM.

2B—A, AZ, CA, D, DA, DK, DY, G, GA, GI, GO, H, HC, HG, I, II, IU, JK, K, KC, KI, LG, LM, M, MA, MD, MM, MO, MW, NU, OW, PC, Q, S, Z.

2C—A, G, H, O, PC, 5B—U, V, U, V, Y. 5C—C, O, X.

2D—A, F, K, M, X, Y. 5D—C, H, K, S, X.

2F—G, K, N, O, Q, U. 5F—J.

2G—H, M, S. 5G—F, H, L, O, T, U.

2I—A, I, N. 5H—G, J, S, X.

2J—B, D, P, U, X. 5I—D, G, K, O, R.

2K—F, T, W, Z. 5J—B, G, H.

2L—F, H. 5K—I, J, M, T.

2M—C, F. 5L—B, K, Y.

2N—C, J, N, Q, U, X. 5M—B, G.

2O—C, F, J, S, U, W. 5N—B, F, G, Q, R, W.

2P—P. 5O—B, K, L, W.

2Q—A, D, H, M, V. 5P—D, H.

2R—M, L, O. 5Q—T.

2S—L, W. 5R—C, G, Q, Z.

2T—F, K, O, T. 5S—A, G, K, N, R, T, U.

2U—D, L, N, X, Z. 5T—S, V.

2V—A, L, O, Q, R, S. 5U—A, Q, R, V, Y.

2W—A, M, W, Y. 5V—A.

2X—C, M, P, Q. 5W—B, Q.

2Y—A, B, O, Q, S. 5X—O, Y.

2Z—A, F, U. 5Y—T, V, Z.

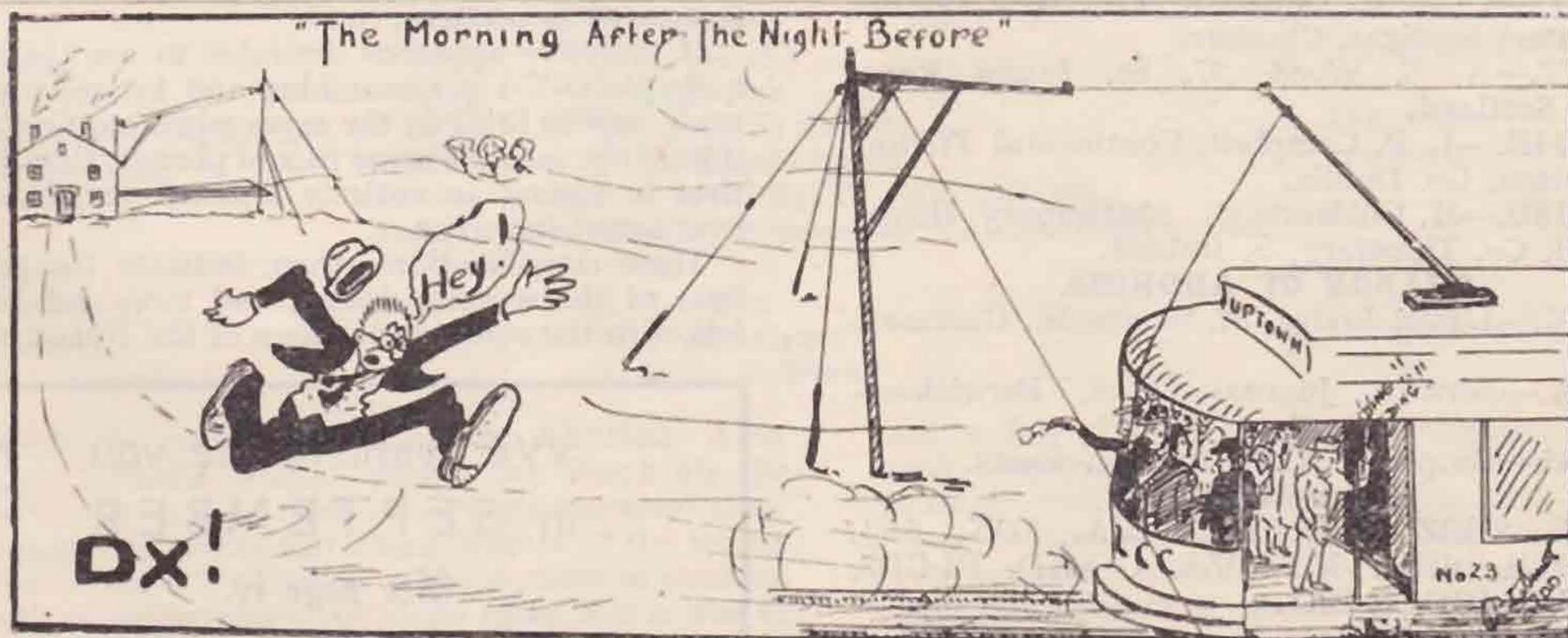
5A—G, X. 5Z—C, H, Z.

6A—R, T, 6BQ, 6CD, G, J, P, R, Y, 6DN, O, V, W.

6F—M, T, Z, 6GF, H, K, N, V, W, X, 6HU, Y, Z, 6IA, V, Y.

6J—H, J, L, O, U, W, 6KB, I, S, U, 6LC, J, O, U.

6M—H, J, X, 6NK, O, R, U, X, 6OG, K, O, T, U, V, W, X.



Obituary.

We have heard with the deepest regret that Mr. P. L. Savage (2MA), of Lowestoft, son of Councillor H. Savage of that town, has signed off for the last time, and passed quietly away to the far beyond.

He was a genuine experimenter, one of the old gang of pioneers of those early spark days, of very pleasant disposition, and particularly well known in amateur circles. With the low power at his disposal he accomplished excellent European DX. His last work, but a few weeks ago, was in connection with Hertz aerial transmission. He will be sadly missed, and we extend to mother and father and the sorrowing members of the family our sincere and heartfelt condolences in their great loss.

Notice.

Owing to great pressure on our space this month, we regret that we have had to hold over many interesting articles for a subsequent issue. We ask the patience of contributors in this matter.

Will all Area Organisers and Sub-Editors kindly see that their reports do not exceed one page in future. It is left to their discretion to cut out whatever matter is not considered of sufficient interest to merit the use of space beyond this allowance.

QRA & QSL Section—(concluded from page 11).

6P—F, M, T, U, 6QM, O, 6RO, R, W, 6SF, M, V.

6T—G, K, M, R, 6UF, H, P, S, 6VG, J, 6WR.

6Y—K, P, S, U, 6ZA, B, C, K, GW, IIZ.

Will all members who know the owners of any of these calls please make a special point of helping the T. & R. BULLETIN by acquainting them that cards are awaiting claiming by them and they can be had by forwarding stamped addressed envelopes to QSL Section.

QRA's.

G-2BRV (AA).—J. F. Ramsay, Buchanan House, Greenhead, Glasgow.

GI-5MV.—J. P. McVeigh, 84, Edward Street, Lurgan, near Belfast.

G5SO.—A. M. C. Christian, 270, New Chester Road, Port Sunlight, Cheshire.

G5WT.—A. S. Wood, 37, St. James Road, Forfar, Scotland.

GW-14B.—J. P. Campbell, Continental Trading Co., Sutton, Co. Dublin.

GW-19B.—H. Goldsbrough, Shaftesbury House, Fethard, Co. Tipperary, S. Ireland.

CHANGE OF ADDRESS.

G6OX.—L'Islet Lodge, St. Sampsons, Guernsey, C.I.

G5BA.—Berwick Journal Office, Berwick-on-Tweed.

G6NH.—Coopersall Hall, Epping, Essex.

QRA's WANTED.

G2BL, 2BOZ, 2BQ, 2NC, 2ZA, 5DX, 5FJ, 5UR, 5WL, 6HU, 6OT, 6ZA, G-AKD, PI-CDS, A-5KW, Y-1CD, R-BAI.

G6BT.

The Wilson Break—(concluded from page 5).

used. The rectifying plant need consist of only one 30-watt tube for ordinary outputs and the ordinary care to have the rectifying apparatus well insulated must be taken. Reports received at this station indicate that the note given when the rectifier is used without any smoothing circuit is a pleasant and sharp one, easy to read and having considerable penetrative power. I have had several reports of a "d.c." note, when the break wheel was running really well, without any rectification.

The Wilson Break would seem to be a fairly good generator for stations not blessed with power from the mains, provided that a large capacity battery of the necessary voltage is available. With regard to this battery, as the whole of the power taken from it is interrupted, something approaching the "intermittent" capacity may be expected from the cells. The drain is fairly heavy, however, and the biggest possible cells should be used. My experience is that for low powers a battery of 60 volts "actual" will give very good service, but when 24 volts are used it is well to provide something really big, such as a car battery rated to discharge 5 amps for 26 hours.

A "dull emitter" valve, such as the DET1, with a low internal resistance, is very suitable for working out this unit, good results being obtained with anything from 10 to 40 volts input to the anode.

One final point. It is well to have the motor break, when working, in a position where air can circulate freely round it; otherwise it will warm up considerably and shift from the resonant point.

A Short-Wave Super-Heterodyne

—(concluded from page 4).

was coupled to the closed circuit by means of two coils of a few turns each, one coupled to the oscillator inductance, and the other to the filament end of the closed circuit, and connected together with a pair of leads, so forming an aperiodic radio frequency feed. This system proved quite satisfactory, and has been adopted. The coupling is, of course, adjustable.

It has already been implied that, in the writer's opinion, no super-heterodyne can ever be the equal of the simple O-V-1 for rapidity of search. Some may dispute this—it is a matter of opinion—but until a really satisfactory one control is evolved the statement is probably true.

It therefore appeared desirable to use the set as a simple O-V-1 for searching and for general CW work, and to bring in the super when required, and, if possible, into the same pair of phones, thus saving time in tuning an entirely separate set, changing over aerial and so on.

These considerations, then, indicate the general lines of the writer's design, and more details will follow in the subsequent issues of the BULLETIN.

We want to see you
in SEPTEMBER
(See page iv.)

Traffic Notes.

Scottish Area Notes.

EDITOR'S NOTE.—We have much pleasure in welcoming to our Traffic Notes, notes relative to happenings amongst Scottish transmitters. Mr. Wyllie (5YG) has kindly undertaken the vast work involved in organising this hitherto unrepresented Section, and Mr. Wood and Mr. Cross have kindly placed their services at the disposal of the T. & R. Section in assisting in this work.

The arrangements made up to date with a view to dealing with this work is as shown below. Messrs. Wood and Cross are submitting monthly reports to Mr. Wyllie each month.

No. 1 DISTRICT. (MR. WYLLIE.)

Stirling, Dumbarton, Glasgow, Lanark, The Lothians, Haddington, Berwick, Peebles, Ayrshire, Arran, Bute, Wigtown, Kirkcudbright, Dumfries, Roxburgh, Linlithgow.

County.						
GLASGOW.	2BP	Daimler Co. ...	...	...	...	Glasgow.
	5MG	Milligan's Wireless Co. ...	...	...	...	"
	5YG	105, Mossgiel Road, Newlands ...	...	...	...	"
	6BQ	Now in London ...	...	...	...	"
	6NX	J. T. McDade ...	...	...	...	"
	6WG	Now in Coleraine.				
RENFREW.	2FV	W. Scott Hay ...	...	...	...	Newton Mearns.
	2TT	P. Hamilton ...	...	...	...	Paisley.
	5ST	R. R. Morrison ...	...	...	...	Kilbarchan.
	5YQ	J. Gallacher ...	...	...	...	Paisley.
	6YT	J. R. Boyle ...	...	...	...	Mansewood.
DUMBARTON.	2MG	W. Creed Millar ...	...	...	...	Bearsden.
	STIRLING.	2BB	J. Simpson ...	...	...	Bonnybridge.
LOTHIAN.	2OA	Capt. E. A. Anson ...	...	...	...	Port Seton.
	2TF	W. Winkler ...	...	...	...	Edinburgh.
	5HC	J. A. Beveridge ...	...	...	...	"
BERWICK.	5IP	R. H. Knox ...	...	...	...	Berwick-on-Tweed.
LANARK.	6OW	J. P. Brown ...	...	...	...	Hamilton.
	2BQS	J. Campbell ...	...	...	...	Uddingston.

No. 2 DISTRICT. (MR. WOOD.)

Aberdeenshire, Inverness, Morayshire, Ross and Cromarty, Sutherland, Caithness, Orkneys, Shetland.

County.						
ABERDEEN.	2JZ	R. D. Spence ...	...	...	...	Huntly.
	2VX	W. R. Clark ...	...	...	...	Aberdeen.
	5JK	L. R. Harper ...	...	...	...	"
	6IZ	E. G. Ingram ...	...	...	...	"
	6VO	D. Simpson ...	...	...	...	"
	FIFE.	5JD	J. L. Wood
MORAY.	6GQ	J. S. Souter ...	...	...	...	Elgin.
ROSS AND CROMARTY.	6JJ	Dr. J. O. P. Smith ...	...	...	...	Dingwall.
INVERNESS.	6NV	T. E. Henshelwood ...	...	...	...	Inverness.

No. 3 DISTRICT. (MR. CROSS.)

Argyll, Perth, Forfar, Kincardine, Clackmannan.

County.						
FORFAR.	5NW	E. J. Allan ...	...	...	...	Dundee.
ARGYLL.	5SQ	A. P. MacGrory ...	...	...	...	Campbelltown.
CLACKMANNAN.	—	T. McL. Galloway ...	...	...	...	Dollar.

AT the inauguration of the Scottish Area "Traffic Notes," permit me thank all the fellows who have so willingly promised their support. A rather disturbing feature of the letters I have received, however, is the number of stations that are inoperative. In many cases this is due to illness, business, studies, etc., but there must be

not a few stations presently quiescent owing to lack of enthusiasm. It is to the owners of these stations that I would specially appeal. Even if your enthusiasm has flagged temporarily, surely you can spare a little time to your gear and give your enthusiasm a chance to resuscitate itself. If you found the work interesting when you began

(quite possibly on the longer wave-lengths) you can take it that it is 100 per cent. more interesting now that we are permitted the use of the higher frequencies with their infinitely wider possibilities.

Only 45 per cent. of the stations to whom I wrote have as yet replied, and I would appeal specially to the "hams" in the "E" and "S.E." districts, as there are a number of prolific transmitters in this area, and I am anxious to appoint an area Sub-Editor for this section at an early date. (5YG.)

No. 1 DISTRICT. (By 5YG.)

2BB is rebuilding and putting in a lot of new gear, with which he hopes to "tear holes in the air" very shortly.

2FV, who is principal of a wireless training college, has found business occupying all his time of late, but hopes to make a start in a week or two on 45 metres.

2OA has left Scotland, and is now located in Wales.

5IP has not been transmitting for some time, but expects to resume very shortly.

On Sunday morning, April 18, 5YG (Glasgow), was QSO with BZ6QA on 45 metres with the very low power input of 8.64 watts. 5YG's sigs. were reported a "steady R4," but QRN at the BZ end was again troublesome. This is thought to be a Scottish low power DX record. The QSO was sustained for an hour and a quarter, and the Brazilian gave his QRA as A. Santos, Box 53, Maranhao.

He will be QRT until about August 16, owing to temporary change of QRA. He has had a lot of trouble with his QSB owing to the difficulty in smoothing out the ripple from Rect. A.C. (25 cycle), but hopes to resume with a pure DC note from a "sync."

6IZ is having a very severe struggle with his aerial.

He suffers severely from lack of space, and up to now has been using a nasty little knee-shaped affair. Despite this, he has done excellent low power DX on 45 metres, having worked Paris on fone with 3 watts input. His best CW, DX on this power is 1,200 miles. He has at last been driven to a "Hertz," and has lost much skin and temper crawling over his house roof with a hacksaw, lopping "chunks" off it.

It's in a good cause OM, do bear up!

5YQ has not been active for some time, but hopes to be "on the air" again by the autumn.

2VX (Aberdeen), although licensed to use 100 watts, has been carrying out some excellent low power work. Early in April, he "contacted" with BZ6QA when using an input power of only 12 watts on 45 metres. The Brazilian reported his sigs. R5, and did not require a single repeat. Contact was maintained for over an hour, in spite of bad QRN at the BZ end.

Mr. Clark, who is a fully qualified radio engineer, is also experimenting with precision instrument design, and it is hoped that he may be persuaded to give BULLETIN readers the benefit of his researches by means of a special article. What about it, OM?

All the newcomers to the European ether have been worked on low power, and in addition, the following: Palestine (8 watts), U.S.A., and N. Africa (Algiers).

6YT is leaving for the Antipodes in a month or so, and hopes to take up transmission with an "NZ" intermediate when he gets there.

6WG (Glasgow).—Business is transferring 6WG to Coleraine in Northern Ireland, and he will shortly be heard with the same call sign and a GI intermediate. He was recently QSO with Madeira on 45 metres, using only 5 watts and was reported R7.

No. 2 DISTRICT. (By 5JD.)

2JZ is presently inoperative through lack of time.

6NX has just got started on 45 after a long sojourn in the sparsely populated regions of 150-200, and seems to be getting out well, as he has received a number of R7-8 reports.

6VO (Aberdeen) is at present on 155 metres, with 5 watts input DC, but as there is very little doing on this W-L his best DX so far is Channel Islands. He will shortly be on 45 and will welcome reports.

No. 3 DISTRICT. (By Mr. Cross.)

5WT has got rather tired of dry cell work and has installed an ML 550 volt M.G. from which he hopes to extract satisfactory "juice" at considerably less cost. He is at present working with a 10-watt licence, but hopes to have a permit for an increase of power shortly.

6GY has not been transmitting owing to University studies, but hopes to be working on 23 and 45 in the autumn, and during the summer vacation.

6KO has installed a hand generator, having found dry cells an expensive proposition. He finds it very hard work, but is consoled by the feeling that his sigs. have more "punch." Madeira—P.3GB, 3CO, and 3FZ have all been "worked" with QRK reported R4-6. Mr. Sturrock has been QSO with F, SM, and S consistently, while ISRA at Rome has also been worked. 6KO is a recent convert to 45, and expresses himself puzzled by the apparent inconsistencies of this band.

BRS6 confines his attention to reception work meantime, and like 6GY has only vacation periods in which to work. He will be obliged if anyone can give him the QRA of EAHA. (What about the QRA section OM? 5YG.)

I.A.R.U.

Mr. E. J. Simmonds asks us to say that owing to the present rate of exchange membership subscription is now 4s. 6d.

Southern Notes.

Prepared by G-2LZ

CONDITIONS for DX work are getting very favourable again, especially with South America, Australia and New Zealand. Several new calls can now be heard on the 34 to 37 metre band, and these stations are always on the look-out for us. Very few British stations are heard working on the 20-metre band, but this time of the year is the best for daylight communication on these waves. Americans can be heard and worked nearly every afternoon and evening before their signals begin to come through on the 40-metre band. Very few DX reports have been received, and I should be pleased to have more from those amateurs who have not been sending them in regularly. These notes cannot be compiled without the co-operation of those who are engaged in DX work.

2SZ, of crystal control fame is now operating

on 32 metres, using the third harmonic of the crystal. Considerable success with 'phone has been obtained, and A7CW and Z4AA have been worked.

2GO has done very well on about 12 watts, having worked RCB8, YICD, BZSN1, CIED, and the 1st, 2nd and 4th U districts.

2ZC says he has very little to report from the Channel Islands. He is testing out a new aerial, but has no QSO outside Europe yet. 6PU has been doing some good low power 'phone work, and 6HZ has been working CSAR.

5WP sends in a very exciting report. His power consists of a Newton alternator driven by an old treadle sewing machine. He evidently believes in combining a little exercise with DX work. He deserves to be congratulated on the excellent work he has done with this low-power outfit. All Europe has been worked, also U2GP, and I have heard, since receiving his report, that he has worked a New Zealander.

6QB is still struggling to get his eleven watts outside of Europe, but in spite of the fact that he has tried five different types of aerials he has not yet been successful.

5KU says his 45-metre perker has now learnt how to do DX with about 8 watts input; several U's and BZ-IAF have been worked.

5HS reports the only DX of interest is with A7CW and YICD.

5TZ, the only DX merchant in the Isle of Wight, has done well with his 17 watts. 362 stations have been worked on 44 metres, including about 12 U's, two BZ's and one A. He would very much welcome visits by hams visiting the "Garden Isle" during the summer.

5YM has gone back to third harmonic tuning with a split coil Hartley circuit. He reports great difficulty in raising local stations up to 200 miles, but beyond that distance communication is very satisfactory.

2LZ has been working a lot on the 20-metre band, and several U's and KEGK have been worked in daylight.

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G-6HO.

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WHEN BUYING RADIO.

Northern Notes.

Collected by 2DR.

OWING to the strike interfering with production of the BULLETIN for May, considerable numbers of reports have unavoidably been held over, so I have had to curtail many to bare details, in order that I shall not exceed my allowance of space.

I heard not a few polite wishes expressed that the strike would last long enough for a few hams to be placed on Government service with their stations, and if one were not afraid of being called selfish, it would have been a fine opportunity to show what could have been accomplished by amateurs.

I should like to offer my congratulations to Mr. T. Geeson, Macclesfield, Cheshire (2SO), on his admirable lay-out, and workmanlike "shack" which houses his gear, and which I had the pleasure of visiting a week of two ago.

On the whole, DX has been proceeding as usual, but from what I can see, some of the hams are finding the summer evenings very tempting and reports not so numerous. I should very much like to have a few candid opinions as to the effect of summer on 45 metre DX work. Will a few of my correspondents oblige next month?

Everyone seems to have got "phonitis" on 45 metres just now, and the ether up here is rent with 100 h.p. carrier waves. Judging by the complaints I have had from C.W. men, it would appear that the time is fast approaching when special hours will have to be agreed upon for the contending parties, for there is no doubt that the amount of 'phone work being done (and especially the higher powered stations), take up a very considerable part of the 44-46 metre band, and C.W. hams will have to look to their laurels if they wish to retain a place in the ether.

Yorkshire.

6BR (Ilkley) has now definitely forsaken London for Yorkshire, and has quickly got on the air again. He is using nine watts and a Hertz aerial. All the usual Continentals, including Spain and Finland, have been worked on C.W., whilst 'phone has been reported from Marseilles. A particularly fine report of R4 from India has been received when using C.W. with an input of 9.2 watts.

6BR and 5US are experimenting on the angular propagation of waves, and reports of either of these stations would be exceedingly welcome. If possible the exact latitude and longitude of the receiving station should be given.

5US (Ilkley).—No report.

2IH (Keighley) has recently removed, and tells me that conditions at his new QRA are so bad that he doubts whether he will be able to start up again. I hope this will not prove to be a fact, as he has done some very excellent DX work on low and moderate power. Just before he dismantled, he worked the ss. "Chantier," KEGK, and had a very stout report from China.

2XY (Leeds) has been busy as usual. (Do you ever suffer from a glass arm OM?) He recently tried the inverted L again, but very quickly reverted to the Hertz, which he finds by far the better. He has worked 16 U's, districts 1, 2, 4 and 8. Five BZ's, one Z and KEGK (ss. "Chantier"). Reports have also been received from India, California, and Cuba. He has heard one or two 7th district U's,

and tenderly inquires when we are going to work this district.

2DR (Shipley) has been QRT lately with his 50-watter being up for repairs, and has been occupying the time by rebuilding his receiver. He will be on the air again before these lines are in print. His best report so far has been from Australia (R5 when using 42 watts).

5KZ (Keighley). I have only a report for April. He has tried not a few types of aerials, and now finds the best to be an inverted L, operated at the 3rd harmonic. Having fixed this satisfactorily, and using 18 watts, he worked Yugo-Slavia, Spain, France, Denmark, Germany, Sweden and Finland in the very short space of 2½ hours, which is very quick work. (I have heard a rumour since, however, that he had to QRT then because his send-receive switch fused solid!!) He states that he will be off the air rebuilding for a couple of months, and I wish to make it quite clear that this break is not in any way connected with the fusing of the switch aforementioned!

6IG (Ripon) is a newcomer to these columns, and I hasten to say that there is welcome on the mat, OM. He has also been busy testing aerial systems, and owing to his rather poor situation, has found the Hertz the best. Using the low power of 1.7 watts, derived from dry batteries, he has been QSO all Europe, including Spain and Finland. He complains of heavy QRM from higher powered stations. The wave was 45 metres, of course.

6YR (Harrogate) has been busy with the 5-watt DX eater again. The usual Continentals have been worked on C.W. and one or two on 'phone, but having been put into touch with BZ SN1 by 2XY, proceeded to work him! The input was 4.8 watts, and if this is not a record, it must be very well on the road to it. Congrats., OM.

Cheshire.

6TW (Nantwich) is apparently engaged on burning bulbs out on the Hertz, at any rate he has had to short the bulb holder to save further expense. He has been busy on 23 metres, but finds very few people down there to work with. He worked SMUK on this wave, using C.W. and 'phone with good results. He is trying grid-controlled 'phone at present, and would be glad of reports for comparison with the choke control method.

6TW is another convert to the shack in the garden, apparently after seeing 2SO's. (How many thumbs have you hit, OM?) He hopes to have it finished shortly if the supply of thumbs holds good.

2SO (Macclesfield) is QSO all Europe on 45 metres, and has worked Porto Rico. He uses 460-volt D.C. corporation mains and a D.E.T. one valve, which combination seems to give very good results. Please send your report to 6TW before the 10th of the month, OM, Tnx.

Northumberland and Durham.

5DA (Berwick) has been concentrating on receiving this month, but keeps a schedule thrice weekly with BZ 1AW, and has yet to fail to connect. Powers down to 15 watts have been successfully used on this work. He says best times for A's is early mornings, and for O's between 20 and 21.00 GMT. U's have been irregular.

5BA (Berwick) is late of Newcastle. He is on 90 metres with 10 watts at present, but has not
(Concluded on page 19)

Mid-Britain Notes.

Prepared by 6JV.

JUNE.

IN view of the recent Inconvenience, it is scarcely a matter for surprise that reports are somewhat less thrilling this month. Rather, I think, are those who have managed to report as usual to be congratulated. Quite probably some more reports will roll along after this has been sent on its way, but I dare not delay longer for fear of bringing down the editorial wrath for holding up the "Bull." This, then, is what the gang have to say for themselves:—

Shropshire (by 5SI).

6TD reports having managed to get into touch with U.S.A. again in his new location. Most of his spare time, a very small total, has been occupied in settling down and balancing up the aerial system characteristics. A harmonic of the aerial system which came into proximity to the 45-metre band has had to be removed, as 6TD operates a 1a 5SI, and so hates all harmonics. He hopes to QSO the world again soon.

5SI has managed to keep on the air, but only just. However, he has kept QSO the U.S.A., having worked the East Coast with 11 watts with daylight conditions on the other side. The station worked says: "QRN was bad, and QRM worse, but you cut through like a knife." Also a report has been received from Australia (N.S.W.) which seems O.K. and checks up to time, QSB, etc. During a weekly QSO with Area H.Q., 6JV on 95 metres, power was cut down to 60 volts at 2 m.a., and J.V. reported all O.K. What an awful lot of juice is being wasted! 5SI wants all stations beating his point 399 watt test with U.S.A. to publish details, 'cos beating one's own test is an uninteresting game. Let's have it, OM's.

Warwickshire (by E. J. ERITH).

Not all reports have been received this month, probably owing to the strike. 6YD has done good work, being QSO with Uruguay 1CD, who reported QSB dead steady. He has also been reported in Cuba and India. Indian 1DS, using one-valve Armstrong super, gave QRK as R7. Mr. F. Smith (Saltley) has received a number of stations on his new receiver, including WGHM at Hong-Kong, 15 BZ's in 40 minutes, all U.S.A. districts, and many A's and Z's. 6YU (Coventry) has joined the T. & R. Section.

6YU has been transmitting little lately, but has been heard by YIDS (India), using only 10 watts, strength R6. He is experimenting with crystal-control, but finds that the wave often changes from the fundamental to a harmonic. He would like to hear from others who have experienced this trouble.

Cambridgeshire (by G2XV).

The "hams" in my area seem to have forgotten me this month, except 2ANO, who troubled to report "nothing doing," and enclose a little sketch—thanks very OM!!!

Now some of you must have done something this month, why not write and let us know all about it. What about a photo and description of your station so that other "hams" can get an idea of what an enthusiast you are?

The number of "hams" in this county is gradually growing, and I welcome as newcomers Messrs. J. S.

Murray and J. Mellanby, who will shortly be starting up under the joint call sign 2HK, their QRA will be Selwyn College Lodge, Cambridge, and they will operate on 8, 23, 45, 90, and 150-200 metres, good luck to you OM, and best DX. Let's have your reports each month, please.

57K and 5RT have not reported this month, although 5YK has been heard working quite a lot. Why keep it dark, OM?

2XV has nothing startling to report, having been engaged in making comparative tests with valves, many QSO's have been effected with European stations—in fact, a record number of contacts have been made, but none of them represent dx. 2XV is troubled with power supply difficulties, as all power at this station has to be supplied by accumulators, and when working on a heavy input to a 50-watter, the generator takes about 10-11 amps.—hence the worry!!! 2XV is, therefore, going down to about 6 watts to a receiving valve pending the arrival of 200 volt A.C. mains—he will then be PRO again; unfortunately this will be a long time yet.

Will ALL—yes, ALL—Cambs "hams" please communicate with me and notify me as to their correct call sign, QRA, and present working QRH, and don't forget to let me have a better batch of reports for next month's "bulletin"—it's *your* support we all need for its success. Every little helps.

Stafford (by 2KK).

6OH has been QSO with a station in Dublin using no aerial or earth, with 7 watts input, also he has been conducting some useful transmissions with a four-electrode valve on 45 metres. Very few Antipodeans have been HRD, but Brazilians quite plentiful.

6VZ has been conducting some short wave phone work, and is QSO Europe. His CW has been heard by CIED. He has been QSO YDCR, who reported his sigs. R6. 6VZ is awaiting a new generator.

2KK is very pleased with his Hertz arrangement. He is QSO Europe and hopes to be QSO the Antipodes without QRO. He reports hearing SS 2SE Singapore, and wants to know if anyone else has logged him.

Norfolk.

6JV (Norwich) has but little to report. Prior to the aforesaid Inconvenience, he tried a few tests on QRP, and found that 2 watts seems to go quite a long way even on 90 metres. These tests were really due to the lamented departure of his 0/30A Mullard. Since when the old LS5 has been fetched out again, and is still in use pending delivery of a new bottle.

He apologises to those with whom he has had schedules, but has been unable to keep since the fateful May 2. Since when he has only been QSO stations on the L.N.E. Rly., with green flag and whistle. QRM from milk churns was bad through QRN from strikers was not such as to cause undue alarm and despondency. He begs to notify the fact that now having most happily got the sack from the above concern, he is adopting the slogan "Business as usual."

JULY.

It may assist those who are acting as recruiting officers to know that any members joining from now until the end of September may do so at the reduced subscription of 7s. 6d. This will, I

am informed, carry with it all BULLETINS from April inclusive.

Owing to disorganisation caused by the recent strike and in order to straighten out things once more, reports this time have had to be forwarded to H.Q. by the 10th of month. Accordingly some (notably the usual budget of most acceptable matter from 2XV) is, alas missing. On the other hand, such reports as have come in indicate a healthy increase of activities—that is if more detailed reports may be taken as a guide—without more preamble, then, here they are:—

Shropshire (via 5SI).

Things are moving slowly in Shropshire at present. 6TD is getting settled in his new QRA, and the transmitter is running better. He has worked Australia and had good strong signals reported. Nothing further of interest has happened, except that he has not yet managed to work or get a report from South America. Neither, as a matter of fact, has 5SI, although the transmitter at 5SI has been very quiet lately. The dearth of work with South America seems to suggest that there is some difficulty in getting signals out in that direction, as all other parts of the world have been worked by the two stations. However, it may be that schedules would alter this situation, as the stations have not been making any great endeavours. 5SI has not been up in the morning since he worked New Zealand in September, 1925.

5SI, with an input of 9 watts, was the first G station to work U.S.A. on a night late in May.

Stafford (via 2KK).

6OH has been experimenting with phone and is regularly QSO Europe on 3 to 5 watts. He has a schedule with SMRU.

6UZ continues to be QSO on phone with the usual Americans and Canadians. He has been reported R8 both by S2NL and India. His note, which at one time had a very noticeable hum, has now much improved. He is expecting to QRO further soon.

2VL has been doing some excellent DX using 200 watts. Further detailed reports from this station are requested.

2WN is re-designing his transmitter, and good things will be looked for from this station. Among these, by the way, are detailed reports!

5CW has changed his QRA. Reports pse from you, OM.

2KK continues to receive the Antipodes in spite of bad conditions. He, too, expects to QRO shortly.

It has been suggested to hold a meeting of the Stafford gang in Stafford during July, providing the necessary arrangements can be made. All the gang will be notified and expected to attend!

Warwickshire (via Mr. Erith).

6YD (Small Heath) has received three cards from India, one from O-A5Z and A-7NW. They report strength R3, but note being FB DC they can read him. He is trying to work Z, but has not yet succeeded. Better luck, OM. He has been "across the pond" 65 times.

6YU (Coventry) has been busy organising the Coventry Transmitters' Association, and hopes to bring in some new members. FB! He says this and crystal control has left him no time for DX! However, the set is improving.

5PX (Sutton Coldfield) is at present in Germany,

and will therefore not be on the air for a few weeks. F. Smith (BRS3, Saltley) sends in a good list of calls heard. He has heard PI CDS, give his QRA as Bordero Camp, Nicholls, PI. He also heard 19 A's and Z's during the month.

Norfolk.

6ZJ, of Sheringham, is scratching his head. He found that transmission even on 45 m. during B.B.C. hours had to be abandoned. Not that there is anything novel in this!! But then, domestic arrangements preclude the use of a generator during the hours that sane folk sleep!

6ZJ is going into the garden (not to eat worms, but to build a shack). We have heard of others doing the same thing, and in wishing him the fortune to engage a speedy builder, humbly suggest that precautions against damp are best thought of before and not after the shack is completed, but probably he, too, has thought of this.

6JV, beyond being able to say that he has kept in touch with U.S.A. and added Madeira to the list of QSO's, has little else to report this month. The steadily increasing craze for lone upon 45 m. has been duly noted, but so far he has not yet fallen victim to this. He hears rumours that ere long there may be an addition to the Norfolk stations, and thinks that if the present rate of increase is maintained a Norfolk convention of hams may yet be indicated!

Cambridge (by 2XV).

2ANO is now a fully-fledged ham, and has obtained his licence for 23 and 45 metres, with the call 2DB; put his QRA in your call book now: it is 88, Chesterton Road, Cambridge. He has been on the air now for about three weeks, and does not appear to have wasted much time, as he has made over 40 QSO's and his best DX to date is to work SMWQ (about 1,200 miles) on 3.2 watt and reported R5. He is using chemically rectified A.C. off the mains, and gets a good DC note—now OM, what about some "bunk" on that post rectifier for the BULLETIN?

5YK has been experimenting with difficult aeriels, and it is rumoured that there is a shortage of aerial wire in Cambridge due to this; however, he has now settled down to an aerial and counterpoise working near its second harmonic. Having had various rude remarks passed by the local BCL's, he is compelled to QRP to 1 watt during broadcast, but can raise Finland on that; he is also working Yanks fairly regularly on 8 watts, and finds that an untuned aerial gives stronger sigs in U.S.A. than a tuned one. 5YK also asks for reports on his 23-metre sigs being radiated during week-ends, but no definite time is stated in his report—pse let me know this detail, OM.

2XV has now been off the air for some weeks, as his station is undergoing drastic alterations in the form of removing all gear to an outdoor "shack." He is also installing a petrol engine to drive his generator, as he finds it rather expensive to run same as a motor generator (or dynamotor), as it was consuming 10 amps.!!!

However, he hopes to be on the air again by the time this is in print, and will be glad of replies to any "test" calls made by stations who have heard him in the past, so as to report upon improvements (or otherwise) in the quality and steadiness of note.

Irish Notes.

JUNE.

THIS month it is pleasing to note that a few more licences have come through, showing that amateur radio is progressing slowly, but surely, in the right direction. The latest QRA's are as follows:—

GW14B—J. P. Campbell, Martello Terrace, Sutton, Co. Dublin.

GW15B—W. R. Burne, 34, Dame Street, Dublin.

GW16B—Mr. Duncan, c/o Wireless Society of Ireland, Dublin.

GW17B—Mr. Warren, Sandymount, Co. Dublin.

GW18B—D. F. and D. M. O'Dwyer, 9, Upper Leeson Street, Dublin.

GW19B—H. Goldsbrough, Shaftesbury House, Fethard, Co. Tipperary.

Gi2BX—Municipal College of Technology, Belfast.

Gi6YM—Y.M.C.A. Radio Club, Wellington Place, Belfast.

We welcome all of you to the "gang," OM's, and wish you all good luck!

And now for the reports. In the South, 18B and 19B are putting out a nice signal on low power, the former having already worked many G's as well as several European countries on 2 watts, while 19B has also done excellent European work, having got speech to 8FR on 4 watts, and being reported R6 in many parts of Europe with the same input. 15B has only been on occasionally, but will no doubt soon make himself heard! The Southern stations all seem to have very nice QSB's, and have done good work on the low power they use.

In the North, 2IT is working crowds of U's, and has got speech to Canada and Brazil, as well as to various European countries. His signals are very loud at present, and he has little trouble in raising anyone. He has also been QSO Argentina on CW. 6MU has a new transmitter in action, using about 38 watts. He has also done some excellent work, having raised four U's with five calls, and working each of them without the slightest difficulty. He has also been QSO KEGK, and got some fone over to C—IED. This is good work on less than 40 watts. 6YW is almost QRT at present, but he will be on again shortly. He has, however, worked C—IED also, on 3 to 4 watts to a receiving valve. The remainder of the gang have not reported—don't overlook it this month, please! 5NJ is on experimental work with a special aerial, and has had no time for DX this month.

I have just heard that a Transmitters' Society—known as the Irish Radio Transmitters' Society—has been formed to look after the interests of Southern hams. This is an excellent idea, and full particulars may be obtained, meantime, from GW15B or 19B. It is up to all Southern experimenters to join.

JULY.

On account of the strike and the consequent difficulty of the gathering in of news, these notes must this month be very brief, so we shall get down to business right away and give all the news we have been able to collect from various sources.

(Concluded on page 21)

Northern Notes—(Concluded from page 16).

got further than Holland so far. Hope to hear more of you next month, OM.

6ZD (Berwick) is also a newcomer using 240-volt mains and a DE 5 valve on 154 metres. Reports welcomed. He has been QSO all England using 5 watts, a low power for this wave.

Lancashire.

5MS is off the air while at Cambridge.

5RH found his new Mortley by far too strong for his filter condensers, and I hear there was a very good imitation of friend Brock!

5XY has found time to rebuild, and has pushed the old meter up another point one. Further reports are awaited.

5BH is again on the air after a 15 months' rest, and is QSO all Europe on 45 metres, using low power.

Lancashire reports for May are conspicuous by their absence. Hi! Red Roses.

Requests.

5DA wants Short Wave Heterodyne dope. Whatsay, OM's?

2XY would like experiences of hams having used tuned H.F. chokes in the H.T. plus of a 45-metre transmitter. He thanks hams for QRA's of U's sent recently.

Last, but not least, the writer of these notes would like more Reports, OM's. There are lots of Northern hams on the ether, unless my receiver tells a George Washington, so please send reports along every month, and let others have your experiences.

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Correspondence.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—Members who operate on the 45 metre band and work DX stations operating on their allotted band cannot help but have noticed the ever-increasing number of European stations, who with their terrible raw AC qsb's and woefully flat tuning are causing fearful QRM on the distant stations. Complaints have frequently appeared in the Press on this subject, appealing to their better natures to keep the DX wavebands clear, but I am afraid that only a very few have responded, therefore I would suggest that all members of the T. & R. should make a point of not working any European stations who are operating on wavelengths which have now become the recognised DX band. Further than this, I would suggest that those stations that persist in causing this quite unnecessary QRM should be reported to your now world-wide BULLETIN and that the BULLETIN should keep a Black List Column in order that the stations who appear in the column shall be absolutely boycotted by all our members. This I think might prove to be a cure. Perhaps it is worth trying. What do other members think about it?

Yours faithfully,
H. S. NICHOLLS.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—It was with great interest that I read the article on the subject of unlicensed transmitters, as it shows that the Section is moving in the right direction. This letter is to point out another field for activity.

May I ask how many T. & R. members can honestly say that they have abided by the terms of their licence? I venture to think that the number is small. For instance, it is prohibited to give a general call—what then is the significance of "TEST" followed by AR K? Is it not intended to ask any station hearing the call to reply, and surely does not this constitute a general call within the meaning of the licence? Also, can any one transmitter honestly say that he has never used his transmitter for any other than purely experimental purposes?

Yours, etc.,
NEMO.

To the Editor of T. & R. BULLETIN.

DEAR OM,—Can't something be done about this DCN French military stn? He comes on at all times with a vile QSC. Does not know his QRH (calls it "in neighbourhood of 48 metres") when its anything fm 47-44. He never seems to QSO but goes on like 5DH—calls CQ es asks for reports. Of course he would be O.K. if he were on 48 ms., but he's just anywhere in the 44-47 band, and apparently quite innocent of the QRM he turns out.

I don't know if u hve had this sort of news fm other "g" hams, but thot I'd just drop a line in the hope that something could be done.

Best 73's, OM,
Ever Urs,
R. POLLOCK, 5KU.

To the Editor of THE T. & R. BULLETIN.

DEAR SIR,—With regard to your remarks about unlicensed transmitters, I thoroughly support you in attitude, and would be glad if you could make it known that I shall be very glad to receive information leading to the discovery of the person using my call sign 2BHU. This call sign was only issued for artificial aerial work, and yet I am frequently receiving QSL cards. This is particularly annoying, as it seriously jeopardises my chance of getting a radiating licence if I require one. I might add, in case anyone imagines that my artificial aerial is not artificial, that I have not been using the transmitter for some months.

Yours sincerely,
JOHN B. ROBERTSON.

Usual QSL,
Batworth Park, Arundel.

To the Editor of THE T. & R. BULLETIN.

DEAR SIR,—In March last I left England to make my home in Australia, and only having been here in Sydney a few days at the time of writing, took upon myself the erection of a B.C.L. antenna for a friend.

Well! I climbed a 100-ft. pine tree, complete with rope and neatly coiled 7/22's, enamelled, etc. In a few minutes—tangle wasn't the word for it—and on an adjacent tree, I was startled to hear derisive laughs.

Two "laughing jackasses," better known here as "Koo aburras" were perched there—apparently laughing at ExG-6XG for daring to lower his prestige by "BCL-ing."

I hope when I get my QRM factory perking here they won't sit on my Hertz and guffaw at any futile attempt to raise "G's."!!!

73's to the gang. From
DONALD B. KNOCK,
(Ex G-6XG),
shortly an "A."

To the Editor of T. & R. BULLETIN.

DEAR MR. EDITOR,—I have a letter from R2WD (W. Denisoff, Tstochnaja Street 25, Tomsk, Russia, Siberia), who says: "Pse tell G2WS, G2QM, G2JT, GSMF, G5SZ that they are QRK R7 here, and give them my address."

I have also an Australian report for a station call sign (?)6KC, nationality unknown, who called G5VL about 19.30 GMT on April 4. Can anyone claim this? QSB, DC, QSSS.

Yours faithfully,
G5VL.

Porth House, Porth,
St. Columb Minor, Cornwall.

To the Editor of T. & R. BULLETIN.

DEAR OM,—You have doubtless received, and read, the May issue of "QST"; but just in case there may exist transmitters who do not read that excellent journal, I would suggest that the editorial therein, "The Lust for DX," should be reprinted in the next number of the BULLETIN, and issued in poster form to be hung above the receiver of every Ham in the British Isles.

I am not one of those pessimists who believe that amateur radio is dying; but I do feel that we are in danger of losing our Ham spirit. With the exception of one or two stations, I can never get a

word with the "old gang" with whom I used to work four years ago: they are all too busy trying to set up a new DX record. Very praiseworthy, no doubt; but we are fast reaching that state in which the great Alexander is said to have found himself, when he wept because there were "no more worlds to conquer." Very soon Mars will be the only DX left to achieve; and I think we should now do well to try to recapture some of the old friendly spirit by indulging in a little "rag-chewing" with our own countrymen.

73's, OM,
T. W. HIGGS, G5KO.

107, Park Road, Newcastle-on-Tyne.

Q.R.K.

A-3WM "Mia Mia," Union Street, Brunswick, Vic., asks us to announce that the following are his operating times:—

1800-2100 GMT, Friday, Saturday, Sunday nights.

0500-0800 GMT, Saturday-Sunday morning.

0730-1200 GMT, every night.

"QRK and pse QSL. Best time for QSO here from 1800-2100G MT. Second best time from 0600-0800."

Irish Notes—(Concluded from page 19).

Things generally have been quiet, and little startling work has been done, many of our stations being off the air. 5NJ has been away from home most of the month, but has continued his schedule with various stations, and worked Australia at 7.30 p.m. BST during May on 45 metres. So apparently the early evening PX has not ended as yet. 6MU has done good work by getting speech to HBK, on an input of 30 watts, and he has also been QSO the Phillipines on 20 watts C.W. 2IT is concentrating on speech work also, and is putting out some excellent stuff during the week-ends. He seems to be very strong in all parts of the British Isles. 6YW has blown his pet valve, the PV6DE which worded U.S.A., so is at present very mournful! But he is carrying on with a repaired receiving valve, and is still QSO nearly all Europe, including Finland, Poland, Italy, etc., and a ship lying off Stockholm. The other northern stations seem to be off the air, as they have not reported.

In the South, Mr. W. R. Burne, 2KW of old, has at last got his permit through, being now 15B. He certainly deserves this licence, and we wish him every possible success. Reports in the meantime may be sent to him at 34, Dame Street, Dublin. This brings the total licences issued in the Free State up to five, but we hear that others will be issued very shortly. 5GH is too QRW with hams at present to be on the air much, but will shortly be in regular operation. During his first week on the air he worded all the nearer European countries quite easily on 4 watts input, which augurs well for his future success. QRA: J. H. Gillespie, 16, Knockdene Park South, Knock, Belfast.

Reports by 10th of next month, please.

Calls Heard—(Concluded from page 22).

British stations heard during May 1-20, 1926, with one Reinartz valve: G-6rm, 2lz, 2db, 5wu, 2dx, 2cc, 6qb, 6da, 5vl, 2zc.—Operator: CHARLES POIZAT, F8CM, 34, Rue de Mardore, Cours (Rhône), France.

Postes anglais entendus par ROBBB (Mr. R. Civet, 2, Rue Charles Lamoureux, Paris 16e, France): 2dq, 2qc, 2qv, 2xy, 2ww, 2zc, 5by, 5gq, 5hs, 5jw, 5mf, 5sk, 5us, 5vl, 5wv, 5yk, 6ah, 6bd, 6bj, 6br, 6fa, 6hf, 6hw, 6hz, 6ia, 6lc, 6ko, 6td, 6uw, 6ox. QSL by card avec QRK, QSS, QSB, etc., sur demande écrire via Journal des 8, Rugles, Eure, France, au 2 Rue Charles Lamoureux, Paris 16e, France.

GW-18b; G-2cc, 2co, 2cs, 2cv, 2nc, 2qc, 2ud, 2so, 2ds, 2vq, 2wy, 2xy, 2zc, 2bow, 2to, 2we, 5mf, 5uw, 5td, 5up, 5ku, 5gq, 5hx, 5zq, 5po, 5yk, 5tk, 5so, 5mq, 5by, 5hs, 6td, 6br, 6tx, 6rm, 6yd, 6qb, 6ry, 6oh, 6vp, 6ew, 6pu, 6og, 6ut, 6bd, 6xg, 6ox, 6oo, 6wy.—English stations heard by F8DGS (May 1-30, June 1-3). QRH: 43-50m.

2od (r7), 2qv (r8), 2wj (r9), 2zc (r9), 2sw (7), 1ag (4), 1md (6), 5dc (9), 5dh (8), 5hm (6), 5hu (4), 5nc (7), 5wg (4), 6cu (9), 6dk (8), 6dt (7), 6ga (9), 6rm (9), 6fge (9).—Call signs heard by SWAW (Paris) from April 11 to 20.

aha (r8), 2dg, (6), 2ct (4), 5by (6), 5jw (3), 5mf (4), 5so (5), 5td (3), 5uw (8), 5ym (3), 5za (5), 6cd (5), 6cr (7), 6da (5), 6ig (5), 6iy (3), 6iz (6), 6vp (5).—Call signs heard by 8EF (A. AUGER, 128, Avenue de Neuilly, Neuilly-sur-Seine, Seine), from April 28 to May 22 (indoor 4in. long aerial). Starting for the Army to Casa blanca (Morocco), 8EF closes his station for a long time and thanks very much all the kind hams who helped him during his tests. Cast 73's.—8EF.

G-2bx, 2av, 2dx, 2kz, 2ot, 2pz, 2nh, 2sz, 2td, 2vj, 2xv, 2xy, 2nm, 2od, 5by, 5fq, 5jw, 5lf, 5ir, 5op, 5po, 5nj, 5sz, 5tz, 5vw, 6kc, 6it, 6bq, 6na, 6xq, 6vp; F-8bq, 8co, 8ip, 8ix, 8fe, 8kf, 8pi, 8jf, 8ks; U-1ch, 1abz, 1xm, 2ax, 2abg, 3acn, 3bnu, 4rm, 4qi, 5mi, 8al, 8cr; A-3bd, 3bq, 2cm; Miscellaneous—y8, thh, bbj, bv3, bi3, lbx, woa, bk4. PSE QSL6U G's signals on 160m. All cards answered.—H. DEAN POULTON (6UG), 18, Albion Street, Cheltenham, on 0-V-1 Reinartz below 50m.

English call signs heard from April 1 to 25 (OVI).—G2—cc(r5), dr(r5), ih(r3), qj(r4), sz(r5), vl(r5), vx(38). G5—cy(r7), fone 5dc(r7), fone 5dx(r7), fg(r5), ko(r4), po(r5), rz(r7), td(r5), tz(r5), us(r4), uw(r5), w9(r6), wv(r5), xy(ry), yk(r6). G6—cd(r4), da(r5), ep(r6), fa(r4), fz(r3), ia(r7), iz(r4), ko(r7), 9c(r6), rd(r4), tg(r5), ut(r3), vp(r3), yc(r4), yv(r6).—F8EF. Ask for QSL directly or via Journal des 8, Rugles, Eure, France.

IRISH FREE STATE TRANSMITTERS.

Mr. W. R. Burne, of "Irish Radio Journal," 34, Dame Street, Dublin, would be pleased to send QSL cards to I.F.S. Transmitters. Such postcards should be sent under cover of a sealed envelope.

IRISH TRANSMITTERS

Mr. Burne will also forward cards to any Irish transmitter in either the Free State or the Northern area.

Small Advertisements.

SURPLUS APPARATUS FROM THE 5YM STATION.—One Wilson break H.T. Generator, £2 10s.; one 100-watt H.T. Unit, complete with two rectifying valves, £3 (both with full directions for use); Deliver 20-30 watts. One Evershed Generator, new condition, 30-watt, £4 10s.—Apply, CAPTAIN E. H. ROBINSON, Langmead, Pirbright, Surrey.

TRANSMITTER, Hartley, 23 metres, complete and in first-class order, ebonite panel, 3ft. by 2ft. 4in., oak stand and frame, £15. Receiver, Reinhartz 1D, I.L.F., in first-class order, polished mahogany case, 10-150 metres, £7 10s. Wave meter, 10-150 metres, Neon tube, and calibration card, £1 10s. L.T. and H.T. Transformers for transmitter and charging supply: (a) 200v. 100 n. to 1,000v. 100 m/a.; (b) 200v. 100n. to 15v., 5a., £5. (a) Detector Unit, 1 valve, reaction, suitable wide range wave-lengths, 300 metres upwards; (b) 4-valve Resistance Coupled Amplifier, £4 the lot. Various components, Rheostats, Valves, etc., £2. D.C., H.T. Generator, Newton 2,000v. 150 M/A., £12. All subject to offer.—Apply, LIEUT. D. SINCLAIR, "Morren," Shepperton.

Calls Heard.

ED. NOTE.—In future no "Calls Heard" will be accepted for publication unless they are set out in conformity with the specimen scheme hereunder:—

BZ—law, laf, lak, lia, lib, ial, iar, lbd, lao, laq, lbi, laa, lad, lab, 2af, 2aq, 5ab, 5ws, 6qa, 1c, sni; A—3ba, 2cm, 5kb; 5kn; PR—4rx, 4sa, 4je; NZ—4ak; MF—2cnp, 2xn, 8mb, Q—8kp; PI—cd8; R—bai, ha2, de3.—M. A. RICHARDSON, 68, Finchley Lane, Hendon (G5HJ).

G—2bgd, 2bi, 2bow, 2bz, 2cc, 2dq, 2go, 2gy, 2fu, 2ih, 2jd, 2ma, 2nc, 2nh, 2nj, 2nl, 2nt, 2oj, 2oq, 2qb, 2qm, 2qv, 2sw, 2vg, 2vo, 2vx, 2xy, 2zc, 5bu, 5fq, 5ft, 5gw, 5hu, 5jw, 5ku, 5kz, 5ma, 5nn, 5qz, 5rz, 5sk, 5so, 5sz, 5td, 5tz, 5up, 5wp, 5wt, 5wv, 5xy, 5yi, 5yk, 5ym, 5yz, 6bd, 6br, 6cj, 6fa, 6ft, 6fz, 6hf, 6ia, 6iv, 6iz, 6jv, 6kk, 6ko, 6mx, 6nh, 6no, 6nx, 6oo, 6pg, 6rd, 6rm, 6ru, 6su, 6td, 6tg, 6us, 6uz, 6vo, 6vp, 6yc, 6yd, 6yg, 6yk, 6yq, 6yr, 6yu, 6yv, aka, akb, ndx. GI—2it, 5gh, 5nj, 6mu, 6qd, 6tb, 6yw. GW—11b, 3xx, 3zz. F's too numerous! B—r2, s2, s5, p7, u3, w3, b1, b2, s4, b9, o2, e9, z2, y2, m2, w1, j2, d4, o8, d8, m8, b7, z1, k3, y8, w7, g33, 4yz, 4rs. N—oil, owb, ovn, owc, orp, opm, oxq, ohb, opx, okh, stb, 12bb, pck4. K—4lv, 4pf, 4zm, y1, i8, k7, p6, j1, w7, v8, kpl, kws. I—las, lgw, lbi, lau, lqn, lrt, lax, lcc, lss, lfp, lbb, lbc, lct. D—7ew, 7zm, 7mt, 7bx, 7wa. S—2bs, 2co, 2nd, 2nl, 2nm, 5nf, smui, smuv, smxu, smvj, smxv, smvg, smxr, smsr, smua, smws, smuk. Tripoli—1ta. L—lag, las, ljw. P—lae, 3fz, 3gb, 3or. LA—1a, 4x. Poland—tpai, tpaw. E—ear21, ear22, ear23, ear24. PE—6xc, 6yx, 6zk, 6zm. BZ—lan, laq, lao, law, lib, lic, lin, lix, 6qa. R—cb8, de2, dm9, fa3, fb5. PI—cd8, 3aa. CH—2ld. Y—1cd, 1cg (Uruguay). lfg, kegk, sgc, ss8lbt, wbr, rrp, nrl, isra, not.—G—6QB, L. H. THOMAS, 33, Harpenden Road, West Norwood, London, S.E.27.

U's—4cu, 4qr, 4hx, 4ac, 4jk, 4tz, 4pf, 4rm, 4bl, 4ft, 5yb, 5ac, 5yd, 5aab, 5fc, 5va, 5zai, 6xi, 7df, 8cau, 8bds, 8ily, 8fl, 8dia, 8aol, 8xe, 8bpl, 8bgn, 8dae, 8bsm, 8rp, 8acx, 8aly, 8dms, 8aju, 8cme, 8eh, 9dqu, 9bzi, 9bos, 9baz, 9dge, 9cgg, 9zt, 9brc, 9xi, 9bbw, 9eji. PR's—4bg, 4je, 4sa, 4ja, 4rx. CH's—9tc, 3ij, 2ld. BZ's—lib, law, lap, lan, lay, lao, lbi, 2ab, lad, sni, lix, laf, lak, lag, lac, lar, 2ag, lbd, ial, lbg, lbf, 2af, lbb, ltr, 6qa, laq, 2aj, 2aa, 5ab, pt1, pt2, pt3, pt4, pt5. HU—6bl. Y's—2aj, 1cd, 1cg. R's—db2, dm9, de3, afl, ff9. R—cb8. C's—lar, led. O's—1sr, a6n. Q—8kp. PI's—3aa, cd8. A's—3bq, 3bd, 5kn, 2cm, 2tm, 3bm. Z's—4ac, 4ak, lao, 4am, 2ac, vbl. Miscellaneous—nuqc, ss8lbt, tuk, aqe, nidk, nar, wghm, xda, kegk, wll, agb, nba, ocdj, lfg, bxw, bxy, nce. On May 1 and 2—A.s—3ls, 2ij, 7hl, 7cw, 2bk, 2cm. Z's—4am, 2ac, 3af, 4ac, 3al, 2xa. U's—4hx, 4if, 4aib, 4fj, 4cv, 4cel, 4hu, 5va, 5fc, 8cjm, 8bzu, 8bds, 8aqg, 8avd, 8bz, 8dae, 8ry, 8jq, 8cil, 8cnx, 8dan, 8dpz, 8bgi, 8bau, 9abk, 9ev, 9dmw, 9ddw, 9za, 9bv, 9bqv. C—3fc.

U.S.A.—1ala, 1xv, 2mm, 2wq, 2buy, 2bbx, 3auv, 3bwt, 3chl, 4gf, 4jk, 5uk, 6oi, 7ek, 8cqq, 9dqu, kegk, w3r. Canada—lar (fone), ldd, 3fc, 3jw, 8ar, 8wm (?). Uruguay—ylbr. Brazil—law, laq, lbi, ial, lay, lqa, 2ab, 2aa, sni. Chile—2ld. Argentina—db2, fa3, 2qw (Russia?). Yugo-Slavia—7xx. Luxembourg—1jw, lag. Danish—7bx. Italian—1co. Norwegian—la4x, laxx, lale. Poland—tpai. Portugal—1ck. Czecho-Slovakia—ok1. Finland—2ns, 2bs, 2nd, 2co, 2nx. Austrian—ösu. New Zealand—4aa. Tasmanian—7hl. Italian Africa—1ta. Various—ur, tun2, f8ix, tuk, rcl, smvl, etc. The QRA's of Y1BR and A7HL would be appreciated by G6YW.—Calls heard by G6YW, T. P. ALLEN, 19, Ardgreenan Drive, Strandtown, Belfast, N. Ireland. All cards answered. QSL on request.

British—2bx, 2cc, 2qj, 5by, 5ck, 5ds, 5gq, 5ku, 5ls, 5mq, 5ms, 5nz, 5pd, 5po, 5qz, 5sk, 5ti, 5tz, 5xo, 5xy, 6aa, 6bd, 6br, 6fa, 6ia, 6iz, 6jf, 6ko, 6lb, 6lc, 6oo, 6ou, 6ox, 6po, 6tg, 6vp, 6yd, 6yq. Irish—2it—Received by G5YK from F8SSZ. 45 metres, April. Pse QSL to F8SSZ via Journal des 8.

iaad, iaci, ladi, laej, laev, laff, laha, lahg, lahl, laid, lain, laiv, lakz, lala, lall, lai, laid, laim, lain, lair, lau, lavl, lawd, laxa, lbdh, lbne, leab, lck, lckp, lcm, lcmf, lcmp, lcmx, lcoe, lcrm, lga, lhj, liu, lik, lkl, lrd, lrr, lsw, lve, lyb, lyd, lza, 2aez, 2ahm, 2ag, 2agt, 2agq, 2aim, 2aky, 2amj, 2anm, 2apm, 2apu, 2bl, 2bgh, 2bw, 2bxj, 2cje, 2cms, 2crb, 2crp, 2cvj, 2ckd, 2cxy, 2cyx, 2mk, 2rm, 2sz, 2wk, 2ll, 3ah, 3auj, 3auv, 3bhv, 3bqz, 3bnt, 3cjn, 3dh, 3hg, 3hl, 3ld, 3ln, 3ps, 3ph, 3sk, 3wb, 3zm, 4dm, 4ds, 4es, 4jk, 4pz, 4px, 4is, 4iv, 4rm, 4rr, 4km, 4kn, 5acl, 5ahp, 5att, 5atx, 5ux, 5zai, 6uix, 6ga, 6oi, 6hm, 7aa, 7alk, 7ak, 7hf, 7df, 7ga, 7gr, 7ne, 7nx, 7ok, 7ux, 7vz, 7zl, 7mx, 1sk, 8ada, 8ade, 8adg, 8adn, 8abj, 8avl, 8abj, 8bjw, 8bjl, 8bgi, 8bux, 8bv, 8byn, 8bzu, 8cav, 8ocq, 8cfc, 8voo, 8daa, 8djf, 8dqu, 8es, 8fi, 8jj, 8jq, 8rv, 8qb, 8ado, 8aio, 9akf, 9bag, 9bht, 9bm, 9bpt, 9bxh, 9brh, 9bs, 9cj, 9qw, 9dkc, ciar, c2ax, cbg, c3xi, c3yp, c8ar, pr4jc, pr4ur, bzlab, bzia, bzlaaf, bzlap, rbal, apa3, ch2ld, 92mk, a2kg, a3bd, asbm, a3bq, a3ef, a3hl, a3kb, a3xo, a4am, ziap, z2ac, z2aq, 12xa, z3ad, czqqx, fi8qq, fi8vg, lwbbuc, jipp.—Pse QSL y not. All cards answered.—RALPH H. PARKER, G—2KK, Radio House, Wilson Road, Smethwick, Staffs, England.

Call signs heard by Mr. Desgrouas (F8DGS), à Vire (Calvados), France, from April 5 to May 14, 1926.—G—2co, in, ka, nc, nj, nt, o9, 9b, to, xu, za, ze, 5by, dy, g9, hx, hz, jw, ko, ku, mf, ms, my, mz, po, ri, sk, td, ud, up, uw, yk, z9, 6bd, bj, br, cj, ep, eg, fa,

fz, g9, ia, jh, kk, ko, ox, pg, 9b, rd, rm, td, tg, tx, uz, vp, yc, yd, y9, y2.

Calls heard during April, 30-50 metres.—G—2sw, 2ww, 2nc, 5ku, 5up, 5hj, 5vl, 5si, 5wq, 5mq, 5fj, 5fq, 5by, 6ft, 6br, 6iz, 6iv, 6yq, 6ig, 6ko, 6pf. GI—7ab. GW—3zz. B—c8, 4qq, v8, 4yz, oz, sz, ch5, b7, b1, v33. I—ict, ice, ibk. F—8rul, 8pep, 7ux, 8jf, 8sax, 8cn, 8bef, 8fp. Sweden—smxu, smvj, smvg, smuk. U.S.A.—1bbr, lga, lafo, 2arh, 2atc, 2zv, 2ctf, 2cu, 2ahk, 4aae, 4hx, 8fp, 9cwn. A—3bd. Z—4am. N—4pck, 0hb, 0vn. D—7bj, 7zm. O—a6n. EAR—24. C—8ar. YS—7xx. Miscellaneous—kpl, tpav, tj6xc, bz1bb, bz1ao, kji, yhb, isra, llag, focmv, akc.—Plenty wall space ere oms!!!—G2XV.

Calls heard and worked at Z2BX, R. G. BLACK, 22, Stafford Street, Wellington, New Zealand. Stations worked shown in brackets.—bzlab, cigt (ch9tc). China—(fc8em), nuqq, gfup. Ceylon (geft), f8al, 8bf, 8dk, 8jn, (8rz), 8tk, 8xx, fi8lbt, 8qq, g(2lz), 2nm, (2od), (5lf), hu (6bdl), 6buc, (6cst), 6dbl, (6dcf), (fx1), (6tq), wyi. Holland—2pc, (bst). Italy—las, lat, lay, lbw, (ler), lfl, lgn, (lrm), lcs, ntt. India—2bg. Japan—1aa, (1sk). Java—(andir), maroc. Palestine—6zk. PI—lau, lcv, (ldl), (lhr), 3aa, (cd8), (najp), (neqq). Russia—nrl, rrp, rcl. Samoa—6zac. Tahiti—(bam). U.S.A.—1's (akz), cmp, rd, yb; 2's exl, gk; 3's nil; 4's nil; 5's (akn), aky, (zai); 6's afs, ajl, (akx), awt, bias, bhz, bsz, (bvq), (ccl), cft, cfj, (cmg), cmq, csw, (cto), dat, dah, fa, hm, (ji), (js), kb, (nh), (sv), sw, vr, (vz); 7's (aaj), adm, (afo), df, (ek), (eo), vh, (xf), (zm); 8's (adm), (aly), kw, pl; 9's (bta), (ccs), (ded), ebj, (eji), hp, ka, (wi), zt. Y—hbk. Miscellaneous—ane, anf, bxw, da, fw, gas, gdvb, gha, hva, kel, ket, kfuh, kio, k8(?), naj, najd, ngy, nisv, nipm, npl, nrm, npo, ocdj, onm, pcell, pow, wiz.

From January 21, 1926, to April 30, 1926.—2ww, 2oj, 2un, 2xy, 2dy, 2dr, 2xv, 2cc, 2ocn, 2nt, 2ia, 2nm, 2gy, 2fo, 2zc, 2ta, 2aa, 2co, 2fm, 2vs, 2zv, 2ro, 2ky, 2ih, 2xv, 5sa, 5la, 5nn, 5so, 5tz, 5uq, 5my, 5ts, 5sz, 5uv, 5za, 5ni, 5k2, 5gw, 5ba, 5hu, 5yg, 5mz, 5jw, 5wq, 5ku, 5lf, 5xo, 5qk, 5nq, 5rm, 5ty, 5lb, 5by, 5mv, 5wv, 5td, 5md, 5fq, 5qz, 5ma, 5xy, 5sk, 5gq, 5ds, 5ms, 5ls, 5yz, 5mf, 6vp, 6mu, 6ut, 6su, 6uz, 6yd, 6yr, 6kk, 6ft, 6iv, 6ah, 6no, 6wg, 6ut, 6iz, 6pg, 6st, 6fa, 6yt, 6jo, 6jv, 6yq, 6ju, 6gx, 6id, 6mx, 6dj, 6bd, 6rd, 6gf, 6fz, 6xy, 6lc, 6mp, 6uz, 6tg, 6pu, 6yc, 6mt, 6br, 6bo, 6pu, 6ci, 6oh, 6zk, 6ob, 6zk, gsa, gbm, gip, gvp, gsd, gfl, gha, ghl, geft, 3zz, fls, 2mk.—F8RVR, via "Journal des 8," Rugles, Eure en RSGB.

Prior to March.—2dg, 2fm, 2it, 2ww, 5fs, 5lb, 5nn, 5xy, 6uz. From April 21 to May 2.—2ny, 2gc, 2it, 5by, 5ec, 5fg, 5jx, 5ku, 5mu, 5my, 5nu, 5po, 5tz, 5wv, 6bd, 6by, 6fa, 6hf, 6jv, 6os, 6gb, 6rd, 6rm, 6td, 6ut, 6yu. From April 1 to 12.—2dg, 2ih, 2in, 2kf, 2nh, 2nt, 2og, 2gb, 2gj, 2to, 2za, 2zz, 5fg, 5fs, 5gw, 5ku, 5ms, 5my, 5rb, 5sk, 5tz, 5up, 5wv, 5yk, 5za, 6br, 6bd, 6bz, 6fa, 6ft, 6fr, 6lc, 6ox, 6rm, 6ry, 6td, 6up, 6ye, 6yd, 6yk.—F8FMG, who was working in QRP (5 watts) these last holidays, sends many thanks and 73's to all the British hams he worked with.—F8FMG, Thionville, Moselle, France.

G6BT DE F—OCNG.

I would be very glad to make part of T. & R. R.S.G.B., and on this occasion I address you the following message:—

"Lieutenant Sudre, E.S.E. Engineer, thanks for the QSO, for the reports and addresses, his 73's and his best wishes to his following English friends":—

"G" calls heard by F-OCNG, Lieut. Ludre, Radio M.S.U.—2ahh, 2baz, 2bx, 2cc, 2el, 2go, 2gy, 2ih, 2it, 2kf, 2ma, 2mx, 2oq, 2qv, 2tp, 2un, 2wv, 2xy, 5ax, 5cx, 5da, 5ff, 5fg, 5gw, 5hj, 5ku, 5kz, 5lf, 5ls, 5ms, 5mq, 5od, 5po, 5qf, 5sk, 5so, 5sz, 5tz, 5us, 5uw, 5vc, 5wq, 5wi, 5wv, 5xy, 5yk, 6ah, 6br, 6bi, 6ci, 6da, 6ft, 6hf, 6ia, 6jh, 6jv, 6ko, 6me, 6mu, 6nf, 6oh, 6ox, 6pg, 6pv, 6qb, 6su, 6tb, 6tg, 6ut, 6wg, 6yc, 6yd, 6yq, 6yr, 6yu, 6yv, 6zc, 6nh, aka, akb, gfl, akc.

A—2cm, 3bd, 3xo; Africa, North—f8ip, 8mb, maroc, da-ita, 2cnp, not (Alexandria); Africa, South—o-a3b, a6n; BZ—lac, lad, laf, lak, lal, lan, lao, laq, lar, lat, law, lax, lbd, lbi, lbi, lib, 2aa, 2ab, 2af, 5ab, sni, pt5; C—8ar; D—7bx, 7bz, 7mt, 7wa, 7zm; FI—8qq; Finland—2bs, 2co, 2nd, 2nm, 5nf; G—120 on cw, 50 on fone; GI—2it, 5nj, 6mu, 6qd, 6yw; GW—11b; L—lag, ljw; LA—1a, lb, le; M—9a; Madeira—p-3fz, 3gb; P—1ae, law; PE—6zk; PI—3aa; PR—4ja, 4ur; R—db2, fa3; Spain—ear1, ear2, ear9, ear10, ear21, ear23, ear9; Sweden—smr, smy, smth, smtg, smua, smui, smuk, smvg, smvh, smvj, smvr, smwg, smwq, smws, smwv, smxr, smxu, smxv, smyu, smyz, smzv, smzz, lgn, sab, sgc, sgt; T—tpai, tpau, tpav, tpaw, tpax; Uruguay—y-lcg, jcp; YS—7xx (fone); Z—2ae, 4am; Various—ntt, nidk, geft (Plymouth).—30-50 m. stations heard at BRS2, O-V-I, Reinartz.

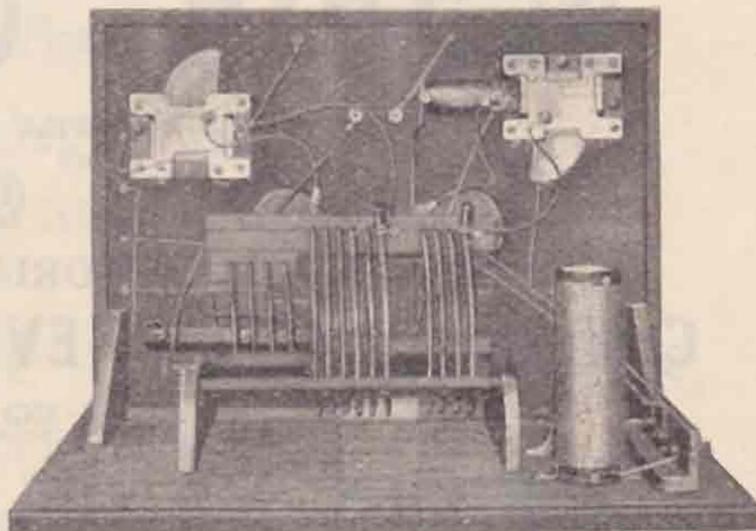
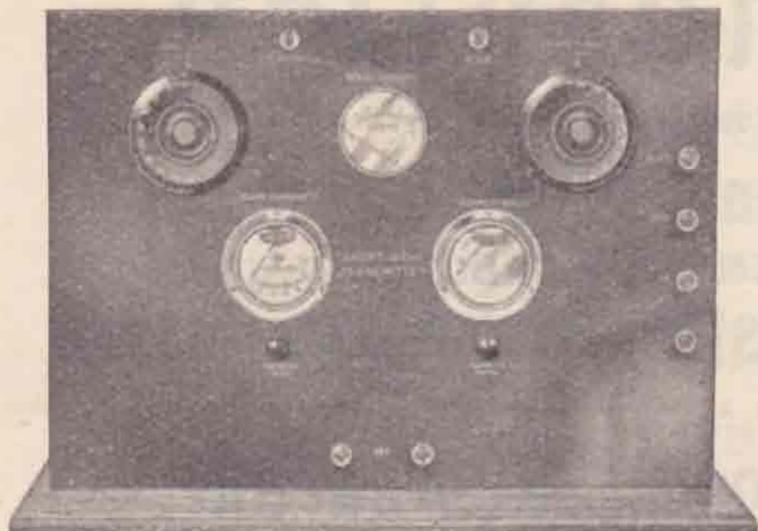
Indicate entendus par F-8RVR (6 kms. au sud de Paris) pendant la période du 25.4 au 16.5.26. (QSC sur demande.)

2bm, 2xv, 2dy, 2od, 2zc, 2nm, 5jw, 5td, 5mf, 5mu, 5lb, 5ts, 5ec, 5us, 5vé, 5vi, 5po, 5ku, 5gy, 5dh, 5uw, 5ls, 5sk, 5ym, 5wu, 5yb, 5wv, 5rw, 5za, 5by, 5yk, 6ob, 6fa, 6yd, 6tg, 6pw, 6pg, 6br, 6sf, 6xd, 6bj, 6bo, 6og, 6vp, 6bd.

CQ de F-8RVR. Pse OM's si vous avez entendu mes émissions, de m'adresser un crd QSL détaillé. Il sera répondu a tous. (Tks et F3's OM de F-8RVR.

(Concluded on previous page)

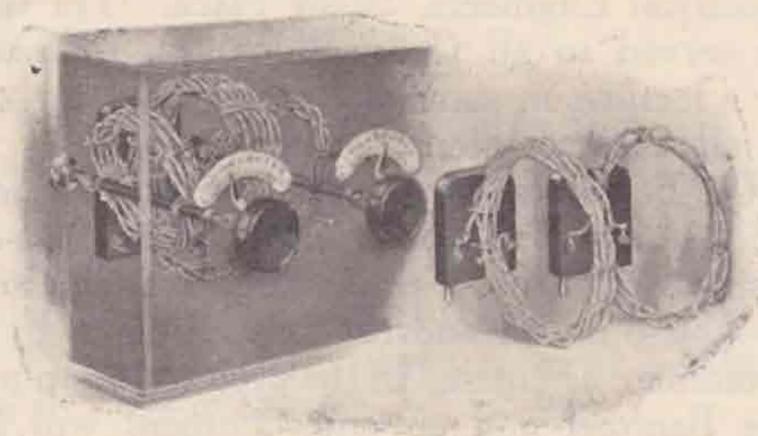
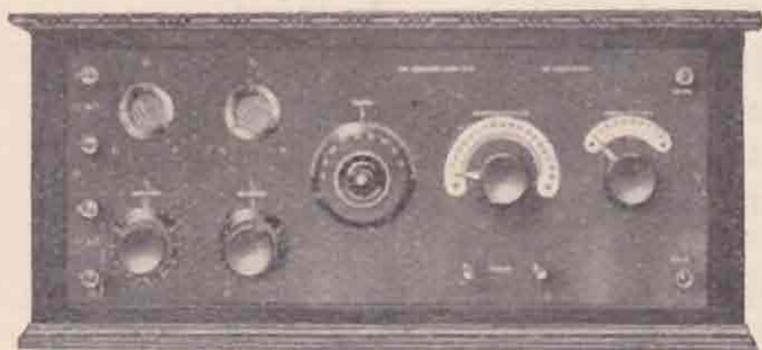
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WILL BE HELD AT THE

Institute of Electrical Engineers,

SAVOY PLACE, VICTORIA EMBANKMENT, LONDON, S.W.1,

Commencing FRIDAY EVENING, SEPTEMBER 17th, 1926

AND ENDING WITH A

Banquet at the Holborn Restaurant,**On SATURDAY, SEPTEMBER 18th, 1926.****TICKETS for CONVENTION and BANQUET, £1 Each.***(Convention only 9s. 6d.)*

The following is a synopsis of the Programme as at present contemplated :

On Friday, September 17, the Opening Meeting will take place at the Institute of Electrical Engineers, Savoy Place. Tea will be served to all Conventionalists, followed by a lecture on some subject of vital interest to all experimenters.

On Saturday, September 18, at 11 a.m., an informal meeting, discussion, and-or conference will take place at the Institute and at 2.30 p.m. an address will be given by a prominent scientist. In the evening at 7 p.m., the Banquet and an entertainment will be held at the Holborn Restaurant.

In order that arrangements can be made definitely well in advance, it is absolutely essential that all those who wish to join us should forward immediately to the Hon. Secretary, T. & R. Section, the fee of £1 *not later than July 15*. It is hoped to make special arrangements for hotel accommodation

at reduced prices for those Provincial Members who apply early, whilst a number of London Members have signified that they will accommodate a certain number of such members with bed, breakfast, and entertainment free of all charge. As this free accommodation is limited, early application should be made by only those members residing at a distance of more than 100 miles from Charing Cross. Such applications should be made to Hon. Secretary, T. & R. Section, and should accompany your remittance.

We already have a considerable number of applications for tickets from London members, and it is to be hoped that all members will avail themselves of this, the first opportunity afforded to them to meet collectively and discuss matters vital to their interests as Hams and Experimenters.

All correspondence should be accompanied by a stamped addressed envelope for reply.

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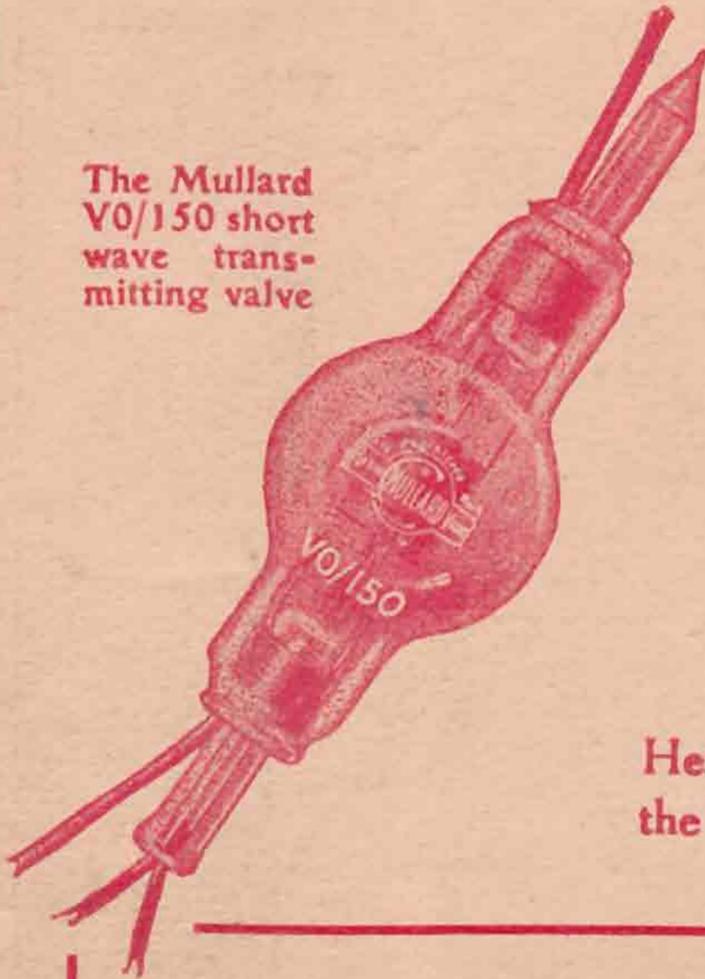
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