

THE T. & R.

BULLETIN

THE INC.
RADIO SOCIETY
OF Gt. BRITAIN

AND THE
BRITISH EMPIRE
RADIO UNION

Vol. 8 No. 3 SEPTEMBER, 1932 (Copyright)

Price 1/6

'RECTATONE'

L.F. TRANSFORMER



1. Has a rising response curve from 1,000 to 4,500 cycles.
2. Balances any form of sound reproduction.
3. Restores a weakened treble to its correct value.
4. Gives a variable compensation and therefore complete control of tone correction.
5. Gives the required tone-correction without an extra L.F. stage.
6. Becomes at will and instantly a normal straight-line transformer.
7. The ideal L.F. coupling for selective sets.
8. Particularly useful where the same L.F. amplifier is used for radio and gramophone reproduction.

Step-up ratio 1:7. Can be used in all the usual methods, either direct coupled or choke or resistance fed, with or without the tone correction feature in each case.

List No. D.P.33 **15/-**

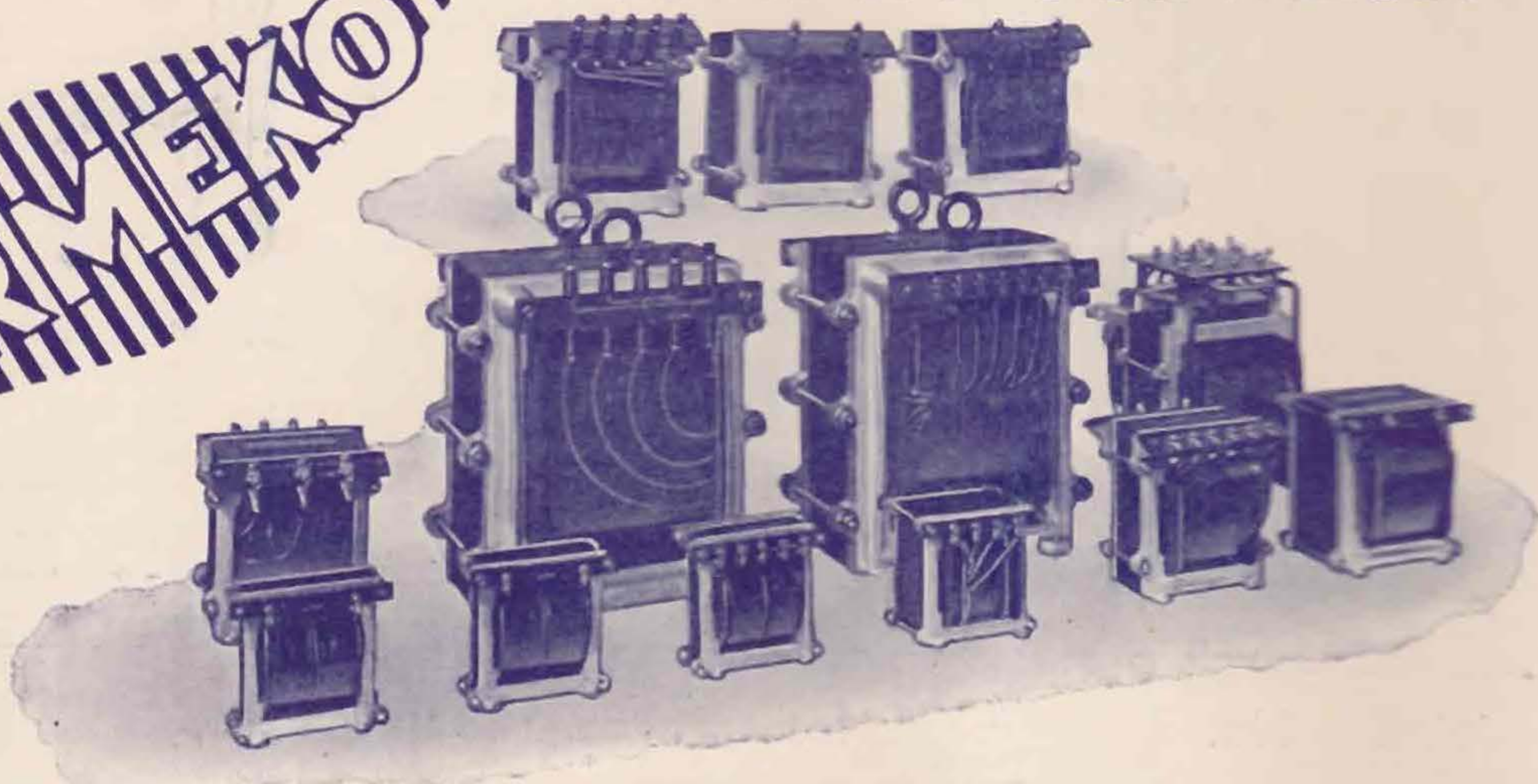
Varley

Write for "The Book of the Rectatone" FREE.

Advertisement of Oliver Pell Control Ltd., 103, Kingsway, London, W.C.2
Telephone: Holborn 5303

PARTRIDGE & MEE LTD.

TRANSFORMERS

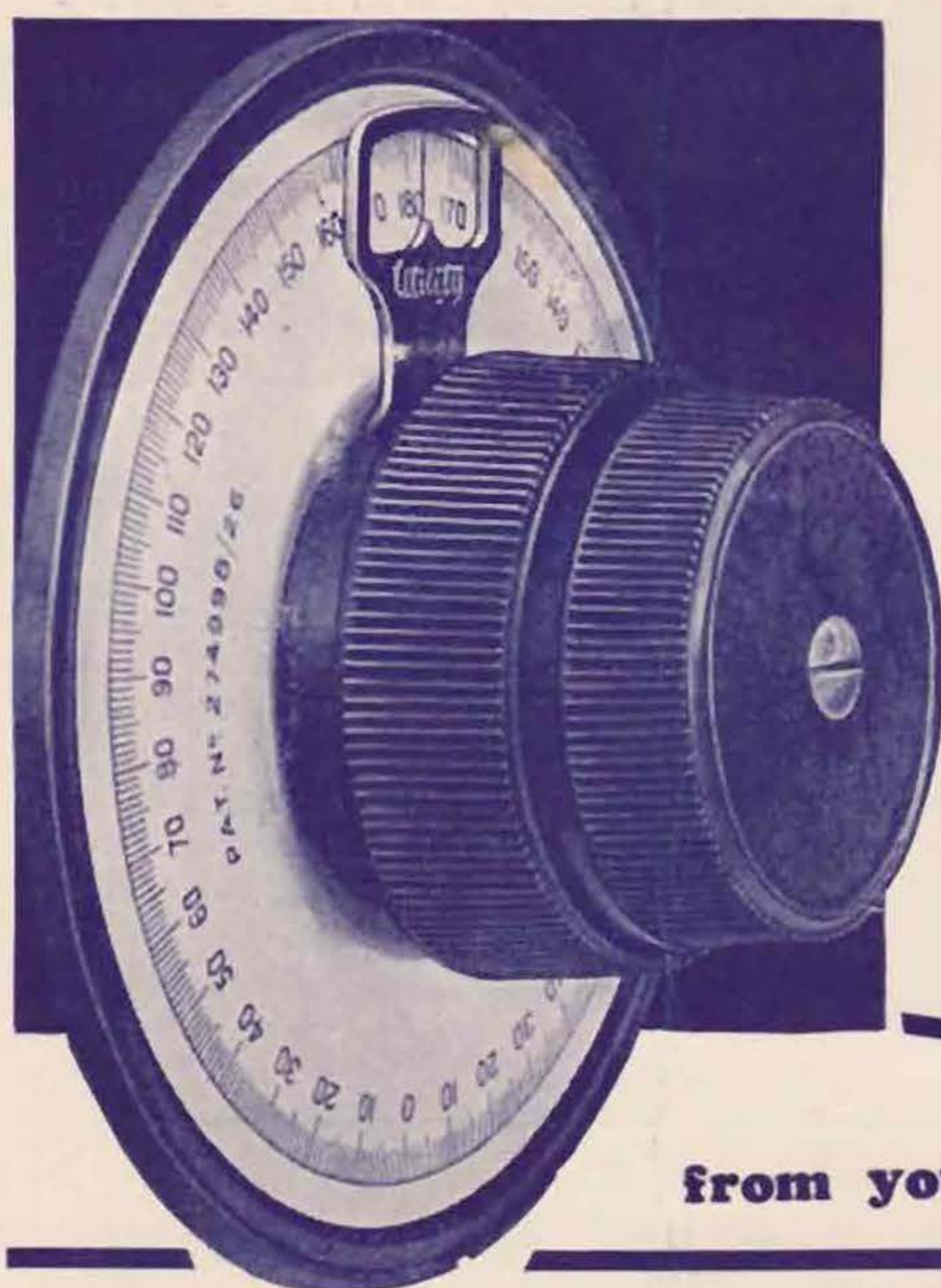


BUILT TO SPECIFICATION

For one of the largest Amateur Transmitters

The above is a typical range of transformers made to specification. We shall be pleased to receive your enquiries

PARTRIDGE & MEE LTD.
LEICESTER (Aylestone 487).
 74, New Oxford St., W.C. (Museum 5070.)



READ THIS!

HUDDERSFIELD,
 July 30, 1932.

Dear Sirs,

Received 181 dial O.K. for which many thanks. I have been a short wave listener since 1924, and have been waiting for a perfect S.M. dial ever since. I have experimented with them all, and am pleased to say yours is absolutely perfect with its silky feeling.

Yours faithfully,

This testimonial is taken at random from dozens of others.

Fit a Utility Slow Motion dial to your S.W. receiver and you will experience the same lively pleasure at handling the perfect tuning control.

W181 S.M Dial 7/6
 geared 100-1

We make the finest range of S.W. condensers available. Write for full particulars

from your dealer or post free from the makers

WILKINS & WRIGHT LIMITED

Utility Wks., Holyhead Rd., Birmingham

Utility

Belmont

T.C.C. HIGH VOLTAGE SMOOTHING CONDENSERS

With the ever-increasing demand for real "quality" reception and the consequent use of higher voltages, condensers must, of necessity, be of unquestioned efficiency and reliability. Here are two types of T.C.C. Condensers truly worthy of the initials they bear—Guaranteed by the unique experience of over a quarter of a century to fulfil the needs of the most critical, for accuracy and dependability. Whatever the condenser—for whatever purpose, insist on the "condenser in the green case."

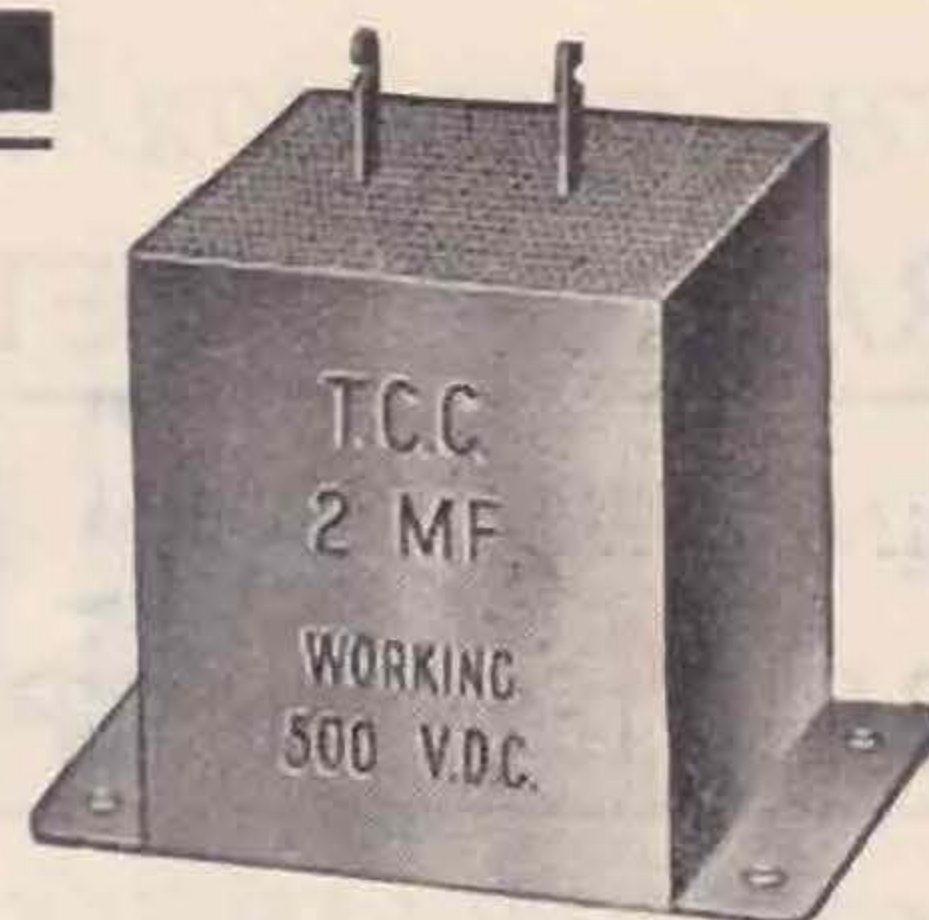


A 2 mfd. Type T.C.C. 101.
(1,500 V.D.C. Test. 800 V.D.C. working.)

TYPE 101

Tested 1,500 V.D.C. for working up to 800 V.D.C.

Capacity	Price each	Capacity	Price each
0.5 mfd.	6s. 3d.	4 mfd.	19s. 4d.
1 "	7s. 6d.	6 "	28s. 6d.
2 "	10s. 0d.		



A 2 mfd. Type T.C.C. 95.
(1,000 V.D.C. Test. 500 V.D.C. working.)

TYPE 95

Tested 1,000 V.D.C. for working up to 500 V.D.C.

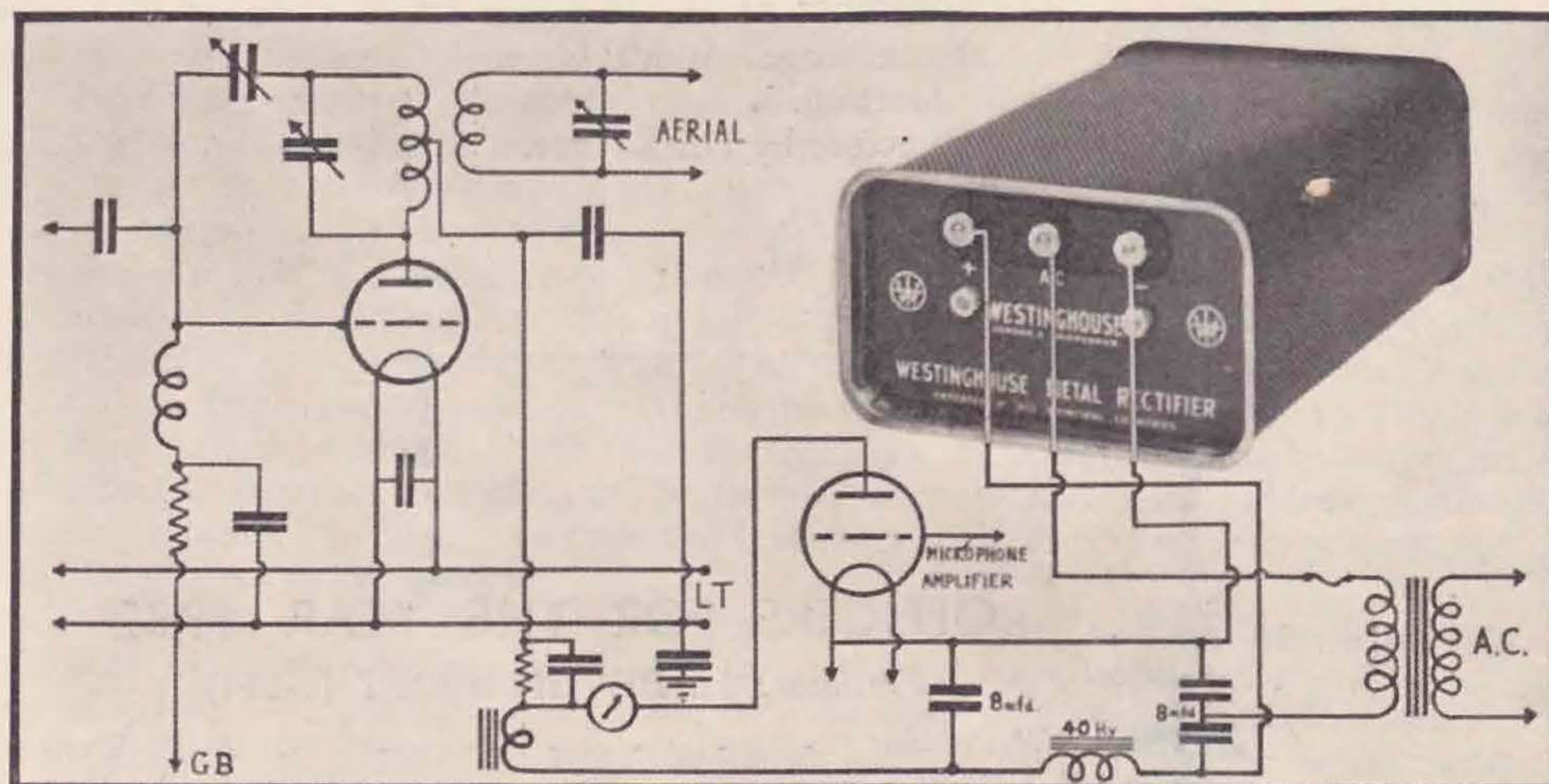
Capacity	Price each	Capacity	Price each
0.5 mfd.	4s. 0d.	4 mfd.	12s. 6d.
1 "	5s. 0d.	6 "	18s. 0d.
2 "	7s. 0d.		

T.C.C.

ALL-BRITISH
CONDENSERS

The Telegraph Condenser Co., Ltd., Wales
Farm Rd., N. Acton, W.3.

♥1068



An A.C. POWER SUPPLY UNIT for POWER OSCILLATOR & MODULATOR STAGES

of a transmitter is now very much simplified by the advent of the new Westinghouse Metal Rectifier, style H.T.11. This unit has an output of 500 volts at 120 mA, and is designed for use in the voltage doubler circuit. It sells at 35/-.

The illustration shows the power amplifier stage of a transmitter, modulated by a D.O.25 valve and fed from the A.C. mains by means of the style H.T.11 metal rectifier.

The amplifying valve is an L.S.5, the total current consumption being 100/110 mA's.

Particulars of suitable power supply units and Westinghouse Metal Rectifiers in general are given in "The All Metal Way" obtainable from The WESTINGHOUSE BRAKE & SAXBY SIGNAL CO., LTD., 82, YORK ROAD, KING'S CROSS, LONDON, N.1

WESTINGHOUSE
METAL RECTIFIERS

THE INCORPORATED
RADIO SOCIETY OF GREAT BRITAIN
 AND THE
BRITISH EMPIRE RADIO UNION

53, VICTORIA STREET, LONDON, S.W.1. (PHONE: VICTORIA 4412)

PATRON: H.R.H. THE PRINCE OF WALES, K.G.

R.S.G.B. CALENDAR.

Forthcoming Lectures.

1932.—September 30. Discussion on
 Recent Work on 56 m/c, to
 be opened by J. W. Mathews
 (G6LL).

October 21.

November 25.

December 20. Annual General
 Meeting.

Lecture by Dr. Raynor.

1933.—January 27.
 February 24.
 March 31.

OFFICERS FOR THE YEAR 1932

President: H. BEVAN SWIFT (G2TI)

<i>Acting Vice-President</i>	-	-	-	-	-	-	-	A. E. Watts (G6UN)
<i>Honorary Secretary</i>	-	-	-	-	-	-	-	J. Clarricoats (G6CL)
<i>Honorary Treasurer</i>	-	-	-	-	-	-	E. Dawson Ostermeyer (G5AR)	
<i>Provincial District Representative on Council</i>	-	-	-	-	-	-	H. B. Old (G2VQ)	

COUNCIL

A. W. Alliston (G5LA), J. D. Chisholm (G2CX), J. J. Curnow (G6CW), A. D. Gay (G6NF), J. W. Mathews (G6LL), H. C. Page (G6PA), T. A. St. Johnston (G6UT), J. C. Watts (BRS246), H. V. Wilkins (G6WN).

All correspondence should be addressed to The Secretary (or other officer concerned), The Radio Society of Great Britain, 53, Victoria Street, London, S.W.1. Insufficiently addressed letters may be considerably delayed.

Bulletin

*The only Wireless Journal Published by Amateur Radio Experimenters
in Great Britain*

Hon. Editor pro tem.: The President.

Temporary Editorial Committee: J. J. Curnow (G6CW), J. W. Mathews (G6LL), A. O. Milne (G2MI).

Advertising Manager: H. Freeman.

SEPTEMBER, 1932.

Vol. 8. No. 3.

EDITORIAL.

CONVENTION has come and gone, and we can confidently look back upon it as a successful event. In spite of the advancement of the Convention a month, which landed it into the usual holiday period, a record attendance was obtained both at the meetings and the ever-popular dinner. So great was the attendance at the latter, we literally overflowed the premises in all directions; late comers even having to dine in a small party upon the ground floor. We were particularly pleased to see so many of our provincial and overseas members, and hoped they enjoyed their sojourn with us.

The 1932 Convention will long be remembered by the torrid heat which accompanied it both at the stand at Olympia and also at the dinner. All praise is due to those who carried out their voluntary duties under such trying conditions, and we sincerely hope that if Convention takes place in August again, the weather will be more bearable.

Of course, one of the main topics discussed was the formation of the new R.N.W.A.R., first announced to the members in our last issue. Its success is assured, and within a few hours of the BULLETIN being in our readers' hands, we were receiving telegrams and letters of congratulation from every quarter. When the announcement followed in the daily press, further applications poured in, both to H.Q. and also the Admiralty, and there is little doubt that an effective body of men can now be formed to constitute the nucleus of the Reserve. We were very pleased to be able to have Capt. Murray with us on Saturday afternoon to further explain the objects of the reserve.

Further details of the Convention are reported elsewhere, and we can only thank all who attended for the great interest shown, and the constructive criticism which arose.

Our stand at Olympia was well patronised, not only by the members themselves, but also by the general public. Numerous were the enquiries made to us about the Society and its work, while quite a number of application forms were filled in by would-be members. We had the usual struggles to impress upon some visitors that the Society was not an organisation for the free maintenance of H.T. batteries in broadcast receiving sets. In a few cases we were actually blamed for our shortcomings in not having sent round to see to the set, the visitors having mistaken us for another association.

From further questions asked it is obvious that there is a marked increase in the interest taken in short wave reception by the public generally. We hope this will continue, as it is a step of distinct progress. Quite a number of firms showed short wave receivers upon their stands, and there is little doubt that large sales will be made during the coming winter.

CONVENTION 1932.

FOR months prior to the opening of Convention, the question had been uppermost in the minds of those responsible for its organisation: would an early Radio Exhibition, followed by an early Convention, prove disastrous to both commercial and amateur radio interests?

Now that the events of the past few weeks have faded into the depths of pleasant memories, we can afford to regard lightly these fears. For all records were broken both at Olympia and at our Seventh Annual Convention. Never before have

The crystal controlled transmitter, which had been described in recent issues of the BULLETIN, with the single valve Pentode receiver, described in the August issue, were given pride of place on the front counter; whilst the transceiver, also described in our last issue, was set up in dignified state on the rear shelves. An Osram photo-electric cell exhibit, comprising a quick operating relay, the contacts of which were connected to powerful lamps installed above the stand, was placed on the right-hand counter. Piles of publicity pamphlets were arranged below the beam, and an



Convention 1932.

(At the Institution of Electrical Engineers, August 27).

so many radio amateurs been gathered together in one place as was the case during the business meeting of Convention; but before giving a survey of those proceedings, some remarks regarding the Society's activities at Olympia may prove of interest to those who were unable to be present.

Olympia—Stand 242.

As in former years, our stand was located in the gallery, but with the growth of commercial radio, the Main Hall had been engaged for the Exhibition, consequently the gallery exhibits were considerably more easy of access than in the past.

Thursday evening, August 18, saw the President and an able body of assistants working with coats removed in a temperature approaching the 100 mark, busily putting the final touches to Stand 242.

invitation to "Break the Ray" was exhibited prominently above the equipment. We have no record of the number of breaks, but as the bulk of a new edition comprising 10,000 copies of "What is Amateur Radio" was disposed of during the seven days of the Show, we can only assume that the "P.E.C." was given a severe life test!

As in former years, many of our members gave up a part of their annual vacation to do stand duty, and to these a special word of thanks is due. With record crowds during the second week, when the temperature was nearer to normal, their task became increasingly difficult, for the intelligence level of the enquiring members of the public who gathered around the stand, reached to new levels, and strings of ticklish questions became the order of the day.

BULLETINS, handbooks, callbooks, K.C. charts, and the other odds and ends which help to make amateur radio worth while, were in great demand, and long before closing day the supplies had been seriously depleted.

The evening hours brought all London to Olympia, and the Society's stand once more became the Mecca for dozens of provincial and overseas members. As was to be expected, the main topic of conversation centred around the formation of the R.N.W.A.R. Enthusiasm was at a high pitch, and from every quarter, congratulations poured in on those members of Council who had been instrumental in obtaining recognition from the Senior Service.

Leaving Olympia with its flashing signs and its optimistic note of tremendous business dealings, we will trace our steps towards that other home of electrical matters—The Institution of Electrical Engineers.

Convention.

The sight which greeted late arrivals to the opening meeting, on Friday, August 26, must have been more than inspiring, for never before have such crowds been present at that period of Convention. From North, South, East and West, Scotland and Wales, the Colonies and Dominions, from European countries, and from the U.S.A., they came together, these radio amateurs of 1932, all eager to renew old, and make new friendships, and to effect, in many cases, at long last, "QSO's visual."

Our President personally welcomed each member as he passed into the Lecture Theatre, and in a brief speech later gave a welcome to all who had made the journey to London. Telegrams and messages of good wishes were read from many members who had been prevented by circumstances from attending.

The Convention Lecture.

The Society were most fortunate to obtain the services of Mr. C. F. Booth, of the Radio Section, G.P.O., London, as a lecturer that evening. Choosing as his subject, "The Measurement of Frequency," Mr. Booth outlined the methods adopted by the Post Office in checking the frequencies of all and sundry services. Numerous slides, showing the apparatus used, and performance graphs of recorded transmissions taken over long periods, provided much interest, and it is hoped to publish in a future issue of the BULLETIN his lecture at length. Mr. Booth gave most interesting information regarding amateur activities, and stated that in a recent check it was found that only one British station out of 73 intercepted was found to be outside the British band allocations, although actually inside the Washington band. This check, he stated, was carried out on the 7 mc. band.

Following his lecture, several members contributed to a brief discussion; these included Messrs. Gay, Clarke, Dedman, Kempton and Kidd.

Station Visits.

At the conclusion of the meeting, charabanc parties were formed outside the Institution. Both vehicles set out heavily loaded to visit the stations owned by Mr. T. A. St. Johnston and Messrs. H. and L. Wilkins. At the same time, Mr. Arthur Watts, Acting Vice-President, invited the Empire

Link Stations to a meeting at his home. There were present at this meeting, Messrs. Brown, Owner, Exeter, L. Wilkins, Desmond, Price, Miles and Whyte.

Many important matters regarding the working of the Link network were discussed, including proposals for submission to the Business Meeting on the following day.

DELEGATES' MEETING.

The Delegates' Meeting, as in other years, commenced at 10 a.m., on Saturday, August 27, when the following were present:—

- District 1. Mr. S. Higson, G2RV.
 „ 2. Mr. L. W. Parry, G6PY.
 „ 3. Mr. V. M. Desmond, G5VM.
 „ 4. No representation.
 „ 5. Mr. Desmond, representing Capt. Price, G2OP.
 „ 6. Mr. Sydenham, G5SY, representing Mr. Bartlett, G5QA.
 „ 7. Mr. Drudge Coates, G2DC, retiring D.R.; Mr. Dedman, G2NH, new D.R.
 „ 8. Mr. S. Townsend, G2CJ.
 „ 9. Mr. F. L. Stollery, G5QV.
 „ 10. Mr. A. J. Forsyth, G6FO.
 „ 12. Mr. S. Buckingham, G5QF.
 „ 13. Mr. A. E. Wood, G5AW, representing Mr. Gay, G6NF.
 „ 14. Mr. J. E. Fynn, G6TX, representing Mr. St. Johnston, G6UT.
 „ 15. Mr. H. V. Wilkins, G6WN.
 „ 16. Mr. H. A. M. Whyte, G6WY.
 „ 17. No representation.

Scotland.—No representation.

N. Ireland.—No representation.

The following members of Council were also present:—Mr. H. Bevan Swift (in the Chair), Messrs. A. E. Watts (Acting Vice-President), E. D. Ostermeyer (Hon. Treasurer), J. Clarricoats (Hon. Secretary), J. W. Mathews, H. C. Page, J. D. Chisholm, J. J. Curnow and J. C. Watts.

The President, after opening the meeting, called upon the D.R.S. to read their reports for the year.

The following are the salient features of each report:—

District 1.—Activity is confined to local areas, particularly in Cheshire, where only the north and north-eastern portions of the county are active. Monthly meetings have been held regularly in Liverpool and Manchester. Activity is confined to 7 and 14 mc., although some experimental work is being carried on on the ultra high-frequency bands. Field days have been held with some measure of success.

District 2.—Sub-area managers were appointed for Sheffield, Leeds and Bradford, Hull and Bridlington. No letter budget has been in operation, but regular meetings have been held in Sheffield, Leeds and Hull. The Sheffield district has been mostly active on 28 and 56 mc., and the Leeds district mainly on 1.7. The social side of the district has been well catered for.

District 3.—The position in the Midlands is very satisfactory, and few complaints have been received. The formation of the Midland Amateur Radio Society has been instrumental in keeping the members together. A monthly meeting in connection with that Society has been held, when an average

attendance of 34 has been recorded. The majority of the active members are in Warwickshire. The Annual Conventionette was attended by eighty members, and was, until the Bristol meeting, the largest held outside London.

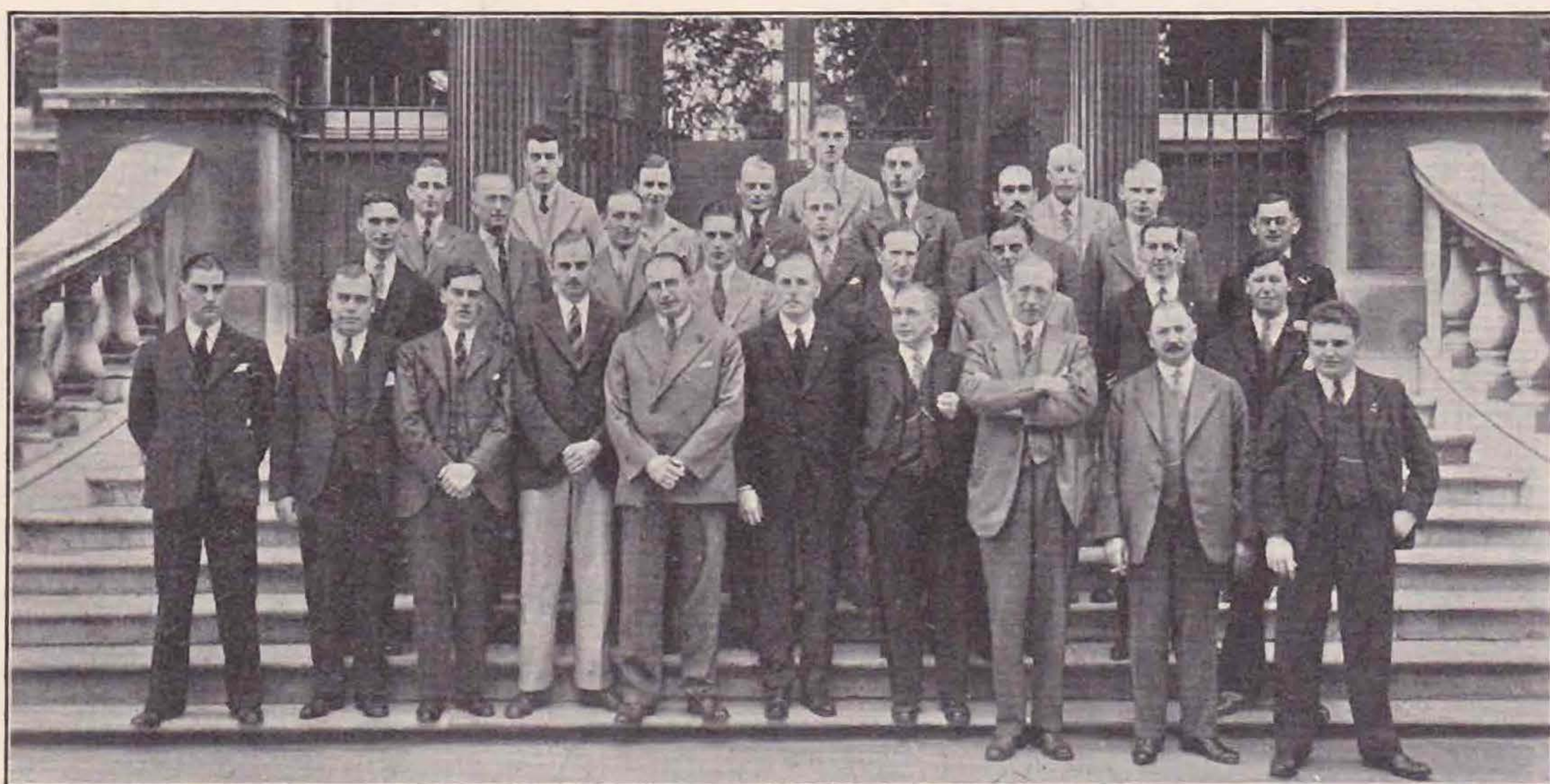
District 5.—Considerable progress has been made in the District, particularly in the counties of Gloucester and Wiltshire; in connection with the former county, tribute was paid to the work carried out by Mr. Weber, who found himself unable to carry on during the coming year. Field days had been held with considerable success, an average of sixty people being present. The Annual Conventionette was the biggest ever held outside London, 98 members being present.

District 6.—The position is very satisfactory, but the D.R. viewed the great increase in membership

District 8.—Although numerically small, the membership is fairly active. The geographical situation of the main towns prevents the holding of regular meetings, although a good muster was present in Cambridge recently.

District 9.—The district has run smoothly, and the majority of members are active.

District 10.—Owing to general trade depression, progress has slowed up somewhat, but the proportion of efficient stations is good. A letter budget is circulated, and fairly well supported. Regular meetings are held in the larger towns, but the attendance is not high. The 1.7 mc. band is in constant use, and some interest in 28 mc. work is being revived. A suggestion was made that the T. & R. BULLETIN should be sold at bookstalls, but during the discussion which followed, the



MEMBERS OF COUNCIL AND D.R.'s.

Front Row: J. W. Mathews J. Watts, H. Wilkins, G. W. Thomas, J. Clarricoats, A. Watts, H. Bevan-Swift, Capt. Murray, E. D. Ostermeyer, L. Parry.

Second Row: S. Buckingham, T. A. St. Johnston, V. M. Desmond, S. Townsend, A. J. Forsyth, Commr. Saunders, A. D. Gay, H. C. Page, G. Marcuse.

Third Row: J. Davies, S. Higson, E. A. Dedman, F. Miles, A. E. Livesey, J. Drudge-Coates, J. J. Curnow, F. Stollery, J. D. Chisholm, W. B. Sydenham.

with a feeling of apprehension, feeling that some steps should be taken to ensure that the right type of person is being elected to membership. The Conventionette held at Whitsuntide was a success; whilst field days, mainly concerned with work on 56 mc., have been carried out with varying degrees of success. The R.N.W.A.R. scheme will be fully supported in the District. An appeal was made for the retention of District Notes.

District 7.—A verbal report was given by both the old and new D.R.S. Mr. Drudge-Coates suggested that the Empire Link Stations should attempt to obtain news for prompt publication in the BULLETIN. Mr. Dedman mentioned that some difficulty had been experienced in obtaining the services of a C.R. for Berkshire, and recommended that Mr. Neale, C.R. for Hampshire, should temporarily take over the control of the former county.

President explained that the BULLETIN should be regarded as a private journal. A further suggestion was made that in future no new member should be elected without the D.R. being asked to approve the application. In a subsequent discussion it was agreed that whilst the suggestion was sound, the practical application was difficult. The President pointed out that in the event of an undesirable person being elected, it was the duty of the D.R.S. to advise Council, who would take the necessary action.

District 12.—Progress has been somewhat slow, but fair attendances have been obtained at meetings. Lack of transport has prevented the district from organising field days, but a most successful letter budget is in operation. (The method employed was described in detail, and further particulars can be obtained from the D.R.)

District 13.—A letter budget has been circulated amongst the active members. The problem of accommodation for monthly meetings was solved by the formation of the South London and District Radio Society. Regular meetings have been held and well supported. Owing to its unwieldy size, arrangements have been made to appoint two sub-district managers to watch the interests of members in S.E. and S.W. London. Some B.R.S. members appear to be a little unsettled, and a suggestion was put forward that they should set up a small committee to discuss ways and means for increasing interest in their work. The President welcomed the suggestion, and invited interested B.R.S. members to communicate with headquarters on the matter.

District 14.—No letter budget has been run, as the members meet regularly. Field days have been well supported, whilst 56 mc. work is producing considerable activity. The welfare of the B.R.S. members is kept to the fore.

District 15.—Monthly meetings have been held regularly, and have been well attended, but the letter budget, although still in operation, has received poor support. Station visiting is an important feature of the social life of the district, whilst several visits to Provincial stations have been attended with great success. All amateur bands are being used by members in the district, and considerable activities have been recorded on 56 and 112 mc. Assistance to a local Boy Scout troop and to the Middlesex Association for the Blind has been rendered.

Scotland.—An analysis of progression was given, in which it was shown that a large number of B.R.S. members had been granted A.A. licences during the year. The membership in Scotland showed an increase of 50 per cent. during the year. Stress was laid upon the nomination of B.R.S. men living in isolated spots. Mr. Wyllie considers that before a person is proposed his nominee should ascertain that he has a reasonably easy access to other members. Morse practices have been carried out, but with little success.

The organisation of the country will remain substantially the same as at present.

A discussion followed, and opinions were given on various suggestions made by the delegates.

The following decisions were reached:—

1. D.R.S. would make arrangements to provide Morse practices if the response warranted it.
2. District notes would continue as heretofore, except that an attempt should be made to write them up in as general a way as possible.

Conventionettes, 1932-1933.

These were arranged as set out in Table 1.

Future Tests.

The Hon. Secretary mentioned that steps had been taken to extend interest in organised tests by spreading them out over a longer period than had been the case in previous years. He further explained that as many members wish to compete in several tests, it is unfair to run any series for more than two week-ends, excepting the B.E.R.U. Contest. Special and general rules governing each event were read and approved.

To cater for the increased interest which is being shown during field days, a decision was reached to organise a National Field Day during June, 1933. Details of this and other contests appear elsewhere in this issue.

TABLE 1.
Conventionettes, 1932-33.

	TOWN.	DATE.
District 1.	Liverpool...	October 9, 1932.
" 2.	Leeds ...	July 1, 1933.
" 3.	Birmingham ...	March 19, 1933.
" 4.	Nottingham ...	To be fixed later.
" 5.	Bristol ...	May 7, 1933.
" 6.	To be fixed later	June 4, 1933.
" 7.	Tunbridge Wells	May 21, 1933.
" 8.	Cambridge ...	March 5, 1933.
" 9.	Southend-on-Sea	June 17, 1933.
" 10.	Swansea ...	May 28, 1933.
" 16.	Tunbridge Wells	May 21, 1933.
" 17.	To be fixed later.	

TABLE 2.
Empire Link Stations.
1932-1933.

Group A.

For all traffic with Asia and Australasia.

Wilkins (G6WN)	} London.
Whyte (G6WY)	
Smith (G6VP) ?	
Exeter (G6YK)	} The South.
Powditch (G5VL)	
Bartlett (G6RB)	

Group B.

For all traffic with Africa and America.

Brown (G5BJ)	} The Midlands.
Miles (G5ML)	
Desmond (G5VM)	
Owner (G6XQ)	
Wyllie (G5YG), Scotland.	
Neill (G5NJ), N. Ireland.	

BUSINESS MEETING.

All attendance records were beaten at the Business Meeting, when some 220 members were present.

Society Awards.

The proceedings opened with the presentation of Society trophies. Mr. Miles, Mr. Wilkins, Mr. Page and Mr. Waters were there in person to receive their awards, whilst Messrs. Wyllie and Ingram, other trophy winners, were cheered as their awards were announced.

The R.N.W.A.R.

Probably the most interesting feature of the 1932 Convention was the talk given by Capt. A. J. L. Murray, R.N., Director of Signals. Capt. Murray explained the aims and objects of the R.N.W.A.R., and in language which every "ham" could understand, made it apparent to all that the Royal Navy were looking to the R.S.G.B., as sponsors of organised amateur radio in this country, to provide a Reserve of trained men for use in times of war. He paid a sincere tribute to the manner in which the scheme had already been received, and assured the meeting that every opportunity would be given to those enrolling to make their work interesting.

(Continued on page 88.)

ON LOGS.

By K. E. B. JAY (G2HJ).

THERE are two primary considerations governing the layout of a log book, viz., simplicity and comprehensiveness, and these are not mutually exclusive as one might be led to believe by the elaborate details often given by amateurs when writing on the subject. Without simplicity the log becomes too costly for the receiving operator to record every station heard, or if he makes the log himself, it is so much trouble that he naturally uses it as little as possible; if one has to rule ten or a dozen columns on every page of log book one avoids wasting space. Without a comprehensive record of each reception and transmission the log is useless, therefore details must be properly recorded. Let us then consider the best method to adopt.

In the first place it is convenient entirely to separate that part of the log recording reception from that in which you note your transmissions. Also the reception part is of greatest interest to BRS stations, and since one ordinarily hears more than one transmits, it is on this side that simplification is most necessary. The most important facts to record are, then: Date, time, band of frequencies, station calling and station called, signal strength, readability and note, QRM, QRN, QSB, QSX, if any, and weather. Even with such data it looks as if one cannot avoid having a very large number of columns. But consider the date, for instance; why a separate column for that when you may have as many as sixty or eighty log entries for one date? And the frequency band—that is unlikely to change with every entry. Again, is the weather even in England so variable as to need noting every two minutes? In fact, I have reduced my log to two ruled columns per page and still get down more than contained in most logs. In my case the log book is a note-book of about 200 pages measuring seven inches by nine inches, ruled twenty-three lines to the page and bound in boards, price one shilling. On each page I rule an inch margin on both left and right-hand sides. If you like the right-hand column may be subdivided into two, but this is not necessary.

by putting the letters M, N, B or X on the line in the space between the last call letter and the QSA figure. Capital letters are used to denote bad QRM, etc., and small letters for slight interference. There is, of course, no reason why these indications should not be amplified if desired, but it is quite unnecessary to rule separate columns for them since one does not always need to make use of them. In the space between call and QSA there is also room for any comment on the reception, such as the "long call" against WIWU. Here also I put "(cld)" against a station whom I have called without success in raising him, a device which saves space in the transmitting log.

It may be argued that in putting two figures in the right-hand column I have used virtually three columns and called it two. If you prefer, by all means rule a third, but in my own case I do not always use the T-code as I consider it unsatisfactory. It not only fails to describe the smoothness of the note but also the steadiness of the wave. A station can have a bad note but at the same time be quite steady. I prefer to log notes by letters, using D for D.C., R for R.A.C., A for A.C. To indicate a rough R.A.C. note I use RA; for a smoother one, RD; for ripply D.C., DR. This method, being retained from the time prior to the use of the T-code, has the advantage of giving a report on the note independent of the steadiness of the wave. The latter is recorded separately as QSB. The appropriate letter for the note is then placed against the figure for signal strength instead of the usual R.

It should be noted that there is no provision for a description of the receiver and aerial. It is merely a waste of space to provide separate columns for these, because even the most energetic BRS does not alter his receiver more than once a week, and these alterations can be described in detail across the page, disregarding the columns, below the date, and obviously there is no need to repeat the description for every entry. In the same way all messages received during a contact are written straight down in the log, providing a complete record of the other station's comment, which is often very useful and interesting.

The transmitting log is more elaborate and is much more a matter for the individual as its layout must depend on the experiments to be conducted. For this the back of the log book is used, and as one cannot get all the desired information on one page, both leaves are taken together, the left-hand page being ruled into eight columns and the right-hand provided with an inch margin at the outer edge, as in Figure 2.

As in the receiving log the date is written across the top of the page. The time and frequency are recorded in the first two columns and then details of the report received from the station worked. The fifth column is reserved for any fading, etc. (QSB, QSX, etc.). The last three columns are a matter for individual taste; certainly the input to the last valve should always be recorded, but with multi-valve transmitters some may desire to record

MAY 2ND (SAT.).				
Wx: fair but windy.				
2226	CQ de W3AAZ	14 mc.	M.b. 4	5.4
2228	W6BNC de WIWU	long call	4	3.4
2233	ON4FQ de W3APO	m.n.x.	3	3.4
2240	Test de G6WN	M.n.b.	2	9.3

FIGURE 1.

Figure 1 shows the arrangement. To begin with the page is headed with the date, then below it a note is made of weather conditions. In the left-hand column I put the time in G.M.T. Next to it the stations called and calling are recorded just as they are heard, and after that, in the case of the first entry, the frequency band used—in this example 14 mc. The right-hand column contains the T-code number and the R-strength; and on the left of this column the QSA figure is recorded. QRM, QRN, QSB and QSX are dealt with simply

the input to each valve. Practically the whole of the right-hand page is left for notes of experiments, etc., the last column containing the call of the station worked. Brackets are put round a call-sign if it is worked, but not if only called. Generally stations called are not noted unless they were called on schedule or unless the transmission was the only one made that day. If other transmissions have

This arrangement provides the simplest possible method of compiling logs, and one does not hesitate to log everything heard in full, a practice that is valuable to other transmitters and which provides some chance of having a useful survey of radio conditions over long periods if one operates consistently. A list of calls heard compiled from such a log may be very imposing in length, but since

LEFT-HAND PAGE.								RIGHT-HAND PAGE.	
GMT	QRH	Report.			Power.			Notes.	cld (wk'd)
		QSA QRK	T	QSB QSK	Watts	V	Ma		
1827	7150	5.8	7	stdi	8	400	20	SEPT. 17TH M on my wave	(G6RB) test
1900	14300	—	—	—	10	400	25		

FIGURE 2.

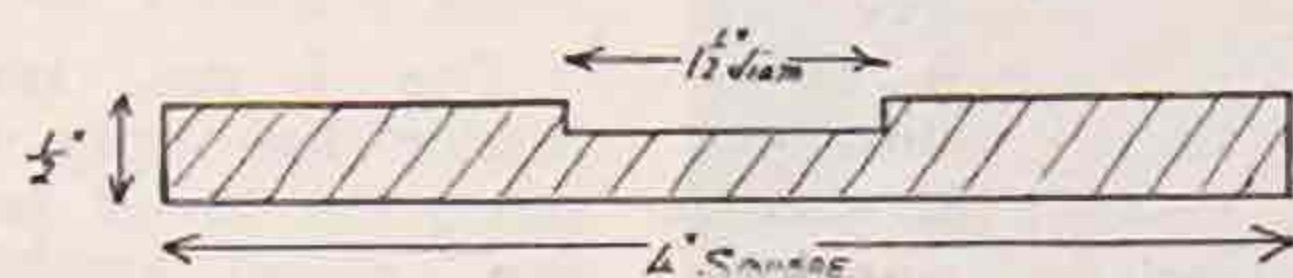
been made and the input power and frequency recorded, then an unanswered call is merely marked "(cld)" in the receiving log, as mentioned previously. No particular column is provided for a description of the transmitter as this will not be changed often enough to make it worth while. Descriptions of the apparatus are written on the right-hand page wherever necessary.

precise details of the reception of every call are recorded, a report can quickly be furnished to anyone who asks for it, and the calls heard list then justifies its existence. A list of calls noted at random is of little use to anyone, because the most one can say in answer to a request for a report is, "heard you some time in May OM. FB sigs," which means nothing.

Quartz Pebbles.

By E. I. ELLIOTT (G5LT).

Referring to my article in 1928 BULLETIN, the following information may be of help to fellow members. One of the reasons why crystals will not readily oscillate is because the two surfaces are not absolutely parallel. I do this by means of a mild steel plate recessed deeper than the finished thickness of the crystal; for instance, for 80 metre lens, I use .039 deep, and for 40 metre, .018 deep.



Sketch of Plate Section.

The following are the operations:

- (1) Clean plate free of all dust or grit.
- (2) Heat the plate over an ordinary gas stove until hot enough to melt ordinary candle wax.
- (3) Press candle on to recess of plate until a little less than the depth of recess is full of melted wax; take plate off stove and drop lens carefully into centre of recess. Cool either by air or water, but when lens is very thin, air is safer.
- (4) Grind as usual till you "feel" the surface of plate is rubbing on plate glass; then grind farther till plate is also polishing.
- (5) Reverse the crystal by reversing the procedure, viz., warm over gas stove until wax is just melting, clean out old wax and clean the plate and

crystal—either hot water or other suitable means—then carry on as (4). The lens will then be dead true parallel surfaces.

(6) Try lens in C.O. as usual to find wavelength, which, with the plates mentioned, will leave ample to grind to the 80 or 40 band.

(7) To reduce the recess, used gummed label paper, approximate sizes .001 and .002 on to the crystal, according to amount required to be ground off; even a thin coat of shellac on the back of the gummed paper (after sticking it on crystal) will give you .0005 to grind away.

Crystals done in this way need not be polished at all, and after many ways of making, have proved to be the best; about five minutes to take .001 off, using knife-powder on plate-glass $\frac{1}{2}$ in. thick, is best. It takes about one and a half hours to finish a lens, taking about .006 off. I can arrange to obtain suitable plates for any members interested if they will write, and will be glad to help any new hams who have not read previous articles on pebble grinding.

It is not difficult to produce either 80, 40, or 20 metres crystals by means of using the plates referred to.

(N.B.—A square recess would be better, but is much cheaper to have a round recess.)

Another Pirate!

G5QV complains that his call sign is being used upon the 7 mc. band and would welcome any reports which would enable him to trace the offender. He states that he never uses the band himself.

STATION DESCRIPTION No. 27.

G5BJ**EMPIRE LINK STATION.**

By G2PD.

HAD Shakespeare lived in modern times, and had he visited the station of G5BJ, he would undoubtedly have written in somewhat of the following strain:—

There are three stages in the affairs of Radio,
First the operator, bitten with that etheric bug
Sits far into the night with active brain.

Next the transmitter, that mixture of Hell's
delight and Heaven's pain,

With signals sent with prayers and hopes and
fears,

For Empire contact, often all in vain.

And lastly the receiver, most bless'd in all the
game,

For thereby is the outposts' call brought back
to home again.

First, the Operator.

History repeatedly shows that all the important discoveries and contributions to the sciences are made by those who are fired with indefatigable patience and persistence.

Thus only are they enabled to do what at first sight appears endless and useless work in following up some small phenomenon which they fail to understand.

G5BJ is one of those persistent and painstaking experimenters, and doubtless this fact accounts for the outstanding success of his station. With him, card collecting has never become more than a pleasant reminder of things accomplished, and the cards themselves are considered purely as milestones in progressive experimenting.

DX *per se* does not thrill him, but to get a better and better DX report is his greatest ambition.

This is shown by the fact that he was known to ask one of his first ZL contacts to stand by, whilst in the dead of night he took down his aerial and erected a new one, in a vain endeavour to raise a QSA4 to QSA5.

That such a man should have any "fixed" apparatus is inconceivable, and it is rarely possible to visit him on two successive occasions without

something having been altered in order to allow that distant Empire contact to reply "Tks OM Solid."

The Transmitter.

Radio G5BJ was born a ten-watter in 1929, though the operator had had four previous years' experience as operator of G6YD. In 1931, a 50-watt licence was granted, and that is the present power.

With only D.C. mains available, accumulators to 750 volts were chosen as H.T.

These are ingeniously arranged in banks of 150 volts connected to D.P.C.O. switches, which allow of them being connected in parallel for charging direct from the mains, and series for transmitting. All signals are, of course, crystal-controlled, and incidentally monitored by means of a Dynatron frequency meter used as a monitor. The actual transmitters, of which there are two, one each for the 14 mc. and 7 mc. bands, follow the modern trend in so much that they are built in tiers, each tier being efficiently screened above and below.

The 14 mc. transmitter has three tiers, the lowest being the crystal oscillator stage, the middle the frequency doubler stages, and the upper, the power amplifier using a DET1 valve.

The 7 mc. transmitter has only two tiers, the lower being the crystal and FD, and the upper the PA.

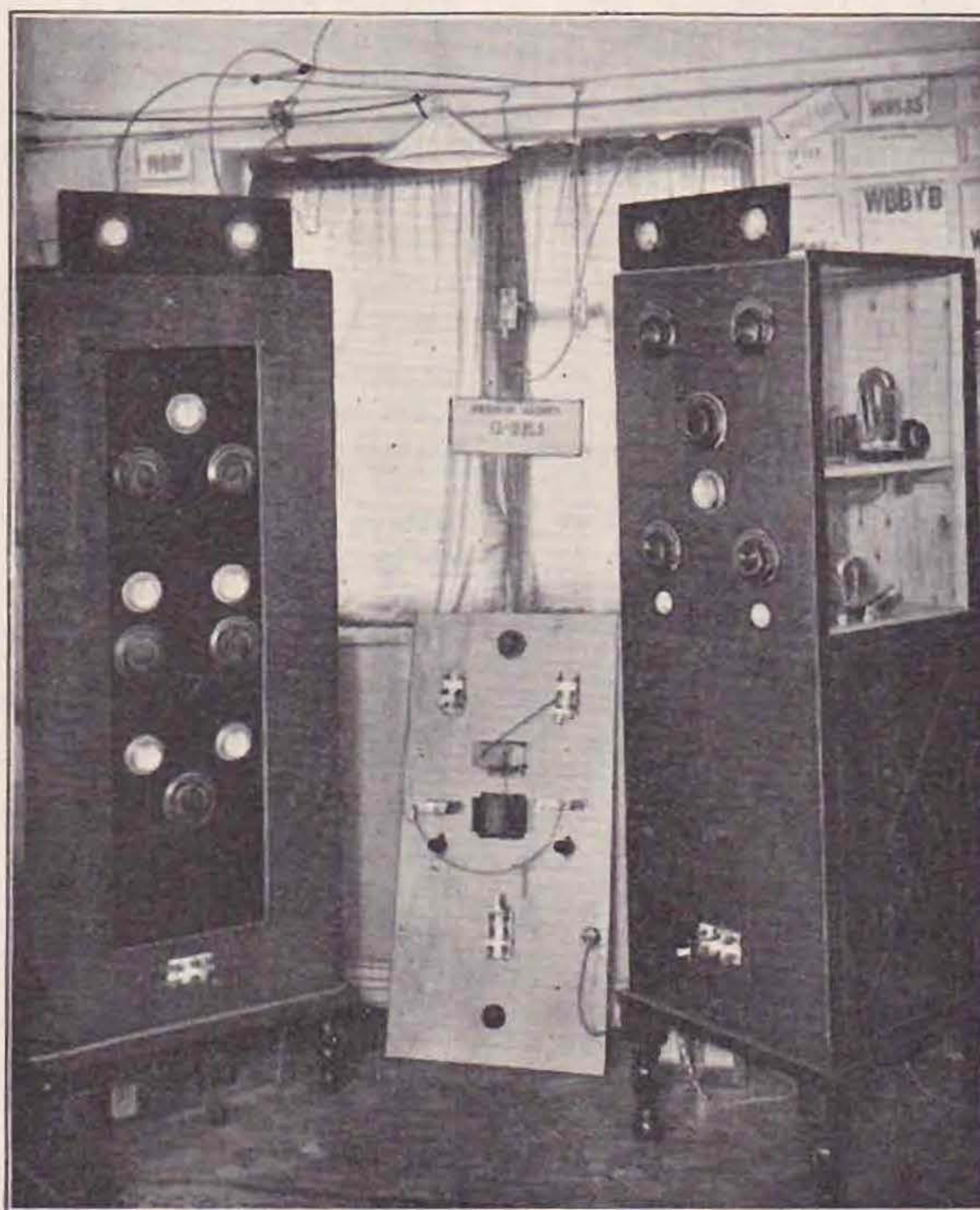
Both transmitters feed to a 66-ft. top Zeppelin aerial by means of 47-ft. feeders, which may be

connected at a moment's notice to whichever transmitter it is desired to use.

Keying is by bug and relay, coupled with efficient click filters; key clicks being inaudible on the next-door neighbour's broadcast receiver.

Fone has been experimented with, and used, but has been discontinued owing to its limitations and to the possibility of causing QRM to other local stations.

(Continued on page 90.)



RADIO TRANSMISSION AND THE UPPER ATMOSPHERE.

It will no doubt be interesting to review a few details of the mechanism of radio transmission now that the available amateur bands have been explored and experimenters found using them more or less familiarly.

To the newcomer some of the statements may seem blunt or novel, but it is not possible to cover the whole theory and practice of using or investigating upper atmosphere phenomena. Rather, it is hoped to indicate some of the more recently discovered effects and enable observers to co-relate their results or obtain a new line for observation.

The following notes are in the main extracts from T. L. Eckersley's paper, "Studies in Radio Transmission," recently read at a meeting of the Institution of Electrical Engineers:—

The Heaviside Layer.

This is the region of the upper atmosphere where radio signals are reflected, refracted, attenuated, or allowed to continue in practically a straight line, according to the state of the layer and the wave-length and angle of incidence of radio signal.

There are two layers: the E. layer at about 100 km. height and the F. layer at about 250 km., which may have a state of ionisation as in Fig. 1, which shows the number of electrons per cubic centimetre at different heights.

The ionisation in both E. and F. layers is, of course, due to radiations from the sun: in the F. layer by ultra-violet radiations 730 to 910 A.U., and in the E. layer by bombardment from neutral atoms ejected by radiation pressure from the sun.

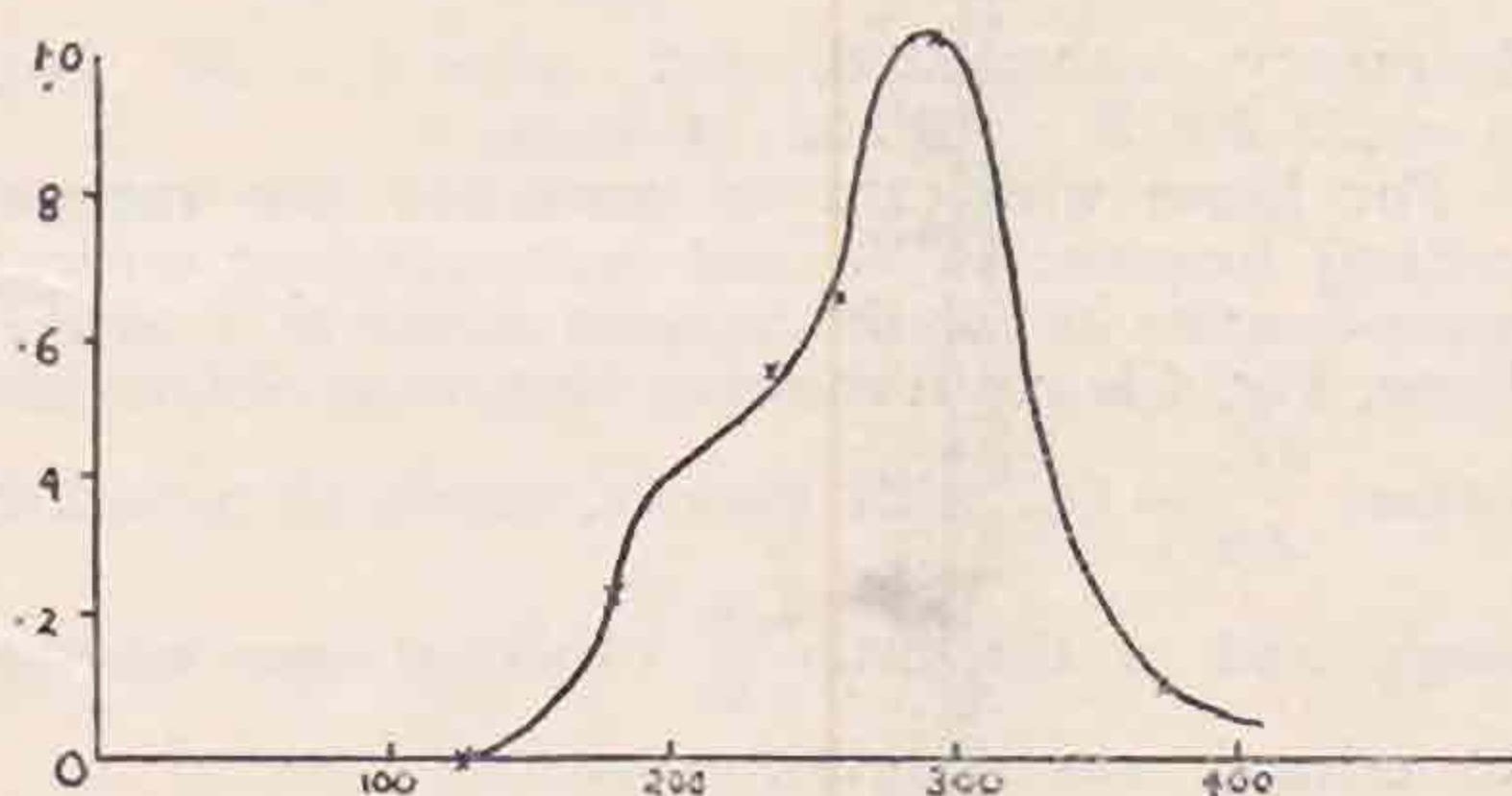


Fig. 1.

In consequence of this, the state of the F. layer over a certain part of the route, say from England to North America, may vary as in Fig. 2.

Now let us consider the effect of the layer on a signal which penetrates the E. layer and is affected by the F. In Fig. 3 T. is sending out energy from its aerial at all angles of projection.

Ray No. 1 is bent back to earth at R and from R up to the layer again and so on. To be refracted or bent in the layer requires an expenditure of

energy and consequently, after, say, seven layer-earth journeys, some thousands of miles range is covered and seven attenuations encountered, neglecting loss from earth or sea reflexion.

Ray No. 2 similarly arrives in the first place at R2, and will obviously require a few more layer-earth reflexions before attaining the same range that Ray No. 1 reached in seven reflexions.

The amount of attenuation suffered by rays 1 to S will arise later; perhaps you already have an idea which has the best of it, leaving aside E. layer attenuation. We can imagine the innumerable other rays that must exist.

Now examine ray S. This comes back to earth

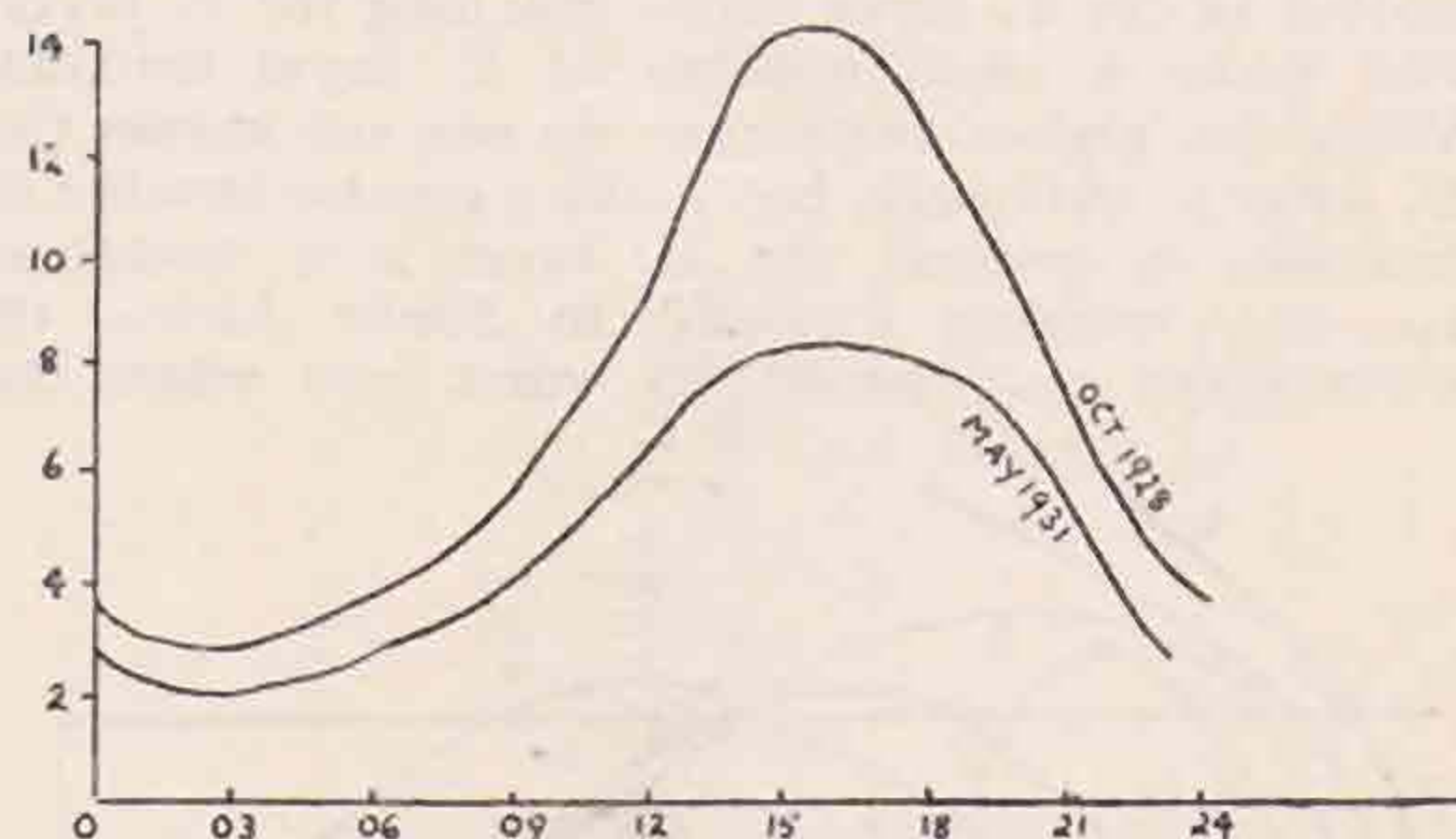


Fig. 2.

at R0 at short range, while another ray L.—only a little more steeply projected—may not find the ionisation sufficient to bend it back to earth, and so ray L., and any others more vertical, are lost into space.

Ray G. is interesting. It has a hard tussle with the layer, and just manages to get bent back to earth, but by the time this happens it has reached almost to R2, and consequently arrives at some place where one of the lower angle rays is arriving, and there may be an abnormal signal strength at R2 or not. The attenuation of ray G. may make its effect negligible.

Hence we have—

- (a) signals reaching all distances, due to the lower angle rays;
- (b) between transmitter and R0 no signals, unless due to ground wave or "round the world" from (a);
- (c) all the high angle energy lost to space;
- (d) the possibility of good signal strength at one particular distance provided the aerial radiates at the angles required for the particular wave-length and degree of ionisation of the layer.

To be exact, this is governed by the condition when change of angle of radiation produces minimum change in range. For example, on 20 metres at mid-day this minimum change takes place at 32° to 35° and gives 1,000 km. At the same time, on 10 metres, around 6° gives 3,000 km.

We will now return to ray 1, 2.....S and their

attenuation. The higher angle rays penetrate more into the layer, and do so more often than the low-angle rays in reaching a given range. The high-angle rays are, then, the most attenuated. The following relations will also be interesting:—

- (1) Attenuation varies inversely as the gradient of the layer, i.e., a sharply defined layer produced least attenuation.
- (2) Attenuation is proportional to the nearness of the layer to the earth.
- (3) The shortest wave-lengths are the most attenuated, although their range may be the greater, i.e., 10 to 20 metres, giving us weak signals and long distances, while 40–100 metres give us under the same conditions shorter distance but better signal strength.

The effect of the lower E. layer, although hardly bending a 40- or 20-metre ray, has some appreciable attenuating effects, and, over a few thousand kilometres range, attenuates all rays below a certain angle equally. For the lowest angle rays travel farther in the E. layer before reaching the F. layer, and make a small number of E. layer transits. While the higher angle rays do not cut across the E. layer so obliquely, but make a greater number of transits, in general the E. layer is a nuisance. In, say, working England to South Africa, its attenuation may be at its worst just when the

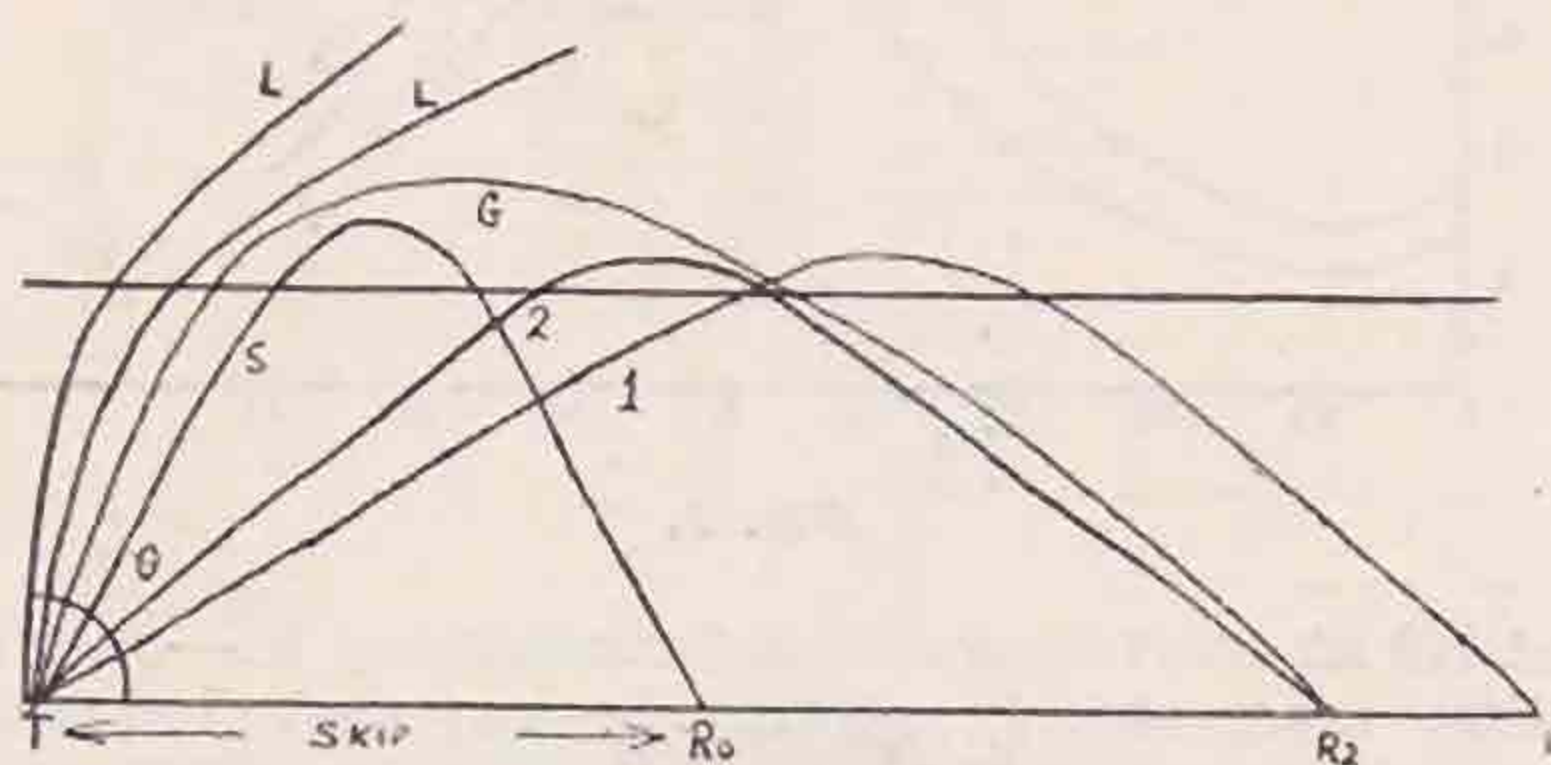


Fig. 3.

F. layer is trying its best to work well. It is this lower layer that is most affected by magnetic disturbances and day-to-day phenomena, but has a small sun-spot cycle variation. It is the F. layer which varies with the sun-spot cycle, but is hardly affected by magnetic storms.

Scattering or the tailing off of a dot into some irregular tail lasting a few thousandths of a second is associated with the part of the layer above 100 km., and is usually worse when the density is high.

The effect produced during magnetic storms is questionable, because usually the density increase in the E. layer during such a period causes such abnormal attenuation effects that scattering may either be abnormally large or small.

Up to 44 metres or so the scattering is worse on the longer wave-lengths.

Eckersley likens the effect to the scattering of alpha particles by heavy atoms, and suggests that the formation of ionic clouds and their dissolution, producing irregular refractions, is the cause of scattering. After all, the layer in which this effect is produced is ionised by solar bombardment, which is bound to be irregular like the bubbling of a kettle compared with its heat radiation.

The following formula may be of interest to those who are studying skip effects, etc.:—

Critical angle or angle of projection which just escapes through the layer:

Knowing max. number of electrons per c.c.: N ,
the electrons charge: $e = 1.59 \times 10^{-29}$ E.M. units,
electronic mass: $m = .9 \times 10^{-27}$ gramme,
and frequency used: v . ($c = 3 \times 10^{10}$ cm./sec.).

The angle θ_c is such that $\sin^2 \theta_c = \frac{NE^2 C^2}{\pi M V^2} - 2X$.

The last term $2X$ can usually be neglected, as it is the height of penetration divided by the earth's radius.

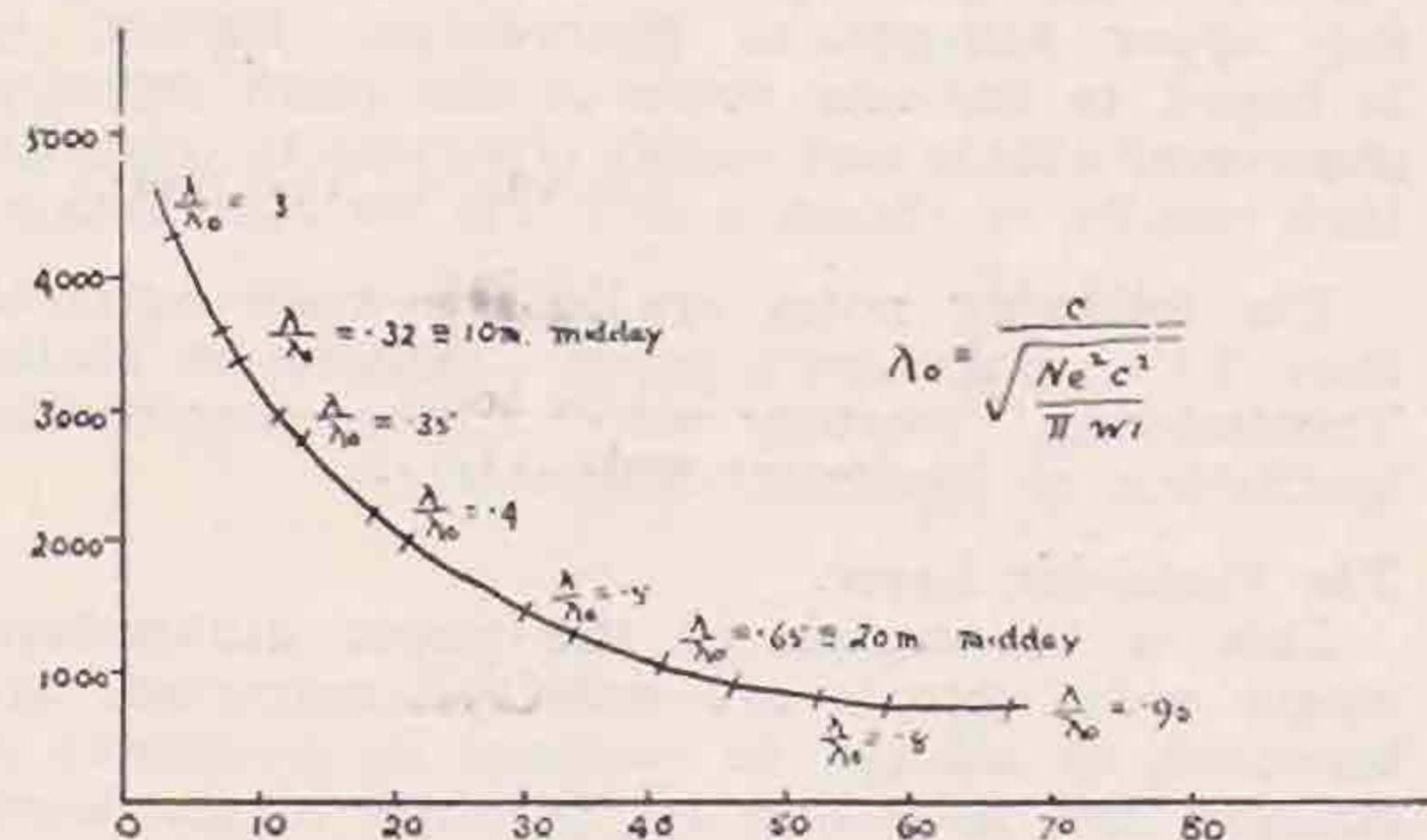


Fig. 4.

The refractive index for the layer is, of course, a variable quantity throughout its height. Where N is the number of electrons per c.c. and V is the frequency used. MU , the refractive index, is

found from: $\mu^2 = 1 - \frac{NE^2 C^2}{\pi M V^2}$.

Now the expression $\frac{NE^2 C^2}{\pi M}$ represents V_0^2 , the critical frequency for this degree of ionisation; so we can put $\mu^2 = 1 - \frac{V_0^2}{V^2}$, where V is the frequency transmitted, e.g., $\mu^2 = 1 - .57$, i.e., $\mu = .75$ for $N = 10^6$ on 14 mc/s.

For those who care to work out the various critical frequencies V_0 and corresponding critical wave-lengths λ_0 for the various values of N of the layer, Fig. 4 is given showing best range obtainable (when $\frac{dR}{d\theta} = 0$), with various values of radiation

angle and of the ratio $\frac{\lambda}{\lambda_0}$ (working wave-lengths to critical wave-length).

The formula is: $V_0^2 = \frac{NE^2 C^2}{\pi M}$ (as for finding critical angle), using values of N as suggested by Fig. 2.

Stray.

Regarding the transceiver described in the last Bulletin the diameter of the coil former was not given, due to an error. We wish to state that the former used was a Vecol 3" in diameter including the fins. As several enquiries have been received this note is to clear up any misunderstanding.

Q.C.C. QUARTZ CRYSTALS

1.75 mc., 3.5 mc. and 7 mc.

BAND CRYSTALS

Standard Type
(For use with up to 300 v.)

15/-

Power Type
(For use with up to 500 v.)

£1

100 KC. BARS

X.Cut. The frequency is checked against a N.P.L. calibrated bar and is given correct to 0.05%

Price **£1** (Dust-proof Mounting, 10/- extra.)

CRYSTAL HOLDERS

Type A, **4/6** An open type holder, of simple yet efficient design, for use with all types of crystals.

Type B, **10/-** An enclosed dustproof holder, fitted with plugs, giving instant interchangeability. For use with any type Q.C.C. Crystal.

Post Paid, the world over.

Your name and address on a postcard will bring our complete price list by return of post.

THE QUARTZ CRYSTAL CO. (G2NH & G5MA),
63a, Kingston Rd., New Malden, SURREY, Eng.
Telephone: MALden 0671

AT YOUR SERVICE!

You read the "Bulletin" because you are a member of the R.S.G.B.; therefore you must be keen on Short-Wave work, both Transmission and Reception. But are you able to get all the information you want? How to make that RX perk on five metres and what to do about modulating a CC outfit? How to put up an aerial which is "correct" theoretically and the way to set about getting a two-letter call?

This is where we come in! We exist to provide not only information required in connection with BCL work, from P.A. equipment and Radiograms to catwhisker receivers, but also all the dope you are wanting to become either a transmitter or a more proficient one. We don't try and sell you gear (unless you cannot get it yourself) but we do offer you dependable, unbiased and lucidly written technical information on anything connected with Radio.

TO OVERSEAS MEMBERS: We understand your needs. Any gear can be supplied and constructional work undertaken. Send us your enquiry.

What can we do for YOU?

Charges: 3/- per query; four or more, 2/6 each. Questions involving elaborate treatment are quoted for by return, while diagrams and sketches, executed by a Draughtsman, are included when necessary.

QRA—

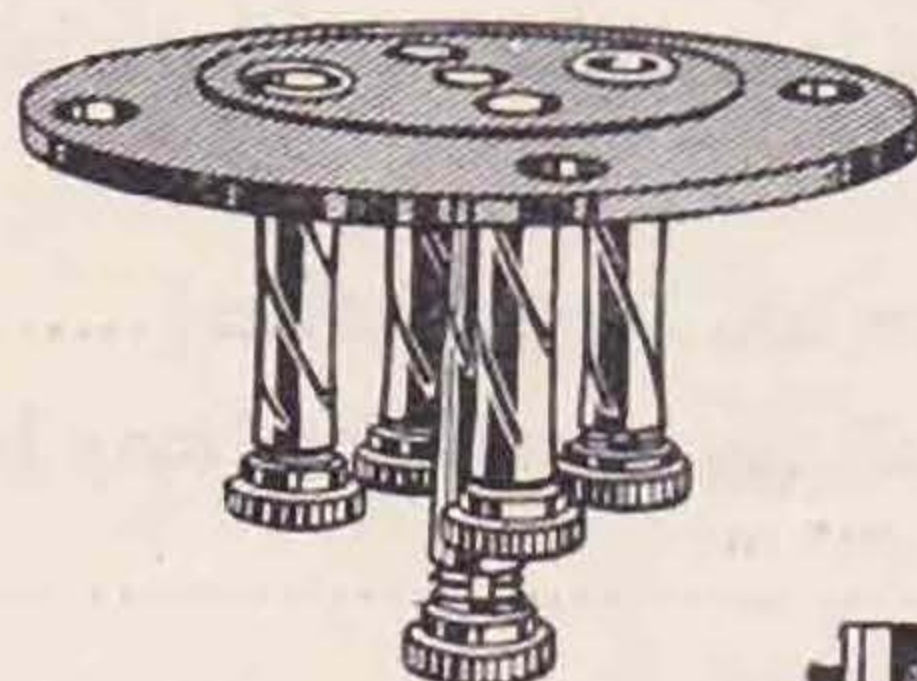
RADIO TECHNICAL AGENCY

2, Westgate Chambers, Newport, Mon.

NOTE.—This business is controlled by a Transmitter whose call is familiar to most R.S.G.B. members.

CLIX

Short Wave receiver, ordinary Broadcast receiver, Transmitter or Radiogram—whatever you are interested in you need "Clix."



Chassis Mounting VALVEHOLDER

Sturdily built, skeleton type for metal, wood or ebonite mounting. Turned Resilient Sockets give maximum surface contact with every type of valve pin—solid or otherwise. Sockets move laterally to centre with valve-pins.

4 pin model - 8d.
5 pin model - 9d.



"MASTER" PLUG
1½d.



HOOK or RING TERMINALS
2d.



PANEL TERMINALS
4d. and 2½d.



Folder 'T' on request.

"ALL-IN" TERMINAL
Complete 6d.



SPADE TERMINAL
2d.

CLIX

Cheapest PERFECT Contact

The Incorporated Radio Society of Great Britain.

Headquarters Society:—BRITISH EMPIRE RADIO UNION,

53, VICTORIA STREET, LONDON, S.W.1. ('Phone, Victoria 4412.)

APPLICATION FORM.

The Hon. Secretary,

Sir,—I beg to make application to be enrolled as a member, and shall be obliged if you will submit my name to your Council. I agree, if elected, to act and abide by the Rules of the Society as expressed in its Articles of Association and By-laws.

Signature.....

Name in full (please use Block Letters)

Address (to which all communications may be sent)

Nationality..... Age (if under 21).....

Call Sign.....

NOTE.—Members not having Call Signs are allotted B.R.S. (British Receiving Station) or B.E.R.S. (British Empire Receiving Station) Numbers, which are used for identification purposes only.

Proposed by..... Seconded by.....

NOTES.—Applicants who do not know any member may accompany their forms by references in writing by persons to whom they are known. Such persons should be householders, and should state profession and length of acquaintance with applicant.

The Council reserve the right to refuse any application without reason.

UNDERTAKING TO BE SIGNED BY APPLICANT.

I, the undersigned, agree that in the event of my election to membership of the INCORPORATED RADIO SOCIETY OF GREAT BRITAIN, I will abide by and observe the Rules, Regulations and Articles of Association of the Society, and that in the event of my resignation from the Society given under my hand in writing, I shall, after the payment of all arrears which may be due by me at that period, be free from this obligation. I further agree to observe strictly the terms of any licence issued to me by the responsible authorities to operate transmission or receiving apparatus.

Witness my hand this.....day of..... (signed).....

SUBSCRIPTION RATES.

Corporate Members and Associate Members (Town) ...	£1	1	0	per annum.
Corporate Members resident outside 25 mile radius				
Charing Cross	0	15	0	„ „
Corporate Members resident outside British Isles ...	0	12	6	„ „
Non-Corporate Members—Associates	0	10	0	„ „

Associates are not eligible to vote or receive individual notices of the Society.

Certificates of Membership and copy of the Articles of Association are issued to all members upon election.

NO ENTRANCE FEE.

A copy of the Articles of Association may be inspected at the Headquarters of the Society, 53, Victoria Street, London, S.W.1, by applicants upon request.

FOR OFFICE USE ONLY.

Approved by Council.....

B.(E.)R.S. Number issued.....First Subscription Paid.....

THE R.N.W.A.R.

As reported elsewhere in this issue, the R.N.W.A.R. plan was received with marked enthusiasm by all classes of members present either at Olympia or at Convention.

Within a few hours of the publication of the August issue of the T. & R. BULLETIN, which, it will be remembered, contained preliminary information regarding the Reserve, telegrams and letters began to arrive at Headquarters. Amongst the early enquiries were: E. J. Simmonds, G2OD; Mr. Jack Wyllie, G5YG; Mr. J. Owner, G6XQ; Mr. T. P. Allen, G16YW; Mr. F. Singleton, G5UW; Capt. Houston Fergus, G2ZC; Capt. G. C. Price, G2OP; and Mr. O. Kellett, G5KL—all well-known and old-time amateurs. That the Reserve will have the benefit of the experience of such men is certain and in spite of criticism from one small section, we have no doubt that the Reserve, once launched, will stay for ever, as a worth while and integral part of our national life.

Following hot on the publication of the Reserve scheme in our own Journal, the first, incidentally, in the world, came the official Admiralty announcement which read as follows:—

ROYAL NAVAL WIRELESS AUXILIARY RESERVE.

1. The Secretary of the Admiralty announces the institution of a Royal Naval Wireless Auxiliary Reserve (R.N.W.A.R.) in Great Britain and Northern Ireland, to be recruited largely from wireless amateurs owning transmitting sets.

2. The object of the Reserve is to provide a reserve of operators trained in Naval procedure, for Naval Service afloat or ashore in war or emergency.

3. The country will be divided into areas, districts, sections and units.

Units will consist of small groups up to a maximum of 5 transmitting stations.

4. Organised training will be arranged commencing with unit training.

Inter-unit and section training will follow, with the aim of providing a network of R.N.W.A.R. stations linking up districts, and finally areas themselves. These W/T Stations would be exercised at handling W/T traffic according to Naval practice.

5. Exercise transmissions will be given either by Naval W/T Stations or from selected R.N.W.A.R. stations.

6. The Reserve will be under the orders of the Admiralty through the Admiral Commanding Reserves.

7. The internal administration of the Reserve will be conducted through the machinery of a Committee, termed the Royal Naval Wireless Auxiliary Reserve Committee.

The President of this Committee will be the Admiral Commanding Reserves or his representative.

8. The members of the Committee will normally consist of officers or honorary officers of the R.N.W.A.R., who will be appointed annually by the Admiralty.

9. In drawing up the scheme and in framing the Regulations for the Reserve, the Admiralty have had the benefit of the advice of the following

gentlemen:—Mr. H. Bevan Swift, Mr. J. Clarri-coats, Major W. H. Oates, Mr. H. S. Pocock, Mr. A. E. Watts.

These gentlemen have consented to continue their good offices by serving on the first R.N.W.A.R. Committee with Admiralty representatives until February, 1933, when it is expected that a regularly constituted Committee can be appointed.

10. Those interested are requested to apply for further particulars by post to:—The Admiral Commanding Reserves, Queen Anne's Chambers, Tothill Street, London, S.W.1.

The national Press gave due publicity to the notice—*The Times* in particular—with the result that a large number of interested members of the public responded to the invitation to apply for a copy of the Interim Regulations.

For the benefit of those who have not read these regulations we are publishing in *extenso*.

Considerable progress has already been made by the R.N.W.A.R. Committee, who at their meeting, held on August 22 last, appointed Commander Saunders, R.N. (Secretary to the Committee) and Mr. John Clarri-coats (Honorary Secretary of the R.S.G.B.), to act as a sub-committee for the purpose of dealing with all detail work, including the recommendation of suitable men to take over the initial organisation of units.

At this meeting a decision was reached (based on an R.S.G.B. proposal) to commence operations from the Admiralty transmitter working on a frequency of 3740 kcs.

It is intended that all units in the London District shall work on this frequency, whilst other Districts will operate on fixed frequencies between 3730 and 3750 kcs. The necessity for having all district stations on the same frequency will be apparent to those who have an appreciation of Naval procedure.

The question of call signs was also discussed, and in this connection it is intended to issue to each transmitting member a separate call, consisting of a letter followed by two figures and a further letter. Arrangements will, it is anticipated, be made for several members of a unit living in the same locality to operate a common transmitter, but each such member will be required to use his own personal call when transmitting. This privilege will, of course, only be granted to members of the Reserve who have qualified to use radiating apparatus.

It is hoped to give details of the preliminary transmissions from the Admiralty transmitter in our next issue. Plans are being made for the transmission of two exercises weekly, one from an Admiralty long-wave station (which will be intercepted by temporary U.P.O.'s) and the other on 3740 kcs. These transmissions will be retransmitted by picked stations at predetermined times to Unit Stations, who will be expected to keep their "series" up to date.

It is the wish of Council that all members should understand that they are given an entirely free hand in the matter of enrolment. The Reserve is in being for those who feel a desire to serve their

country, the Society is in being to safeguard the interests of Radio Amateurs, but both bodies are awake to the advantages of co-operation.

The Royal Naval Wireless Auxiliary Reserve.

(R.N.W.A.R.)

Interim Regulations.

The object of the Royal Naval Wireless Auxiliary Reserve is to provide a reserve of trained operators for Naval Service in war or emergency from Amateur Wireless operators. To this end its organisation aims at affording opportunities for practice and training and at encouraging those interested in the transmission of messages in the Morse Code.

ORGANISATION.—The Reserve is under the orders of the Admiralty through the Admiral Commanding Reserves. It is, however, designed to conduct its own affairs through the machinery of the Royal Naval Wireless Auxiliary Reserve Committee.

The Reserve will be organised into Areas, Districts, Sections and Units.

TRAINING.—Training will be commenced within units. Inter-unit and Section training will follow, the ultimate aim being the provision of a network of Royal Naval Wireless Auxiliary Reserve W/T Stations, linking up districts within the area, and finally areas themselves, employing Naval procedure, special call-signs and signal codes.

ENROLMENT.—The grades of rank in the Royal Naval Wireless Auxiliary Reserve will consist of the following:—

Officers: Area Commander, R.N.W.A.R.; District Commander, R.N.W.A.R.; Section Lieutenant, R.N.W.A.R. *Ratings:* Unit Petty Officer, R.N.W.A.R.; Operator 1st Class, R.N.W.A.R.; Operator 2nd Class, R.N.W.A.R.; Watcher 1st Class, R.N.W.A.R.; Watcher 2nd Class, R.N.W.A.R.

The appointment of Officers will be made on the recommendation of the Royal Naval Wireless Auxiliary Reserve Committee.

Candidates will be enrolled as Watcher 1st or 2nd Class, or Operator 2nd Class, according to their qualifications on enrolment. The qualifications required are, briefly:—

As Watcher 2nd Class: No wireless qualifications.

As Watcher 1st Class: Must be able to receive in Morse at 10 w.p.m. and must possess receiving apparatus capable of use on all amateur and Naval H/F bands.

As Operator 2nd Class: Must be able to receive and transmit in Morse at 12 w.p.m., and must be in possession of a licensed amateur transmitting station or of a receiving station capable of use on all amateur and Naval H/F bands and pass practically in P.M.G. procedure.

ELIGIBILITY.—Candidates for enrolment must be British subjects of, or over, 18 years of age, the sons of British-born parents and of pure European descent. They must be free from serious physical defects and must produce a reference signed by two British citizens that they are of very good character and temperate habits.

The following are not eligible for enrolment in the Royal Naval Wireless Auxiliary Reserve:—

- (a) Men who are serving, or bound on mobilisation to serve, in any branch of H.M. Forces.
- (b) Members of any Police Force.

- (c) Men on the established list of one of H.M. Naval Establishments or serving in Dockyard tugs and craft.

- (d) Persons dismissed or discharged for misconduct from any branch of H.M. Service.

The following should not be enrolled without the consent of their Head of Department or employer:—

- (a) Men who are on the established list of any Government Department or Establishment.
- (b) Men employed as artificers or artisans of any firm engaged on Government work who are certified by their employer as being required to carry out work of national importance in wartime.
- (c) Indentured apprentices.

Persons in receipt of a pension from the State, temporary or permanent, on account of disability or injury may only be enrolled in special circumstances.

CONDITIONS OF SERVICE.—Members will be required to accept the conditions of service laid down in the Royal Naval Wireless Auxiliary Reserve Regulations.

These regulations cannot be issued in detail until further experience has been gained. The following, however, are the principles on which the Regulations will be based:—

- (a) Members will renew their membership annually.
- (b) They will be required to attend immediately to all notices and to obey all orders regarding the Royal Naval Wireless Auxiliary Reserve, received from Officers or Petty Officers of the Reserve.
- (c) In time of War, Officers and men must hold themselves in readiness for Service, and on mobilisation must be prepared to sign a "Continuous Service" engagement to serve in the Telegraphist Branch of the Royal Navy, for the period of hostilities, in such rank or rating for which they may be found suitable.
- (d) A member may leave the Reserve in peace time by giving three months' notice in writing to the District Commander. Notice of resignation cannot be given during hostilities.
- (e) When not mobilised members will not receive any pay, retainer, nor allowances, nor will they be furnished with, nor required to wear Naval uniform. A badge will be provided for all members except Watcher 2nd Class, to be worn on the left arm when on duty on ceremonial or other occasions during peace time.
- (f) When mobilised they will receive the Active Service pay of the rank or rating in which they are entered, and will be eligible for the same allowances and privileges. A gratuity of £5 will be credited to each member who is called up and finally entered, provided that he was in the Reserve on the date of the Royal Proclamation calling out the Reserves. When serving in the Royal Navy Reservists will be required to wear and maintain the full active service kit of their rating to cover the cost of which a gratuity will be allowed.

BOOK REVIEWS.

TESTING RADIO SETS. By J. H. Reyner. (Chapman and Hall, 11, Henrietta Street, Covent Garden, W.C.2.) 10s. 6d. nett. Second and revised edition.

The writer of this book has shown that he is thoroughly conversant with his subject and has put before his readers a volume containing much practical and useful information. He systematically describes the tracing of faults in every form of radio set from the aerial to the loud speaker and includes the side lines of power supply and laboratory testing. Every possible trouble is thoroughly discussed, its cause shown, and the remedy described in such a manner that the veriest tyro could hardly go wrong. We could only find one page of the book where any disagreement existed between ourselves and the author. This was on page 96, where, dealing with the elimination of hum from sets operated from D.C. supply mains, the writer prescribes the direct connection of the earth on the set definitely to earth, omitting the usual safety condenser. Although the author warns the reader that a test should be carefully made by means of a lamp connected between earth and the set to see that no potential difference exists, we hardly think that his suggestion is a wise one. To begin with, we do not think the supply authorities would endorse the idea for they carefully test the installation to see that no earth exists upon any part of the wiring. Their own connection of the neutral conductor to earth is made at the station through special instruments, and any other earth connection would interfere with their arrangements. Furthermore, an occasion might arise such as badly earthed outer main, where they would have to remove the earth connection of the neutral main temporarily. Such action would cause a heavy current to flow through the earth connection of the set, either burning it out or blowing the fuses. As a temporary expedient for the removal of hum, it might be tried by an expert, but we hardly consider it a safe prescription to put in the hands of the average radio amateur. We certainly feel that anyone trying such a method would come into conflict with the supply engineer. Apart from this one point, the book is excellent and we can heartily recommend it to all interested in the tracing of faults.

ADMIRALTY HANDBOOK OF WIRELESS TELEGRAPHY, 1931. Published by H.M. Stationery Office, Adastral House, Kingsway, London, W.C. Price 7s. 6d., postage extra.

At no more opportune moment could we have received for review the 1931 edition of the Admiralty Handbook of Wireless Telegraphy.

Those who have had the good fortune to possess the 1925 edition will be unable to recognise this latest effort on the part of the Admiralty to bring the technical side of their wireless organisation up to date.

Its 1,012 pages are packed with up-to-date practical matter, including whole chapters devoted to short-wave matters. To attempt even a brief review would be impossible, but the scope covered can be seen from a perusal of the chapter headings.

Commencing with an excellent outline of Electricity and Magnetism, we find the next 70 pages devoted to Electro-magnetism, Inductance and Capacity. Generators and Motors are dealt with

at great length, whilst in Chapter 5, Alternating Currents are discussed. This chapter alone is worth the price charged for the complete book, covering, as it does, Vector Diagrams, Series A.C. Circuits (Resistive-Inductive-Capacitive), Impedance, Resonance, Acceptor and Rejector Circuits, Power in A.C. Circuits, etc., etc.

Chapter 6 deals with Transformer design and measuring devices.

Subsequent chapters cover in the same thorough manner, Oscillatory Circuits, the Spark and Poulsen Arc Systems; Thermionic Valves, the Valve as a Detector—as an Amplifier and as a generator of oscillations; Radio Telephony, H.F. Reception and Transmission, the Behaviour of Electromagnetic waves (Atmospheric effects, Skip Distance-Fading, Heaviside Layer), Aerials and Earths, Directional Reception and Transmission Wave-meters.

The appendices contain nearly 100 pages of mathematical and mechanical tables.

Indeed, a feast of sound useful information which should find a place in every radio den.

Published at the absurdly low price of 7s. 6d., we have no hesitation in stating that it is one of the finest radio compendiums published in this country.

Copies may be obtained direct from H.M.S.O. or through booksellers. J. C.

The Approved Traders' Scheme.

Few of our readers seem to be aware that the Society together with the Wireless League run a scheme for the approval of wireless dealers. This is managed by a joint committee consisting of members from both bodies and has now been in existence for a number of years. The main object, of course, is to endeavour to protect the public against the unscrupulous dealer who springs up in the trade without the necessary technical qualifications or the facilities to effect repairs to sets in an efficient or business manner. Every applicant for approval has his premises and circumstances inspected and if approved a sign is issued to him to hang outside his premises. Quite a large number of dealers all over the country have now been approved and the sign is well known. Our members will assist if they will endeavour where possible to patronise these dealers and see that their friends do likewise. It will all help in the raising of the standard of the average repairer and the elimination of the quack.

LET US BUILD YOUR APPARATUS.

WE SPECIALISE IN BUILDING
EQUIPMENT TO CUSTOMERS' OWN
DESIGNS. WRITE FOR DETAILS
OF OUR SHORT WAVE SETS, ETC.

Quotations by return post.

UNDER THE MANAGEMENT OF A
MEM. R.S.G.B., F. TEL. SOC.

RADIOVOX CO.,
34, BASINGHALL ST., LEEDS.

BEHIND THE SCENES.

No. 2.

Headquarters.

By JC/MG.

53, Victoria Street, S.W.1.

GEOGRAPHICALLY, Victoria Street is in the centre of London's activity. At its eastern end are situated Westminster Abbey, the Houses of Parliament and Big Ben, whilst at the western end we find ourselves in that throbbing vortex of cosmopolitan London—Victoria, with its station, reminiscent of war days, and the Victoria Palace, that most celebrated of music halls.

St. Margarets Mansions, wherein is housed H.Q.'s, are part of a block of seven-storied buildings used exclusively for office accommodation, and are about half-way along Victoria Street itself. The actual H.Q. offices are on the second floor and comprise two fairly large rooms, one housing the general office and the other the Council Room.

The Army & Navy Stores and Strutton Ground (of Thompson fame!) are near at hand, whilst within a stone's throw are the palatial offices of the London Underground Company over St. James' Park Station in the Broadway, Westminster.

Behind Victoria Street and less than a quarter of a mile distant, runs Father Thames, whilst even nearer is the awe-inspiring Roman Catholic Campanile, from which a view of Central London, second to none, may be obtained.

Caxton Hall, St. James' Park, Birdcage Walk, Whitehall, the Cenotaph, the Horse Guards Parade and Trafalgar Square are all familiar landmarks, within five minutes of "53," so that those of our provincial members who spend a day in town this year should include "H.Q." amongst the sights to be visited!

But we must stress two points, firstly, the office closes at 6 p.m., and secondly, the members of the Honorary H.Q. staff are normally not in attendance during the day!

The Executive.

The control of the Society is vested in a President, an Acting Vice-President, an Honorary Treasurer, an Honorary Secretary and eight members of Council. These members are elected annually in accordance with the Articles of Association, drawn up at the time the Society became incorporated under Royal Charter (1925).

Until recent years the Council members had very few official duties to perform; maybe the Society was too highbrow in earlier days! From 1928 up to the end of 1930 the real "donkey work" had been undertaken by a few junior members of the old General Committee (really an offspring of the T. & R. Committee set up when the Society invited the transmitting amateurs of the British Isles to merge their interests with the National Society).

This Committee drew up its own bye-laws, one of which laid down that every Committee-man should be responsible for some specific branch of Society work. During 1930, however, it was realised that, owing to Council changes, the majority of the General Committee members were also on Council; consequently, the former were placed in the rather absurd position of recommending a proposal to Council on the second Tuesday of each month, and approving it themselves as Council on the third Wednesday!!!

January, 1931, therefore, saw the end of the General Committee, but by a series of regulations which had been approved at Convention during



At some distant date when the Society was little more than a London Radio Club, "Headquarters" meant little or nothing to its members. Probably most of them knew the location of the actual offices, but in those days before Bulletins and QSL cards, and before B.E.R.U. and B.R.S. were names to conjure with in the amateur radio world, there was little at H.Q. to interest the individual member.

Times have changed and to-day London Headquarters is the centre of an activity which is growing in intensity each month.

Hundreds—we nearly said thousands—of our present members have never seen H.Q. and even those who have made a fleeting visit, probably have no idea of the manner in which the work is organised.

It is, therefore, with no apology that this descriptive article is presented.

1930, the new Council were to take office for *specific duties*. We thus had the outstanding virtue of the General Committee passed on to Council, each man in office doing a definite job of work for the Society.

Now let us see how things work out in practice.

The Secretariat.

The Council meet on the third Wednesday in each month at 6.15 p.m., under the chairmanship of the President. A business agenda is circulated one week before the meeting to all Council members and D.R.'s. This enables the latter to put forward their views on any specific point, *via* the Provincial D.R. Standard agenda items cover the minutes of the previous meeting, correspondence, finance and membership, whilst editorial, awards, B.E.R.U. and home districts matters are invariably discussed, as well as special items bearing upon licence matters (including recommendations for high-power permits).

Council meetings seldom conclude before 9 p.m., and even then many items fail to receive the full attention they deserve.

The day following Council is a particularly busy one for our lady assistant, Miss Gadsden, for it is her duty to advise all new members of their election and where subscriptions have already been paid to

follows: At 10 a.m. the office opens and all mail is sorted into sections:—

- (a) Important secretarial letters.
- (b) Subscriptions and sales moneys.
- (c) Membership applications.
- (d) QSL cards and queries.

Subscriptions, etc., are dealt with immediately; all receipts issued and entries made on cards, whilst applications for membership are acknowledged and queries referred to the proposers.

QSL section duties are undertaken by our junior assistant, Miss Spence, who spends practically the whole of her time sorting and despatching the cards.

The more important secretarial work is dealt with in the most efficient manner possible under the circumstances. Promptly at 12.30 p.m. (lunch time) each day Miss Gadsden telephones the Secretary at his home address and reads a *précis* of this correspondence. Urgent replies are dictated immediately, whilst the remainder is posted from H.Q. at 3 p.m. with the previous day's mail for signing, and arrives at Friern Barnet at 9 p.m., in time to be dealt with by the time the 10.15 p.m. post is cleared!

This routine has now worked every day (illness and holidays excepted) without a hitch for *two years and nine months*!

One regular evening attendance at H.Q. is made by the Secretary each week. This enables lengthy dictation of important correspondence, but this one short period would, however, not prove sufficient to efficiently clear all mail; consequently arrangements have been made whereby Miss Gadsden spends most Sunday afternoons and usually one other evening a week at G6CL.

The Treasury.

Let us now turn to the other less obvious duties. The financial side, under Mr. Dawson Ostermeyer, is probably the least conspicuous, and yet *the* most important of all Society official duties. When G5AR undertook to take over, "as a temporary measure," the duty of Hon. Treasurer in the early spring of 1929, he found the financial resources of the Society in a very unsound state. By dint of personal examination of every account and by voluntarily undertaking the routine secretarial duties for six months, thus replacing a male clerk, he was enabled to start the year 1930 with a small, but sound, credit balance. For the past two years his efforts have been tireless, strict economies consistent with good management having been effected, with the result that to-day the Society is more prosperous than at *any time in its history*. Mr. Ostermeyer makes at least two, often more, visits to H.Q. each week, and personally enters all receipts into the audit ledgers. Mention should also be made of the work done by Mrs. Ostermeyer, who has taken on the self-imposed task of checking each week all book entries, a no mean task when one considers the tremendous number of small amounts received.

Publicity.

And now, what of the work accomplished by Mr. Arthur Watts, the originator of B.E.R.U., as we know it to-day, our Acting Vice-President, since 1931 and one of the best-known and best-liked men in all British amateur radio. No one knows exactly how much G6UN has done; we can surmise—that is all. We do know, however, that since early in 1929 he has been sending



Headquarters Staff:
Miss L. M. Spence. Miss A. M. Gadsden.

forward membership certificates, receipts, copies of the articles and official notifications. Ledger book and card file entries have also to be made, the latter in duplicate, as the Honorary Secretary maintains a complete membership card file at his own address.

The few days (rather, evenings) following Council are also busy ones for the secretariat, probably as many as 50 individual letters have to be dictated as a result of that one meeting. This work is done after normal working hours, partly at H.Q., but mostly at G6CL. The typed replies, in duplicate, with stamped addressed envelopes are then posted from H.Q. to the Hon. Secretary's home, and after signing are despatched from Friern Barnet.

This description so far has only referred to the monthly Council meeting; but what of all the other days?

The normal routine works out approximately as

regularly each month between 25 and 50 copies of the BULLETIN to different groups of Empire amateurs, with a personal note in each inviting them to join the B.E.R.U. We know, too, that he organised, in a manner we should do well to fully appreciate, the Empire Link Stations. The preparation and throwing into operation of the British network entailed the sending of some 400 personal letters during three months of last year.

The results of his publicity work are reflected in the huge increase of overseas membership. Fortunately, in one way, the majority of his official mail is addressed to his home at Highgate, otherwise the H.Q. staff would be up another one this year!

Two further duties can be classed definitely under the heading, "Headquarters," first Editorial, second QSL.

Editorial.

All Editorial matters are passed direct from H.Q. to the Editor, and are not handled by the secretariat. The duties of the H.Q. staff in connection with the BULLETIN are to prepare the wrappers, cut and trim the galley proof, and check the proofs (when time permits!).

The actual work in connection with the production of the BULLETIN has already been dealt with in a recent article; therefore, no advantage will be gained by repetition.

The QSL Bureau.

The duties of QSL manager have for several years been undertaken by Mr. J. D. Chisholm. Owing to many difficulties it became necessary, during 1929, to deal with this work at H.Q., and for over a year Miss Gadsden carried the gigantic task of sorting all and despatching British cards weekly on her own shoulders, but in January, 1931, the Council decided that extra help must be provided, with the result that Miss Spence was engaged specially to assist with this work.

All queries in connection with the Bureau are handled personally by Mr. Chisholm, who pays one regular visit to H.Q. each week. On this occasion all foreign cards, which have previously been sorted into pigeon holes, are collected and the actual despatch made by Mr. Chisholm from his home address.

All incoming cards are sorted daily and a regular clearance of unclaimed cards made each month by Mr. Chisholm and the QSL Section Committee.

Despatches to British members are effected weekly in order to prevent long delays occurring. It is safe to assume that the Society's Bureau handles more cards per year than any other Bureau in the world (excepting, perhaps, Germany), acting as it does as a clearing house for most of the British Empire, as well as a number of European societies. No actual figures are available, but as a result of several "spot" checks made recently, it is believed that upwards of 120,000 cards are handled each year.

In concluding this short account of the Society's Headquarters, a word should be said of the many duties undertaken by our President, Mr. Bevan Swift, and our Past-President, Mr. Marcuse. The former, as we all know, has fallen into the breach once again as Temporary Editor, and has sponsored this and the August issue of the BULLETIN through to finality; but it is of his other work we would mention. As President the final responsibility

for every official action taken must be his, and spite of business stress, he has shouldered without hesitation the hundred and one important duties accruing to his office.

Mr. Marcuse, too, with his long-standing experience with the G.P.O. officials, has for years been our mediator on all matters of official policy. It is his duty to deal with all applications for additional licence facilities after approval by Council, whilst he has, with Mr. Arthur Watts, been instrumental in creating the desired atmosphere with the "powers that be" who will be present at Madrid.

Those of our members who from time to time have criticised the work of the Honorary H.Q. staff will, perhaps, in future be more forbearing for we have, as they, a daily job to do and a home life to follow.

The Society is flourishing, our numbers are increasing, and we trust that YOU will do all you can to assist those of us who are giving all our available time to furthering amateur radio.

SPECIAL NOTICE.

We regret the non-appearance of Contact Bureau Notes this month. We understand from Mr. Page that owing to a sudden and unexpected pressure of business he was unable to attend to the work of compilation.

R.S.G.B. NOTEPAPER.

MEMBERS CORRESPONDENCE



HEADQUARTERS CORRESPONDENCE IS ISSUED ON BLUE HEADING.

*Full quarto size at 2/6 per packet
of 100 sheets.*

Call Sign Brooches	- 2/6
Enamelled Coat Badges of Emblem R.S.G.B.	- 1/6
B.E.R.U.	- 1/-
Rubber Stamps of Em- blem	- - - - 1/6
K.C.—Metre Charts	- -/8
Car Plaques of Emblem	3/6

Orders can be taken for the June
Call Book - - - - - 5/6

*All the above are Post Free, but orders
must be accompanied by a remittance.*

The R.S.G.B. Sales Department
53, Victoria Street, London, S.W.1

"G5MW in Action."

In the early hours of Sunday, June, 1932, a motley collection of motor vehicles left Chatham and made for Woolwich. This collection was the Medway Amateur Transmitters' Society complete with their portable transmitter and receiver, G5MW, going to pay a visit to rival preserves in Essex, for the purpose of gathering dope (and spare gear). Having safely crossed the Woolwich *Free Ferry* without trying out the ship's aerial, we proceeded to a rural spot "somewhere in Essex," and rigged the TX, etc., for a test, but were later politely told to "clear off," which we did (not caring to argue the point), and chose another spot a few miles farther on. With the aid of a telegraph pole and another which 2ALD "borrowed" while the owner wasn't looking quite a good aerial was erected, and our first call on 1.75 mc. brought an R8 fone report from G6QG of Chatham. While this QSO was proceeding a stentorian voice thundered through the loud-speaker: "Hallo, Medway, what's the game?" This voice was found to belong to G2LZ, and not caring to acquaint him

fordshire, we proceeded to visit the dens of G2YI, G2LZ, G2KT, G2WG, and met G5VS. G6NU having collected nine crystals (which all proved to be dud), we proceeded to Laindon Hills, where tea was kindly provided by 2AVY. (Many thanks, OM.) After more QSO's we then turned towards London again *en route* for home. During the run back a very F.B. view of the "Graf Zeppelin" was obtained, but a QSO was impossible owing to the Zepp's receiver being paralysed by the field strength of G5MW!! We arrived home at midnight very tired but happy in the knowledge that we had shown rural Essex how a portable TX should work.

G5MW was a C.O.-P.A. with choke modulator and speech amplifier. Input, 7 watts.

Members taking part included G6VV, G6NU, G6QC, G5XB, G5JT, 2BIN, 2ALD, 2BPQ, 2BFO, BRS745, BRS465.

Who Was It!

The following has been received from the Superintendent of the Radio Research Board:—

"During the evenings of September 1 and 2, observers at the Radio Research Station, Slough, picked up a station which was operating on a radio frequency of about 3.56 mc. and sending out short-duration pulses at the rate of 50 pulses per second. The signals were well received and photographically recorded at Slough, giving 'echo' effects, which makes it of value and interest for the observers to know the location of the transmitter. Unfortunately no identifying call-sign was observed during the course of the transmissions, and the Superintendent of the Radio Research Station, Slough, would be glad to have any information concerning the transmitter to assist in the theoretical analysis of the observations."

Listen for W-3CPX.

This station is operated by two young Englishmen who have recently obtained their licences. They are regularly on the 14 mc. band, combing the ether for G stations. Both hail from Sunderland, Co. Durham, and their present QRA is 715, Ninth Avenue, Prospect Park, Pa., U.S.A.

The station is located a few k.c.s inside the high frequency edge of the band, and an input of 50 watts is being used. They are very anxious to make G contacts, and will gladly co-operate in schedules.

Calibration Section.

Owing to alterations at station G6NF in connection with frequency measurement apparatus, no calibrations can be given until further notice. It is expected that these alterations, which are in connection with obtaining greater stability in the calibration oscillator, may take about two months to complete.

Covention Photographs.

Members desiring copies of the photos taken at Covention can obtain copies, price 3s. each, upon application to Messrs. G. & S., Lyndhurst, Hempstead Road, King's Langley, Herts.



Members of M.A.T.S. on their Field Day.

with our position, although he "D.F.'d" us with accuracy, we mentioned that he would hear us a little stronger later on. The station was then shifted to within some yards of that wonderful aerial mast in Wickford. Here a test call was answered by eight local stations, and LZ's speaker jumped clean up to the top of his mast, and is still there awaiting offers!

In due course, G2LZ arrived, full of astonishment at our numbers, and photographed us right away, without consent. Then G2YI appeared on a "Bone-Shaker" of pre-war origin, and offered to exchange same for our QSL card! (No offers.) It should be recorded here that our Hon. Secretary (G6QC), whilst making his way to one of the cars with all the valves nicely boxed with cotton wool, etc., suddenly disappeared from view. He had found a ditch, six feet deep, with a muddy bottom, and all that could be seen were two hands grasping a box of valves (which, fortunately, survived this shock). G6NU, being interested in underground aerials, proceeded to investigate possibilities with compass. After working several stations, including G5OA, of Greenwich, and G6UT portable in Hert-

HIC ET UBIQUE.

Convention, 1932—(continued from page 73).

He announced that plans were in hand to set up the first R.N.W.A.R. transmitter at the Admiralty. A frequency of 3,740 k.cs. had been allotted, and it was expected the first tests would take place during November.

A Handbook of Regulations was in the course of preparation, and would be published as soon as possible, but in order to gauge the response, a set of Interim Regulations had already been issued, and would be distributed to those desirous of learning more of the Reserve plan.

He mentioned that the response after one week of publicity had exceeded all expectations. The R.S.G.B. alone had received nearly 100 letters from their members expressing a definite desire to assist.

Capt. Murray stated that during the first few months all members would be treated as Operators 2nd Class, but that arrangements would be made to promote the most suitable men as soon as possible. He emphasised the fact that although the large majority of the R.S.G.B. members were already excellent operators, considerable training would be necessary before they could be regarded as trained R.N. telegraphists.

He next explained that the Reserve would be self-governed by a Committee composed of members drawn from interested bodies. He mentioned that the first Committee had recently been appointed, and that Messrs. Swift, Watts and Clarricoats had been asked to serve.

The terms of enrolment were read, and in his final remarks, Capt. Murray expressed the hope that the liaison which had been formed between the Senior Service and the Society would prove advantageous to both parties.

Capt. Murray, whose talk had lasted an hour, was greeted with acclamation.

The President moved a vote of thanks to both Capt. Murray and the Admiralty, which was responded to with cordiality.

Empire Link Appointments.

Mr. A. Watts gave an outline of the decisions reached at the E.L.S. meeting held on the previous meeting. These were briefly as follows:—

1. The network should be reduced to 12 stations. To make for greater efficiency.
2. The stations shown in Table 2 were appointed for the year.
3. All stations will be required to furnish a monthly report. Failure to report for three months will terminate an appointment.
4. New E.L.S. appointments will be made annually. The appointment will take the form of a certificate. E.L.S. badges remain the property of the Society and must be returned on relinquishing an appointment.
5. To facilitate handling of messages the 12 stations shall be divided into two groups, one being responsible for E.L.S. traffic with America and Africa, and the other for E.L.S. traffic with Asia and Australasia.

The actual division is shown in the table of E.L.S. Mr. Watts formally moved and Mr. Auchterlonie seconded that the 12 members mentioned should form the British E.L.S. network for the year 1932-

1933. The proposal was unanimously carried. Mr. Davies (G2OA), asked whether a Northern station could be considered for an appointment, to which question Mr. Watts stated that to date no Northern station had proved to be more reliable or efficient than those appointed. An appointment would be considered on the recommendation of a D.R.

Future Tests.

Mr. Clarricoats outlined the arrangements made for contests.

Other Business.

Mr. Milne (G2MI), in a well-delivered speech criticised the Society for supporting the R.N.W.A.R. pleading that Amateur Radio should stand for world peace. He considered the Council had "sold" the Society to the militant forces. The President asked Mr. Milne to propose a vote of censure on Council but this was declined. Mr. Swift then outlined briefly Council's views in the matter and emphasised that individual members have an entirely free hand in the matter of enrolment. He considered that any movement aimed at the recognition of the usefulness of the radio amateur could do nothing else but good, and he deplored the fact that Mr. Milne should have found it desirable to criticise those members of the Society who had been elected by Mr. Milne and others to serve as Council. He assured the meeting that all personal feelings had been dropped by the Council members, an opportunity for advancement had arisen and had been taken with eyes open.

The President in closing the meeting thanked members for the keen attention to the business matters, and expressed the hope that all would gather around the festive board later in the evening.

The Convention Dinner.

Pinoli's Restaurant in Wardour Street was taxed to its limits when the Convention dinner commenced. Records were again broken—when over 170 sat down (or attempted to do so!) for the first and subsequent courses.

(We take this opportunity of apologising for the inconvenience caused to certain members who were forced to dine apart from the main gathering, but would point out that the difficulties of catering at the Convention Dinner are more than difficult.)

In spite of repeated requests for reservations only 70 places had been booked up to the Thursday evening prior to the meeting, which means that 100 members decided at the last minute to attend!

An excellent programme was provided by Mr. Will Hammer, supported by Mr. Dudley Shepherd, Miss Vera Vaughan and Miss Hazel Smythe.

The toast "The Society at Home," was proposed by Mr. Jolliffe (VS7GT), of Ceylon, whilst the response was given by the Hon. Secretary, Mr. J. Clarricoats.

The toast, "The Society Overseas," was proposed by the Acting Vice-President, Mr. Arthur Watts, and was responded to by Capt. Wilmot (Nigeria), Mr. Miller (Hong Kong), Mr. Billings (U.S.A.), and Mr. Adama (Holland.)

The toast, "The R.N.W.A.R.," was proposed by Capt. G. C. Price (Senior D.R.), and was replied to on behalf of the Admiralty by Commander Saunders, R.N.

The toast to the visitors was proposed by Mr. A. Forsyth (G6FO).

The toast of "The President" was proposed by Mr. Marcuse (Past-President), and in his reply Mr. Bevan Swift thanked all members for their show or cordiality, and expressed the hope that the spirit of amateur radio would live long.

The dinner concluded with the singing of "Auld

Lang Syne," and in this wise the Seventh Annual Convention of the Radio Society of Great Britain ended as it had begun, in a spirit of enthusiasm and with marks of progress evident in all directions.

In concluding this somewhat hurried report, the writer wishes to thank all those who in any way contributed to its success, and at the same time offers his apologies for any errors or omissions which may have occurred in the write-up.

R.S.G.B. TRANSMITTING TESTS, 1932-1933.

To enable members to make preparations well ahead, Council have drawn up the rules governing all future R.S.G.B. tests, together with a list of dates upon which the tests will take place.

General Rules.

The general rules for all contests (exception the B.E.R.U. Trophy Contest) are as follows:

1. Entrants must be fully paid up members of the Society and be resident within the British Isles.
2. The British Isles for the purpose of all contests includes England, Scotland, Wales, Northern Ireland, Irish Free State, and the Channel Isles.
3. Licenced power and frequencies must be used.
4. An exchange of reports (viz., QRI, QRK, and QSA) will be required to complete a contact before points can be claimed.
5. Proof of contact may be required.
6. Contests will, except when specifically mentioned under the rules of an individual contest, extend from 12.00 G.M.T. Saturdays to 24.00 G.M.T. Sundays.
7. Logs of contacts for which points are claimed must reach the Tests Manager within two weeks after the end of a contest.
8. Leading stations will be granted certificates of merit, whilst trophies may be awarded at the discretion of Council.
9. Council's decision will be final in all cases of dispute.
10. Council reserve the right to amend or alter these rules.

Rules for 1.7 MCS. Contest.

November 5 and 6. November 12 and 13.

The general rules as set out above apply to this contest with the following additions:

1. Contacts with stations in any part of the world will count for scoring points, except when the contacting stations are resident in the same district.
2. Scoring will be counted as follows: *Points.*

Between any English district	...	...	1
Between any Welsh district	...	...	1
Between any Scottish district	...	...	1
Between any Scottish and any English District	...	...	2
Between any English and any Welsh district	...	...	2
Between any Scottish and any Welsh district	...	...	2
Between Northern Ireland and the Irish Free State	...	...	2

Between England, Scotland, or Wales and and Irish station	3
Between the British Isles and Europe ...	3
Between the British Isles and any station outside Europe	10

Note.—The four London Districts count as one in this and the 3.5 mcs. contest.

Rules for 3.5 MC. Contest.

April 1 and 2, 1933. April 8 and 9, 1933.

The rules for this contest will be exactly the same in all respects to those set out above, and which refer to the 1.7 mcs. contest.

Rules for 28 MCS. Contest.

December 3 & 4, 1932. December 10 & 11, 1932.

The general rules as set out above apply to this contest with the following additions:

1. Contacts with stations outside the British Isles will count for scoring points.
2. Scoring will be counted as follows: *Points.*

With Europe	...	...	...	1
With North Africa	...	...	...	2
With South Africa	...	...	...	5
With North America	...	...	...	5
With South America	...	...	...	7
With Australasia	...	...	...	10

Rules for Low Power Contest.

The general rules as set out above apply except that the contest will extend from 12.00 G.M.T. Saturday, January 14, to 24.00 G.M.T. Sunday, January 22.

Additional rules are as follows:

1. Contacts with stations in any part of the world may count towards scoring points.
2. Any licenced amateur frequency may be used.
3. The high tension supply to the valve delivering power to the aerial must not exceed 100 (one hundred) volts.
Push-pull is permissible.

4. One point will be scored for each hundred miles or part thereof of established contact. All distances to be on a Great Circle basis. No points can be claimed for contacts under one hundred miles.

National Field Day, 1933.

From 18.00 G.M.T. Saturday, June 10, to 18.00 G.M.T. Sunday, June 11.

1. Each District taking part will be entitled to place into service one complete station capable of operation on any, or all, licenced amateur frequency bands.

2. The stations should be set up as near the centre of the district as is possible.

3. The power supply must not be derived from either private or public supply mains.

4. Two points will be scored for each established contact with another District Portable Station. Two points will be scored for each established contact with a fixed station outside the British Isles.

Three points will be scored for each established contact with a portable station outside the British Isles.

One point will be scored for each established contact with a fixed station outside the district, but within the British Isles.

5. The District securing the highest total number of points will hold the "Districts Field Day Award" for one year, which award will be handed to the District Representative who will be responsible for its custody.

56 M.C. Tests.

On Sunday, September 25, the London Districts will hold a special series of 56 mc. tests.

G6CL will be operating from a selected spot in North London. G6UT will be operating from the roof of a building at High Beech, Essex; while G6YK will be using his celebrated aerial, 300 ft. high, at Hammersmith. G2NH will be operating at a high spot in Surrey.

Signals will be modulated C.W. or telephony, and anyone interested is asked to listen and send reports to G6UT.

The following schedule will be kept and adhered to unless interrupted by a QSO between stations:

10.00 B.S.T. ... G6YK.
10.15 B.S.T. ... G6UT.
10.30 B.S.T. ... G6CL.
10.45 B.S.T. ... G2NH.

The same schedule will hold for each hour during the day.

G5BJ—(Continued from page 76.)

The Receiver.

This important piece of apparatus is as simple as it is efficient, being a screen grid valve used as a detector, with one stage of L.F. amplification, choke coupled, used in conjunction with the transmitting aerial.

The usual Eddystone short-wave coils are used, all components being liberally spaced; that the whole assembly is efficient is shown by the fact that DX is often copied from the loud-speaker. The station as a whole is undoubtedly one of the most successful in the country, and the well "papered" walls represent 79 countries worked.

That W.B.E. and W.A.C. certificates are held goes without saying; W.B.E. and W.A.C. being obtained in one day of 7½ working hours, the contacts worked including such DX as Hongkong and Honolulu. Regular skeds have been kept with VS2, VIYB, ZD2, VQ4, and many others.

The QSL card consists of a map of England showing the situation of the station at Birmingham, together with the slogan, "Birmingham the Hub of Industrial England"; it could equally truly be said "Birmingham the Hub of Excellent Amateur Signals."

Reception Tests.

Below will be found dates and periods for the next Reception Tests. Two Dutch stations, PAQDC and PAQXYZ, ask participants for assistance during these tests by reporting their signals when heard on 3.5, 7 and 14 mc. bands; only one of these stations will be on during one period, but as different aerial systems will be in use each half period, they request that their signals be logged in each half period. From the budget of logs they hope to be able to compile data which will be circulated to all participants.

All logs should be sent off to T. A. St. Johnston (G6UT), 28, Douglas Road, Chingford, E.4, by October 17.

PERIODS AND BANDS. Series No. 10.

Date.		Time		Test Band Letter	MC.
Sept. 25	Sunday	0900-1000	B.S.T.	B	1.7
Oct. 2	Sunday	2230-2330	G.M.T.	I	1.7
Oct. 9	Sunday	0900-1000	G.M.T.	L	1.7
Sept. 25	Sunday	0000-0100	B.S.T.	A	3.5
Oct. 5	Wed.	2000-2100	G.M.T.	J	3.5
Oct. 9	Sunday	1900-2000	G.M.T.	N	3.5
Sept. 25	Sunday	1000-1100	B.S.T.	C	7
Oct. 2	Sunday	0900-1000	G.M.T.	G	7
Oct. 9	Sunday	0000-0100	G.M.T.	K	7
Sept. 25	Sunday	1900-2000	B.S.T.	E	14
Oct. 2	Sunday	0700-0800	G.M.T.	F	14
Oct. 9	Sunday	2300-2400	G.M.T.	O	14
Sept. 25	Sunday	1200-1300	B.S.T.	D	28
Oct. 2	Sunday	1300-1400	G.M.T.	H	28
Oct. 9	Sunday	1500-1600	G.M.T.	M	28

County Representatives.

Council have pleasure in announcing the appointment of the following additional County and Sub District representatives:

Lancashire: MR. W. LUCAS (G2OI),
64, Worsley Road, Winton,

Patricroft,
Manchester.

Berkshire and Hampshire: MR. R. C. NEALE (G6GZ),
Farnborough Road,
Farnborough,
Hants.

Buckinghamshire: MR. K. E. B. JAY (G2HJ),
19, Elm Close,
Amersham.

S.E. London: MR. J. HUNTER (G2ZQ),
63, Hervey Road,
Blackheath, S.E.3.

S.W. London: MR. A. E. WOOD (G5AW),
247, Leigham Court Road,
Streatham Hill,
S.W.2.

Middlesex: MR. L. WILKINS (G6WN),
81, Studland Road,
Hanwell, W.7.

London, West: MR. G. EXETER (G6YK),
29, Askew Crescent,
W.12.

Yorkshire, East Riding: MR. W. A. CLARKE (G5FV),
"Lynton," Hull Road,
Keyingham, Hull.

The Biggest and Most Varied Stock of Ready to Buy Electrical and Radio Electradox are Showing

POWER AMPLIFIERS. For working M.C. Loud-Speakers on Gramo Pick-up from D.C. mains. Also for Public Address Systems from Microphone. D.C., £3 10s.

AMPLIFIERS, RECEIVERS AND RADIO GRAMS. Marconi long-wave to 25,000 metres field Set, 6-valve and 4-valve Note Filter, £7. **Edison Bell** All Mains 2-valve Pentode A.C. Sets, £3 10s. each. **Radio Gram**, Electramonic A.C., All Mains, B.T.H. Motor, M.C. Speaker, complete with valves, one mahogany, one oak, unused, £22 10s. each. **Ultra Twin Cub** 2-valve A.C. All Mains Set, £4 10s. **Lissen A.C. Radio Gram Console**, £14. **11-Valve Cinema Vertical Amplifiers**, fitted for Gramo and Photo Cell, £15. 75 R.C.A. Gramo Scratch Filters, 3s. 6d. R.C.A. Speaker Filters, 3s. 6d. 10 Asbestos Gloves, 7s. 6d. each. **Amplifiers, Mains Igranac A.C.**, 5-watt, £4; ditto, Mains Northern Electric H.M.V., 10-watt, £5. **Edibell Mike** or Gramo A.C. Amplifiers, £4. All less valves. **Battery Sets.** Short-wave 2-valve **Burndep**, mahogany, £3 10s. 2-valve Oak **Alford** ditto. 5-valve **Battery Transportable**, Mahogany case, with valves, £3. **G.E.C. Victor III**, in neat metal cabinet, drum dials, 3-range switch, 200/2,000 metres, new, £2 15s. **Fellows Little Giant III**, in Oak Cabinet, with three matched valves, 35s. List £8. **Ediswan** 2-valve Sets, 25s. 6d. **Portable 5-valve Sets**, by Royal Radio, etc., guaranteed perfect working order, wonderful range and quality, £3 5s. to clear.

MAINS UNITS. Igranac H.T. and L.T., for 110-volt or 220-volt mains, 32s. 6d. **H.T. Mains Units**, famous British make, 220-volt D.C., 15 m/a., leatherette case, plug and cord, 25s. **A.C. Mains Units**, 220-volt 50 cycles 15 m/a., brand new, 45s. **Pye Universal H.T. Eliminator** for portables or sets, £2 7s. 6d. List £5.

BROWN'S 2-volt Superseder, steps up from L.T. to H.T., 3 taps for your set. Reduced from £3 15s. to 37s. 6d.

PETROL-ELECTRIC GENERATING SETS. 4½ kw, 100 volts 45 amps. Dynamo coupled to 4-cylinder engine with water-cooler and regulator. Price £50. 3½ kw, ditto, as new, £40. 2½ kw, 220-volt 12-amp. Dynamo, coupled to 2-cylinder Aster 3½ h.p. Engine. Price, as new, £35. 1½ kw, Twin A.B.C., ditto 75 volt 25 amps., as new £30. 1kw. Single-cylinder R.N. Set, 50 volts 10 amps., £18. 0.3-kw. Stuart Turner Petrol Electric, 300 watts, £23; 150 watts, £18.

DYNAMOS AND MOTORS. 1-kw. Crompton, 100 volts 10 amps., £3 10s. 10 Crompton, 100 volts 3 amps., 35s. **H.T. and L.T.**, 18 volts 20 amps. and 480 volts 200 m/a., for combined charging of L.T. and H.T. Cells, £6 10s. D.C. 220-volt Crypto Motors, 1 h.p., 2,500 r.p.m., £5; 440-volt ditto, 1 h.p., £5 10s. **Dynamos:** 30 amps. 100 volts, 1,800 revs., £12; 20 amps. 100 volts, 1,800 revs., £7 10s.; 10 amps. 100 volts, 1,800 revs., £6 10s.; 4 amps. 100 volts, 1,800 revs., £3. There are a number of 40-amp. 8-volt Dynamos which charge up to 35 2-volt or 4-volt cells at once. Enclosed ball bearings. Bargain at £5 10s. **D.C. Generators**, shunt wound for charging 6-9 volts 8 amps., ball-bearing enclosed, fitted Auto cut-in-out, 25s.; 100 volts 4 amps. ditto, 35s.; 30 volts 15 amps., £5.

DYNAMOS. L.T. Charging. Aero, 12 volts 250 watts, with auto cut-out, 25s.; W.W., 20 volts 5 amps., 50s.; L., 12 volts 8 amps., 45s.; Ct., 18 volts 8 amps., 65s.; 80 volts 20 amps., £7 10s.; and four 100-volt Motors, 10s. **High-Tension Charging Motor Generators**, 230 volts A.C. to 100 volts 100 m/a., D.C., 70s. **H.T. Anode Motor Generators**, 100 volts D.C. to 250 volts, 250 m/a., £10. 220 volts D.C. to 400 volts D.C., 200 m/a., £12. **G.E.C. and B.T.H. 2-com. Aircraft Generators:** 950 volts 60 m/a. and 8 volts 5 amps., £5; 600 volts 80 m/a. and 8 volts 3 amps., 22s. 6d. **Fine Newton H.T. Generators**, ½ kw., 2,000 volts, £20. **Slow-Speed Motor Generator**, 1 kw., 2,000 volts, £24; 2 kw., 2,000 and 4,000 volts, £30. **Large E.V. Megger Hand Generators**, 600 volts, £5 10s.

MOTOR GENERATORS. 4 R.C.A., 220 volts to 500 volts, 200 m/a., £5; 3-phase 380 volts to 12 volts 10 amps., and 320 volts 300 m/a., £5; 230-volt A.C. coupled to D.C. 350 volts 300 m/a. and 12 volts 10 amps., £5 10s.; 100 to 240 volts, £4. **S.M.D. Co.**, 12 volts to 800 volts, £4; 220 D.C. to 310 volts 300 m/a. and 12 volts 10 amps., £5; ditto to 480 volts 200 m/a. and 18 volts 20 amps., £5 10s. 200 volts D.C. to 6 amps. 20 volts, £6 10s.; 220 volts D.C. to 400 volts 100 m/a., £5; 220 volts D.C. to 750 volts 200 m/a., £10; 110 volts D.C. to 2,000 volts 500 m/a., £20; 200 volts D.C. to 4,000 volts D.C., ½ amp., £30.

ROTARIES. S.M.D. Co., 230 volts D.C. to 110 volts A.C., 3 amps., £3 10s. Neco 200 volts D.C. to 140 volts 1 amp. A.C., £3.

MOTORS. Vactric, 1/50 h.p. Universal, 3,400 r.p.m., 220 volts, 17s. 6d. **Standard Cables**, small, 3-phase 50-cycle, 30s. **E.M.I. Kalee**, 1/8th h.p., 240 volts D.C., 30s. **Wagner D.C.** 1/6th h.p., 220 volts, 35s. A.C. 1/6th h.p., 40s. **Garrard Electric Power Units for Gramos.** Universal Electric Motors with pulley and enclosed adjustable resistance, with bakelite panel fitted 12 adjustments, for any mains 50 volts up to 250 volts. List £5 15s. Sale—Motor, 20s.; Mains Resistance, 7s. 6d.; or the pair, 25s.

METERS. 150 3-amp. Battery Testers, No. 108, with moving-coil meter and graded rheostat, 12s. 6d. **Silvertown Astatic Horizontal Galvos**, jewel pivots, 7s. 40 Sifam Polarised Central Zero Ammeters 3-0-3 amps., 7s. 3 Recording Graph. Voltmeters, by Elliott, £4 10s. **Cambridge Meters for Pyrometers** to 1,200 cent., 35s. 3-in. dial 1,500-volt D.C. Moving-Coil Panel, 35s. **Testing Sets**, Elliott, etc., E.108, 4 ranges, amps. and volts, 45s. A.C. Hot Wire, ½ amp., 5s.; 6 and 110 volts, 5s. 9d. **Cell Testers**, pocket, 15s.; with spikes, 30s. **Bridges**, 10,000-ohm 4-dial Wheatstone, with Galvo, £10. G.P.O. type, £7 10s. **Mirror Galvos Reflecting Beam**, by Paul Gambrell, Sullivan, and Tinsley, £3 to £10. **Standard Resistance Boxes and Universal Shunts**, 35s. **Electrostatic Voltmeters** to 2,800 volts, £2. 1st grade Moving-Coil Meter Movements for 5s. In portable wood case, 7s. 6d.; or complete Portable Meters, 12s.; for home make test sets. **Record Circscale**, 25s.; **Weston & Turner Moving-Coil Panel Meters**, 0-300 volts, 20s.; 2½-in. dial flush.

DIX-ONEMETERS are 60s. only. A remarkably small price for a meter worth £10 in comparison with others. Latest model. Mirror, Double Scale, Moulded Base. The finest Precision Multi-Measuring instrument is the Dix-Onemeter, the acknowledged Radio Standard beloved by Expert and Amateur. Test Booklet "A" Free.

RESISTANCES. LX 140 Varley Wire Wound, 500,000 ohms, 1s. 3d. 72 Tubular, 400 ohms, 6d. 50,000 Vacuum Grid Leaks and Resistances Sutra, .01, .025, .05, .5, 1 meg., all at 3d. each. **Tapped Wire-Wound Eliminator Resistances**, 2s. 6d. **Edibell Wire-Wound Resistance Coils**, 6,000 ohms, 16,000 ohms, and 38,000 ohms, 1s. 9d. **Reg. Volume Controls for Gramos or Mikes**, 300,000 ohms, rocker ring type, 3-line, for 1s. 6d.

WIRE. Lead-covered single, 3/029, 7s. 50 yds.; 7/029 ditto, 9/3 per 50 yds. L.C. Twin, 1/054, 12s. per 50-yd. coil; L.C. Twin, 1/044, 16s. per 50-yd. coil. Plain V.I.R. lighting, 1/044, 600 meg., 5s. 3d. per 100 yds.; 9,000 yards, 27/40 Litz for H.F. coils, 1s. per dozen yards. **Heavy Mains Flex**, for Electric Heaters and Irons, etc., 4s. per doz. yds., post 6d. **Twin Lighting Flex**, 2s. per doz. yds., post 4d. **Insulated Earth Cable**, 1s. 6d. per doz. yds., post 4d. **Lead-in Cable**, rubber-covered, 2s. doz. yds., post 4d. **Red and Black Flex**, 1s. 6d. per doz. yds., post 3d.

LAMPS. 150 Red and Gold or Black and Gold Chinese 10-in. Lamp Pedestals, 1s. 6d. **Festoons**, decorative, for 230 volts, 14 bulbs and cord, 12s. 6d. **Oldhams Miners' Safety Lamps**, 12s. 6d. **Solid Brass Barrel or Car Inspection Lamps**, 2s. 6d. **Complete Field Helio**, with stand and spares, 45s. **Tubes of Argon, Helium, Oxygen and Uranium**, 20s. set. **MIRRORS FOR RAY TREATMENT**, 50 Mangin 6-in. para. Reflectors, 7s. 6d. 6 Navy 10-in. ditto, 20s. 5 Navy 20-in. ditto, 25s. **X-Ray Tubes**, 3 valves, all sizes, 30s. to 45s.

VALVES. Cosmos Red Spot Short Path, 5s. **Splendor 2-volt SG**, 7s. 6d. 5-pin Valve Holders, 5d. V.24, 5s. D.E.V., 7s. 6d. Q type 5s. A.T. 40 stand, 1,000 volts on plate, 4s. 6d. **Cossor Rectifying Valves**, 2s. 6d. R.A.F. "C" type, 2s. 6d. **Weco 1-volt, 4-pin base**, 3s. 9d. **W.E. Power**, 6 volts, 4s. 6d.

ENGINEERING. Morse Silent Chains, new, 29 ins. long, with large and small sprockets and chain cases, ½ h.p. rating, for motor driving. 10 Skew-drive Gear-boxes for cinemas, ½ to 1 h.p., 10s. 70 lbs. **Fine Solder**, 1s. stick. **Motor Blowers**, 1 h.p. motor coupled to blower on iron bedplate, 3-in. outlet, speed 2,500 r.p.m., motor D.C., ball bearings and carbon brushes, £3. 110-volt or 220-volt Air Pump Electric Universal Motor for car tyres, with gauge and trolley, £5 10s. **Engines:** 5 Stuart Turner 1 h.p. Twin Air-Cooled at £5 each, with bedplate. **Flat Irons**, 10s. **Electric Two-plate Cooker**, 12s. **Single Hotplates**, 7s. 6d. **Immersion Heaters** for 3s. 6d., 5s. and 30s., with plugs and cord. **Electric Soldering Irons**, all sizes, from 7s. 6d.

FOCUSING ARC LAMPS, 60s. **Indoor Projectors**, with lenses, fitted 100-watt focus lamp, 39s. 6d. **Xmas 14-lamp Festoons**, 220 volts, 12s. 6d. **Torpedo Spring-driven Gyroscopes**, 15s.

ELECTRADIX RADIOS, 218, Upper Thames Street, London, E.C.4

'Phone: City 0191

'Grams: Electradox, Cent, London.

QRA Section.

Manager: M. W. PILPEL (G6PP).

NEW QRA's.

- G2BZ—B. DAVIS, "Elettra," Brockley Hill, Stanmore, Middlesex.
 G2II—A. M. RALLI, Gate House, The Flagstaff, Colwyn Bay, North Wales.
 G2QC—J. F. WARREN, "Skerryvore," Milton Avenue, Gerrards Cross, Bucks.
 G2RV—S. HIGSON, "Hibblecroft," Egremont Promenade, Wallasey, Cheshire.
 G5FU—E. G. FOULKES, 27, High Street, Rhyl, Flintshire.
 G5SR—S. RIESEN, 31, Walton Road, Woking, Surrey.
 G5VF—M. V. WILKES, "Fircroft," Chawn Hill, Stourbridge, Worcs.
 G5VV—R. M. GELDART, Greenway, Coombe Valley, Preston, Weymouth.
 G5XP—G. H. STANCER, 326a, Yorkshire Street, Rochdale, Lancs.
 G5YY—W. A. MEAD, "Addiscombe," Branston Road, Burton-on-Trent, Staffs.
 G5ZT—H. JONES, "The Firs," The Straits, Hoghton, Preston, Lancs.
 G5ZX—J. P. STOVE, 35, Melville Street, Pollockshields, Glasgow.
 G6AK—T. S. BRISTER, 22, Sherbairn Street, Cleethorpes, Lincs.
 G6AZ—F. B. ENGLISH, 42, Brownberrie Avenue, Horsforth, Leeds, Yorks.
 G6CV—T. S. GARRARD, 50, Lambeth Road, Linthorpe, Middlesbrough.
 G6DH—D. W. HEIGHTMAN, 59, Burrs Road, Clacton-on-Sea, Essex.
 G6DJ—H. S. URCH, 2, Spring Leaze, Knowle Park, Bristol.
 G6DL—A. G. LAPWORTH, 86, Muntz Street, Small Heath, Birmingham.
 G6FP—C. W. THOMSON, 58, Kent Road, Mapperley, Nottingham.
 G6FU—J. H. CANT, 112, Terridon Road, Catford, London, S.E.6.
 G6FV—N. C. KIRBY, 5, Station Road, Teynham, Sittingbourne, Kent.
 G6HG (Portable)—S. HIGSON, "Hibblecroft," Egremont Promenade, Wallasey.
 G6IB—H. N. MILES, 325, Kings Park Avenue, Rutherglen, Glasgow.
 G6IW—T. V. WILLIAMS, "Malincourt," Grosvenor Avenue, Rhyl, Flintshire.
 G6JL—J. C. LEE, 12, Spinney Lane, Kettering, Northants.
 G6JN—R. S. JACKSON, 49, Goulden Road, Withington, Manchester.
 G6JX—R. J. KEIR, 59, Gladstone Place, Aberdeen.
 G6RP—R. PARSONS, 9, Ailsa Terrace, Tiverton, Devon.
 G6WF—B. WHITEHOUSE, "Erin," The Bratch, Wombourne, Wolverhampton.
 2ARM—R. G. DREWERY, 274, Park Avenue, Hull, Yorks.
 2ASX—J. W. HAMILTON, White House, Sandhurst, Gloucester.
 2BAQ—D. S. MITCHELL, The Flagstaff, Colwyn Bay, North Wales.
 2BDW—LEN ROBINS, Avondale, St. Margaret's Drive, Rhyl, Flintshire.
 2BIW—A. HINE, 81, Chaworth Road, West Bridgford, Notts.

2BMT—H. V. BOOTH, 17, Cemetery Avenue, Ecclesall, Sheffield.

2BPQ—A. L. DAINES, 17, Clarendon Road, Gravesend, Kent.

2BTW—W. T. BASSAGE, "East Lynne," Joynson Street, Kings Hill, Wednesbury, Staffs.

2BVQ—F. WISEMAN, 41, Hollins Street, Buxton, Derby.

The following are cancelled: G2BD, G5DI, 2AWJ, 2BFB, 2BGM, 2BJW, 2BJY, 2BTG.

New Members.

HOME CORPORATES.

- J. E. NICKLESS, A.M.I.E.E. (G2KT), "Newsonia," Bull Lane, Rayleigh, Essex.
 A. J. WELCH (G2LC), 19, Lincoln Gardens, The Drive, Ilford, Essex.
 L. I. SIDWELL (G6JF), 114, Regent Street, Nelson, Lancs.
 J. W. GILL (2AVN), 37, Parkfield Drive, Hull.
 R. W. LOWDEN (BRS923), The Lynwode Hotel, Station Bridge, Harrogate.
 T. F. S. WILSON (BRS924), 3, Upper Coltbridge Terrace, Edinburgh 12.
 R. I. JONES (BRS925), 28, North Street, Leigh-on-Sea, Essex.
 R. H. PHILLIPS (BRS926), Lambourn, Shinfield, Berks.
 W. T. MOOR (BRS927), 32, Deuchar Street, Newcastle-on-Tyne.
 H. S. VIDLER (BRS928), 31, Lewis Road, Chichester, Sussex.
 W. T. SHANNON (BRS929), 87, Bray Street, Belfast, B.I.
 T. J. McCAMPBELL (BRS930), Hurst Park Cottage, Orchard Avenue, Cambridge.
 T. E. PETHERS (BRS931), 3, Conley Street, Greenwich, S.E.10.
 A. MOORE (BRS932), 10, Falsgrave Road, Scarborough.
 W. M. DALTON (BRS933), 27, Kenwyn Drive, N.W.2.
 M. E. EDWARDS (BRS934), 13, The Dell, Wembley, Middlesex.
 D. E. BRIDGES (BRS935), 60, Hillside Gardens, Edgware, Middlesex.
 G. W. McDONALD (BRS936), Oakroyd, Woodburn Avenue, Aberdeen.
 W. J. HANNAH (BRS937), 179, High Road, Kilburn, N.W.6.
 L. F. LEWIS (BRS938), 24, Gladstone Avenue, East Ham, E.6.
 F. MERKLE (A), 21, Brodrick Grove, Plumstead, S.E.18.
 J. DALTON (A), 7, Clarence Place, Whitby, Yorks.

DOMINION AND FOREIGN.

 K. H. HOESCH (D4OHR), 64 Oberstrasse, Duren, Rhineland, Germany.
 CARLOS TUDELA (OA4Z), Italia 114, Miraflores, Lima, Peru.
 C. H. STARR (VE2AE), 17, Mount Avenue, London, W.5.
 G. V. PRIESTLEY (VE3HE), 87, Douglas Avenue, Toronto, Canada.
 W. M. RICHARDS (VK5WR), 32, Charibury Road, Medindie Gardens, South Australia.
 C. W. BROWN (VU3CW) 2 (1) Wing, Risalpur, N.W.F.P., India.
 B. H. BILLINGS (W1BBF), 8, Hamilton Street, Salem, Mass., U.S.A.
 Y. BEERS (W3AWH), 900, West State Street, Trenton, N.J., U.S.A.
 D. W. MORTLOCK (BERS127), Hongkong-Shanghai Bank, Singapore.
 J. R. McDONALD (BERS128), 29a, Livingstone Road, Bulawayo, S. Rhodesia.
 A. R. WHITE (BERS129), Shirreff Street, Stawell, N.S.W., Australia.
 L. J. STEPHEN (BERS130), Main Road, Toungoo (Burma).
 J. R. DASHWOOD (BERS131), Uda Radella, Nanuoya, Ceylon.
 J. E. EARLE (), c/o D. W. Mortlock, Hong Kong-Shanghai Bank, Singapore, S.S.

Rules Governing the Issuance of W.B.E. Certificates.

(Reprinted from February, 1930, BULLETIN.)

- (1) The W.B.E. Certificate shall be awarded by Council to Corporate Members of the R.S.G.B. or the B.E.R.U.
- (2) The W.B.E. certificate shall be awarded in accordance with Rule 1 to those persons who have effected two-way communications on amateur frequencies, with at least one station in some part of the British Empire located in each of the other four continents.
- (3) All applications shall be made in writing to the Honorary Secretary of the R.S.G.B. and shall be accompanied by documentary proof, in the form of letters or postcards, that the claim is justified.
- (4) For the purpose of differentiating between the five continents, Council shall approve a map

of the world showing clearly certain arbitrary datum lines. A copy of this map shall be held at the Headquarters of the R.S.G.B. and arrangements made to publish a reproduction in the Society's Journal.

- (5) All claims shall be judged in conjunction with this map.
- (6) Members to whom the W.B.E. certificate has been issued shall be permitted to use the letters "W.B.E." on personal correspondence during the time they are members of the R.S.G.B. or the B.E.R.U.
- (7) Communications with ship stations sailing under the British flag and British mobile stations will be considered as Empire contacts.
- (8) British mandated territory and Protectorates shall be considered as forming part of the British Empire.

The above rules were approved in Council, January 22, 1930.

W.B.E. Certificates.

The following is a list of W.B.E. certificates that have been issued up-to-date:—

NAME.	1930.	CALL SIGN.
C. S. Hunt	G6NT
T. A. St. Johnston	G6UT
G. S. Samways	G6OH
E. Menzies	G5MQ
R. A. Bartlett	G6RB
B. Warren	G6CI
J. Witty	G5WQ
J. D. Chisholm	G2CX
J. Wyllie	G5YG
G. W. Thomas	G5YK
C. E. Runeckles	SU8RS
L. H. Thomas	G6QB
H. D. Price	G6HP
E. H. Turner	VE2CA
J. Clarricoats	G6CL
H. O. Pargeter	VU—
W. P. Brown	W3PF
S. Townsend	G2CJ
Capt. A. M. H. Fergus	G2ZC
S. Buckingham	G5QF
H. A. M. Whyte	G6WY
Alan Smith	G6VP
K. C. Wilkinson	G5WK
E. J. Laker	G6LK
W. G. Gilhespy	G6GS
W. S. Woodhams	G6WO
T. Woodcock	G6OO
A. C. Simons	G5BD
A. D. Gay	G6NF
G. E. Jones	G6XB
H. R. Carter	VK2HC
F. L. Stollery	G5QV
M. Howden	VK3BQ
B. Hall	G2DZ
L. A. Moxon	G6XN
E. Whiteley	ZL1FW
A. E. Watts	G6UN
M. S. Killen	CT2AA
J. W. Mathews	G6LL
H. J. Powditch	G5VL
C. J. Reed	G2IP
F. R. Neill	GI5NJ

G. Marcuse ...	...	G2NM
E. A. Dedman ...	...	G2NH
T. Stephens ...	...	VK3GO
G. Brown ...	...	G5BJ
J. B. Scott ...	...	EI7C
A. G. Brown ...	...	VK3CX
E. W. Mayer ...	...	K4KD
Capt. G. C. Price ...	...	G2OP

1931.

V. M. Desmond ...	...	G5VM
G. H. Ramsden ...	...	G6BR
H. C. St. John ...	...	VK2RX
L. J. Feenaghty ...	...	VK4LJ
G. H. Grossin ...	...	F8RJ
H. E. Whatley ...	...	G2BY
S. W. Cutler ...	...	G2OL
H. N. Walls ...	...	G2DH
C. G. Phillips ...	...	G5PJ
H. M. Cooper ...	...	VK5HG
T. Evans ...	...	VK2NS
Mrs. L. E. Hutchings ...	...	VK3HM
G. W. Tonkin ...	...	G5RQ
A. W. Alliston ...	...	G5LA
W. B. Sydenham ...	...	G5SY
T. P. Allen ...	...	GI6YW
C. Harrison ...	...	VK7CH
A. E. T. Payne ...	...	VK3PP
J. de Cure ...	...	VK3WL
W. E. Wale ...	...	SU8WY
J. B. Kershaw ...	...	G2WV
J. Davies ...	...	G2OA
W. H. D. Nightingale ...	...	G5NI
H. C. D. Hornsby ...	...	G5QY
H. Brabrook ...	...	G6BB
E. R. Martin ...	...	G6MN
L. N. Wilkins ...	...	G6WN

1932.

L. Vydra ...	...	OK2AG
P. D. Walters ...	...	G5CV
W. A. Clark ...	...	G5FV
J. A. Philpot ...	...	G5PL
A. E. Livesey ...	...	G6LI
Miss B. M. Dunn ...	...	G6YL
A. H. Mackenzie ...	...	VK4GK
J. B. Elliott ...	...	ZL3CC
J. P. Malan ...	...	ZS2N
C. H. Chorley ...	...	G5YH
N. E. Read ...	...	G6US
J. F. Heine ...	...	VK3JF
S. Riesen ...	...	G5SR
J. Hunter ...	...	G2ZQ

SOCIAL NOTES.

I was very pleased to see so many in London for the Convention, and hope you all had a good time. If anyone was at all dissatisfied in any way, I should be glad to hear from them.

May I thank all those who provided accommodation for our provincial members over Convention.

Last month I referred to G5VM's trip to Rugby, and hoped to take a party to London. The railway are not issuing cheap-day tickets, but a party of eight could travel at ordinary singlefare rates for the return journey. If anyone is interested, will they get in touch with me *at once*, and I will see what can be done.

H. V. W.

APPARATUS REVIEWED.

New Eddystone Products.

Messrs. Stratton & Co., Ltd., makers of "Eddystone" products, have brought out a number of new lines of special interest to the amateur. There is the Microdenser in six capacities—15 mmfd., 25 mmfd., 35 mmfd., 50 mmfd., 75 mmfd., and 100 mmfd. This is a low loss variable condenser suitable for receiver work, or neutralising on low power transmitters. It is of brass construction throughout, except for the one Isolex end-plate, the stators are bonded, and the spacing is double. To facilitate wiring, the rotor connection is brought out in line with the stator connections by means of a brass pillar, and the rotor contact maintained through a brass strip and spring washer. The prices for the various types are: 15 mmfd., 4s. 6d.; 25 mmfd., 4s. 9d.; 35 mmfd., 5s.; 50 mmfd., 5s. 6d.; 75 mmfd., 6s., and 100 mmfd., 6s. 6d. Another useful article is the 5-10 metres H.F. choke, a neat little tube affair with terminals at either end, price 1s. 6d.

The same makers have brought out an interesting range of extension brackets and fittings. The brackets are stout skeleton aluminium castings and are designed for single or three-hole fixing condensers. The uprights are $\frac{3}{16}$ in. by $\frac{1}{4}$ in., and the base plate 2 in. by 1 in., which should hold anything. The extension pieces, either 3 in. or 6 in., have metal fixing bands and screws, and the brass spindle is typical of the whole job—well finished. This spindle runs in an ebonite bush, so that a metal panel may be used if desired; another happy thought. The price of this outfit is 3s. for 6 in. extensions, and 2s. 6d. for 3 in.

Eddystone Short-wave Manual.

We would particularly like to congratulate Messrs. Stratton & Co., Ltd., upon their Short Wave Manual, which was available in time for Olympia and sold by the Society upon their stand. It contains details of a number of short wave receivers and of their construction, and makes most interesting reading. There are also particulars of short-wave super-het adapters for B.C. sets, and of two transmitter outfits. As Messrs. Stratton specialise upon short-wave components, and have upon their staff five amateur transmitters, this manual should be of the greatest use to readers. A nominal charge of 1s. 6d. is made for each copy, which can be obtained either direct from Messrs. Stratton & Co., Ltd., Eddystone Works, Bromsgrove Street, Birmingham, or from Headquarters. We would advise all our readers to secure a copy of this.

Clix Terminals.

Messrs. Lectro Linx, Ltd., have sent us a sample of their new Clix panel terminal. What we particularly like about this is the fact that the body is provided with a hexagon form so that it can be held with a spanner while the nuts behind are made tight. Having been driven to distraction upon many an occasion by terminals working loose in the panel and having to hold the body with a pair of pliers while trying to get the nuts really tight, we can fully appreciate the value of this component; in fact, we have ear-marked it for embodiment in our next set. Apart from this the

terminals are clearly marked and well finished in the usual manner of all Clix products.

G.E.C. Developments.

We have received from the General Electric Co., Ltd., a pocket edition of their Osram valve catalogue. This contains a full list of all types of this well-known valve up to date, together with the various characteristics and other technical information. The cover of this brochure is an imitation of the well-known Osram valve carton. A neat little folder also gives details of the Geco-phone receivers for the coming season. The makers will be glad to forward copies of these lists to readers upon request.

The Cossor Products.

Messrs. A. C. Cossor, Ltd., have long been known for their valves and other radio products. Foremost among the seventy different types of valves they make is a new type of Variable Mu and various types of Pentodes, all incorporating the mica bridge mode of construction. This is claimed to hold the components in position rigidly so that possibility of variation of position is adequately prevented. The well-known Cossor Melody Maker set has passed through various phases of design, and this year's model has brought it into distinct keeping with the trend of modern design. There are four distinct models for battery or mains operation, both with and without loud-speakers.

Mullard Programme.

Messrs. Mullard send us a copy of their new valve catalogue for the coming season. It would be hard not to find among the various types noted one which did not quite suit your particular requirements. In addition the booklet contains at the end a large amount of technical information of value to all amateurs.

An important improvement in metallised valves was shown by the Mullard Company at Radio-lympia. This development, on which the Mullard research staff had been working for some months, was perfected just in time to allow the first deliveries to be rushed to the Exhibition on Monday.

In appearance, the new Mullard metallised valves are of an attractive golden colour, due to a new combination of metals employed for the coating, one of which is copper.

The advantages of the new form of metallisation are that the copper is a better conductor and gives a more perfect screening effect; the coating adheres more perfectly to the glass, and does not soil so readily as the zinc previously employed.

Sets fitted with the new type of Mullard metallised valves will be still more stable in operation.

CALLS HEARD.

S.S. "Glenlea," West Coast of Africa, June 12, 1932, 40 miles North of Monrovia, Liberia.

14 m.c.: 18.30-20.05 G.M.T.: g2bm, g5bj, g2gf, g5hb, f8arv, hb9g, on4bz, on4jj, ludy, wlme, w2coe.

June 13, 15 miles S.W. Cape Palmas:—

14 m.c.: g2bm, g2dh, g5pl, g6xq, haf7a, on4fm.

June 15, 1932, 30 miles S.W. Lagos, Nigeria:—

14 m.c.: g2by, g6wn, g2zq, f8ex, f8pz, f8wb.

W. E. Lane (VQ4CRH), P.O. Box 570, Nairobi, Kenya Colony, during May and June:—

g2bm, g2dh, g2dw, g2oa, g2oi, g2ox, g2xq, g5aw, g5bj, g5bz, g5cv, g5fv, g5ib, g5kl, g5ku, g5la, g5np, g5sy, g5vl, g5wy, g5yc, g5yg, g6ax, g6bk, g6hk, g6kp, g6py, g6rb, g6vp, g6wk, g6wn, g6wy, g6xq, g6yl, g15nj, yi6wg, yi6bz

By BERS74 (India) during July: G2pd, g2op, sulec, vs7gt, vu2cs, vu2bg, vq4crh, xzn2b, xzn2c, xxlyj, yi2dc, yi6bz.

By VU3CW during June: G2by, g2am, g2ao, g2ak, g2zr, g2xd, g5bj, g5bt, g5al, g5vl, g5pl, g5oc, g5xa, g6cj, g6gd, g6fp, g6vp, g6hp, g6bs (?), gi5nj, sulec, vq4crh, vq4rl, vs7gt, vu2lj, vu2as, vu2bg, vu2cs, yi6bz, xzn2b.

Rex Ackley, 1063, Market Street, Sunbury, Penna., U.S.A.:—

Call.	QSO.	QSA-R-T.	Time.
			E.S.T.
G5FV ...	Test ...	4-6-xtal ...	5.04 p.m.
G6ZS ...	Test ...	5-5-8 ...	5.07
G5MS ...	Test ...	5-6-8 ...	5.09
G5SH ...	Test ...	4-5-6 ...	5.10
G5SY ...	Test ...	5-7-8 ...	5.35
G6LK ...	Test ...	3-5-6 ...	5.39
G6ZR ...	Test ...	3-4-xtal ...	5.49
G5BJ ...	VP2DD	5-7-xtal ...	5.55

CORRESPONDENCE.

The Editor does not hold himself responsible for opinions expressed by correspondents. All correspondence must be accompanied by the writer's name and address, though not necessarily for publication.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I am glad to see that at last the merits of the metal rectifier are being recognised and that some publicity is being given to them.

I have been using this device for years, and I have never had a single failure.

Amongst their duties in my station are a (type H.T.2), which is used for many purposes and can be paralleled at will. It is rated at 400 volts, 100 m a, being of the bridge type, having 8 poles in each limb, capable of taking 100 m/a at 200 volts. You can realise its adaptability, such as providing H.T. in its ordinary term; paralleled for H.T. accumulator charging, or to excite a 200 volt pot straight off the mains, and voltage doubling. In fact it would be difficult to find what it could not do. Another 4-pole rectifier of the same make gives the G.B. for the frequency doublers. Three others are used for accumulator charging, and one, an A.3, energises every relay in my station, which is away in a shack and completely remote-controlled.

Faithfully,

ALAN SMITH (G6VP).

The Editor, T. & R. BULLETIN.

DEAR SIR,—I notice that the B.R.S. members have been much criticised in your columns during the last few months, and we are told in the April Editorial that quite a number of them apparently lose interest after one year's membership of the R.S.G.B. It is not, I think, a case of lost interest in Radio, but that they have discovered that as

far as *they* are concerned, the international "ham" spirit does not exist.

The amateur outside the British Isles does not, apparently want the co-operation of the B.R. station, and has neither the courtesy to acknowledge a report. There are, of course, exceptions, but that is the general impression I have gained and endorsed by other B.R.S. and A.A. stations. I do not think that more than one-quarter of the reports that we send out of this country to overseas stations are acknowledged. This is small consolation to the new B.R.S. member who, at first, will only be able to pick out the more prominent signals on the amateur bands.

I shall be glad to hear the opinion of other B.R.S. stations who have had similar treatment.—Yours faithfully,

J. THEODORE SHROUDER (2BZZ).

To the Editor, T. & R. BULLETIN.

DEAR SIR,—With reference to Uncle Tom's article in the current BULL., I agree that the Q.R.U. worker who operates solely for collecting wallpaper is to be condemned. At times, however, the ham who operates for ragchews *per se* is a big nuisance to the experimenter whose time is limited. A reliable, concise report is wanted in such a case, and not a lot of irrelevant talk. When I have time, I enjoy a ragchew and become one of the most garrulous beings, but more often I regard the ragchewer as a waster of valuable time.

Moreover, we are not all multi-linguists, and our rather limited code of abbreviations is our only way of contact with many brother hams. Tolerance with the other man's point of view, whether he wants to talk a lot or not, is likely to be productive of more real ham friendship than any amount of humorous (?) cross talk.

Lastly, space both in the ether and in the BULL. is very valuable.—Yours faithfully,

WILFRED F. MOORE (G5PQ).

17, Lawn Road, Uxbridge,

Middlesex.

21.7.32.

The Editor, T. & R. BULLETIN.

DEAR SIR,—After numerous unsuccessful attempts, I have obtained the promise of the construction in England of an S.G. transmitting valve to the following data:—

Max. anode dissipation, 15-20 watts.

Max. anode volts, 500.

Fil. volts, 6.

Max. emission, 70 m/a.

This, however, will only be a single test sample.

In fairness to the manufacturers, we cannot expect them to spend much time and money on the production of a valve for which there is little demand. (In this district there is a definite demand, both by the C.C., QRP man to use as P.A. without reneutralising on changing band, and by the QRO man as Freq. Doubler.) Will, therefore, all who are interested, please drop me a line to my address below, it being understood there is no obligation to purchase.

As soon as I obtain the test sample, a full report will be given.—Yours sincerely,

ERIC N. ADCOCK (2BLG).

31, Churchill Road,

Little Bromwich, Birmingham.

NOTES and NEWS



BRITISH ISLES

DISTRICT REPRESENTATIVES.

DISTRICT 1 (North-Western).

(Cumberland, Westmorland, Cheshire, Lancashire.)
MR. S. HIGSON (G2RV), "Hebblecroft," Egremont Promenade,
Wallasey, Cheshire.

DISTRICT 2 (North-Eastern).

(Yorkshire, Durham, Northumberland.)
MR. L. W. PARRY (G6PY), 13, Huddersfield Road, Barnsley,
Yorks.

DISTRICT 3 (West Midlands).

(Warwick, Worcester, Staffordshire, Shropshire.)
MR. V. M. DESMOND (G5VM), 199, Russell Road, Moseley,
Birmingham.

DISTRICT 4 (East Midlands).

(Derby, Leicester, Northants, Notts, Rutland, Lincoln.)
MR. H. B. OLD (G2VQ), 3, St. Jude's Avenue, Mapperley,
Nottingham.

DISTRICT 5 (Western).

(Hereford, Oxford, Wiltshire, Gloucester.)
CAPT. G. C. PRICE (G2OP), 2, St. Anne's Villas, Hewlett Road,
Cheltenham, Glos.

DISTRICT 6 (South-Western).

(Cornwall, Devon, Dorset, Somerset.)
MR. H. A. BARTLETT (G5QA), "Donbar," Birchy Barton Road,
Exeter, Devon.

DISTRICT 7 (Southern).

(Berkshire, Hampshire, Surrey.)

DISTRICT 8 (Eastern).

(Cambridge, Huntingdon, Norfolk, Suffolk.)
MR. S. TOWNSEND (G2CJ), 115, Earlham Road, Norwich.

DISTRICT 9 (Home Counties).

(Bedfordshire, Hertfordshire, Essex, Buckinghamshire.)
MR. F. L. STOLLERY (G5QV), "Kingsmead," Lancaster Gardens
East, Clacton-on-Sea, Essex.

DISTRICT 10 (South Wales and Monmouth).

(Monmouth, Glamorgan, Breconshire, Carmarthen, Cardigan
Pembroke.)
MR. A. J. E. FORSYTH (G6FO), "St. Aubyns," Gold Tojs,
Newport Mon.

DISTRICT 11 (North Wales).

(Anglesey, Carnarvon, Denbighshire, Flintshire, Merioneth,
Montgomery, Radnorshire.)
[To be appointed.]

DISTRICT 12 (London North).

MR. S. BUCKINGHAM (G5QF), 19, Oakleigh Road, Whetstone,
N.20.

DISTRICT 13 (London South).

MR. A. D. GAY (G6NF), 49, Thornlaw Road, West Norwood,
S.E.27.

DISTRICT 14 (London East).

MR. T. A. ST. JOHNSTON (G6UT), 28, Douglas Road,
Chingford, E.4.

DISTRICT 15 (London West and Middlesex).

MR. H. V. WILKINS (G6WN), 81, Studland Road, Hanwell,
W.7.

DISTRICT 16 (South-Eastern).

MR. H. A. M. WHYTE (G6WY), Killiney, Worsley Bridge Road,
Beckenham, Kent.

DISTRICT 17 (Mid East)

MR. A. E. LIVESEY (G6L1), Stourton Hall, Horncastle, Lincs.

SCOTLAND.

MR. J. WYLLIE (G5YG), 31, Lubnaig Road, Newlands,
Glasgow.

NORTHERN IRELAND.

MR. C. MORTON, (G15MO), 27, Bristol Avenue, Belfast.

District Notes for publication should be written as concisely as possible and should be in the Editor's hands by the 25th of the month preceding publication. They should be of a general rather than personal nature. Individual reports from County Representatives will not be accepted for publication.

DISTRICT 1 (North-Western).

As promised last month, I can now give you details of our forthcoming Conventionette. It is being held at the Angel Hotel, Dale Street, Liverpool, on October 8 and 9. On Saturday, the 8th, we are holding a "Get-together," starting at 8 p.m., at the Angel, and we hope to have a Rag-chew and get to know each other so as to save time on the Sunday, and this will continue until about 10 p.m. On the Sunday (9th) the events start at 11.45 a.m., when we assemble at the hotel, and the business meeting will start at 12.00 hrs. prompt. Lunch has been arranged for 13.15 hrs., and will be followed by speeches by various prominent members who are coming along. At 15.00 hrs. we will move off to some place of interest, which has still to be arranged, and we shall return to the hotel for tea at 17.00 hrs., following which we shall be at liberty to stay as long as we feel inclined and talk about things. Supper can be had at about 20.00 hrs., for those who feel they need further sustenance! All that remains now is for everyone to turn up and make it a great success and a big satisfaction to those who are organising it, so roll up in your hundreds and let us show the other Districts that

we have the finest Conventionette of all. Please don't forget to let me know that you are coming so that you will get some lunch, because I cannot be expected to cater for you if I do not know that you are coming!

Reports from the counties are very scarce this month, no doubt due to the holiday season. The only people who are apparently doing anything are G2OA, who is very busy on 28 mc., and G5OZ, who is trying out a push-pull rig. I am told that several of the members in the Liverpool area are very interested in the suggested R.N.W.A.R., and I have hopes that many of them will take it up.

Let me have better reports for next month, OM's.

DISTRICT 2 (North-Eastern).

Owing to the holidays I am making up these notes earlier than usual.

Any information which may come to hand during the next few days will be included in the next issue.

Please allow me to thank all the members who have helped me during the past year.

You will all know by now that the East Riding of Yorkshire is now part of District No. 17, and I trust that members there will give the same support

to G6LI in the future as you have done to me in the past.

G5FV reports good results on 28 mc. having had QSO with HAF4D, HAF8B, F8OD, and F8GQ—reports from South Italy and Berlin. Local co-operation between the transmitters of Hull would be very beneficial to all 28 mc. men.

G5HB had two contacts with HAF stations on 28 mc. this month. G5VO, with the Hull gang, had a field day on August 14, when G6IC (portable transmitter of G5VO) was used. The transmitter was hidden too well. This proved a success—12 members turning out in three cars. G5VO has fixed a sked on 56 mc. with G6OO. A car was used on these 56 mc. experiments, and it was noticed that the fade out was quite sudden when a few houses were between TX and RX.

Most of the population of Bridlington thought this car was the G.P.O. detection van and was looked upon with some apprehension.

G6UF has now rebuilt his outfit and may be on the air at present.

G2BH has put the transmitter grid bias department on to A.C.—an article for the BULLETIN perhaps when O.K.

G6PY still trying the sked with VE3HE, but conditions are very uncertain.

DISTRICT 3 (West Midlands).

There are no reports this month owing to DR being on holidays. The Convention will be over when these notes appear, and I trust all the district will continue to give me the same F.B. support this year as they have done in the past.

Don't forget the Hillmorton visit September 17; leave Hope and Anchor Hotel, Edmund Street, Birmingham, at 1.30 p.m.

DISTRICT 4.

[We regret that no notes from this District have been received recently. The following have, however, come to hand from Mr. Livesey, G6LI (C.R. for Lincoln).—Ed.]

The fourth informal Lincolnshire County meeting was held at Tetney village, near Grimsby, on July 17, and, through the courtesy of Imperial and International Communications, Ltd., a visit was made to the Tetney beam transmitter, which afforded interest to everybody. The party was in charge of Mr. Henderson, the chief engineer, who was untiring in his effort to explain every part of the station. The party included three Hull members, G2QH, G5IX, 2BIH, G6AK, ex-VP3SRB and the C.R.

Lincoln members are intensely active, but are still waiting for more co-operation on the 80-metre band.

DISTRICT 6 (South-Western).

Reports are again very few and far between in this area this month, and one can only blame it on the fine weather and the month of holidays. The letter budget is again being started, and I want to again emphasise the fact that only those who contribute will receive the budget. The Devon C.R. (5SY) will be circularising all members on this point in the course of a few days. One other point I wish to mention, and it is this: Space in the BULLETIN is limited as it is, and members must not expect to get a full report of their doings for the month printed, *unless it is of value*. Congrats to 6RP, of Tiverton, on getting his full ticket, and he has

already been on the air on 7 mc. with 5 watts to an Ultraudion. His contacts at the moment are TS, HB and a few other "local" Europeans. His aerial is AOG, and the best time for DX is early mornings. The station of the Devon C.R. 5SY has been doing the usual amount of good DX, and a peculiar thing noticed is that W stations are R2-3 in Torquay, but they report 5SY as R7-8. During the 56 mc. field days held in this area, 5SY managed to put his sigs across Dartmoor, a distance of 25 miles, where they were received by 5QA. Other stations participating in these 56 mc. tests were unlucky, and nothing was heard by them at all. Another field day is being arranged for the middle of September. 5SY has a super-regenerated attachment which he uses with his ordinary o.v.l receiver, and I can assure everyone that it is the real goods. If anyone is interested he will be glad to send them full particulars and diagrams. 5VL and 6XB in Cornwall are both very active, and 5VL hooked a J about a week ago, and had a splendid QSO. There must be something very bad in the Exeter air, as 5QA's transformer has now—like 5WY's—gone west, and is away for the necessary repair and overhaul. 5QA is now using a half wave Windom, and recently altered the length to agree with the formula given by 2BI in the August BULLETIN. Results to date are poor, but the antenna has only had a fortnight's real trial. Other stations active are 5WY, 5QS, 6WS and BRS836.

DISTRICT 7 (South-Eastern).

As this is the last time I shall have the pleasure of compiling the notes for No. 7 District, I would like to thank all C.R.'s and members for their loyal support during my term of office as D.R. I wish to thank especially G2NH and G6GS, whose hospitality has greatly helped to make the monthly meetings organised by the C.R. for Surrey so successful.

The event of the month was a 56 mc. camp by the sea. On Saturday, July 26, G2DC, G6GZ and 2BRP went down to Rustington, Sussex, with a complete TX and fixed up the camp. No attempt was made that night to set up the transmitter.

With the dawn of Sunday came the rain, which continued throughout the day. In spite of the awful weather, G2NH, G2YD, G2DZ, G2MR, G5JZ, G5UI, G6NK and G6BU arrived during the course of the morning. By this time, the weather was so bad that it was decided to abandon the camp and to move into Littlehampton. This was done, and midday found us with the 56 mc. transmitter set up in a garage. The aerial, a half-wave Zepp, was attached to an old curtain pole stuck in the ground and about 10 feet high. G2DC then cruised about Littlehampton with his RX in a car and R9 signals were received while on the move with little or no difficulty. The rain was pouring down all this time, so no attempt was made at long-distance working. Both G2DC and G6GZ heard tone signals on 56 mc. during the afternoon, but could not identify the station. G5TZ, of Cowes, I.O.W., had promised to leave his TX running all day sending out automatic test calls, and it is thought that these signals may have been from his station. Nothing was heard of the Devonshire stations who were also out on a 56 mc. Field Day.

A further 56 mc. day was planned for August 20, but had to be abandoned owing to transport difficulties. However, G2NH, G2DC, G2OA and G6GZ

made a trip to Selsey Bill and spent a very enjoyable day by the sea.

In conclusion, I ask all members to give their new D.R.'s and C.R.'s full support for the coming year, and to make the two new District even more "up to the mark" than old No. 7.

DISTRICT 9 (Home Counties).

We are pleased to note another new station in Essex area, G6KV. Both G5UK and G6KV are doing well in their initial stages, their QRP fone on 1.7 mc. is reaching 50 miles: nicely audible on D. and one L.F. at this distance. G6DH, with BRS577, has been testing local fone and C.W. on 56 mc. with excellent results. Receiver used was detector and one L.F. plus one valve as super-regenerative oscillator. BRS577 is visiting Dublin at the moment and reports the EI's very keen and great-hearted fellows. G2WG has been trying out buried or underground aeriels with fone and C.W., and received encouraging reports from three, five and 30 miles. The following reported:—G2HJ (Bucks), G5FB (Herts and Beds), G2WG, G5UK, G5VS, G5VT, G6DH, G2QJ, G5LY and G6WQ.

BRS490 is reporting on G5QV week-end transmissions. G2LZ was last reported sounding the Blackwater with his earth lead from portable yacht transmitter. Here is another station to welcome. Congrats to G6IH (Beds).

DISTRICT 12 (London North).



Visit to Brookman's Park, June 18th, 1932.

DISTRICT 13 (London South).

The writer would like to know how many of the members of No. 13 District read these notes. During Convention two well-known stations said they had never heard of our local meetings!

It will probably interest some of you to know that we have divided the district into two sections, S.E. and S.W. G2ZQ and G5AW are to present these two districts respectively. If you have any difficulties, or if you are a new member, will you get into touch with either of these representatives or G6NF.

DISTRICT 14 (London East).

At our last meeting, held at Chingford, members had the pleasure of the company of D4OHR and D4KZA. Congratulations to 2AOV, who has been allotted the call sign, G6KC. During the August holidays, G6UT was able to visit G6TX, who was doing his annual training with the R.A.F. Aerodrome in Sussex. The next district meeting has been arranged for Tuesday, September 27, at QRA of Mr. G. L. Grisdale (G5GZ), 39, Ranelagh Gardens, Ilford, Essex.

DISTRICT 15 (London West and Middlesex).
Representative: Mr. H. V. WILKINS (G6WN), 81, Studland Road, Hanwell, W.7.

It was pleasing to see this area well represented this year at Convention, but I am afraid the reports have suffered in consequence.

As you are probably aware, our area has now been split up as two counties, and Mr. Exeter (G6YK) is taking over West London, while my brother (Mr. L. Wilkins, G6WN) will take care of the Middlesex section. We will discuss this matter at our next meeting, and decide on the reporting system.

Having one or two things to discuss at this meeting at G2BY on September 22, I should like to see it well attended, so please turn up in force.

This month starts a new year, and it is my ambition to make it better than ever before. To this end, I shall look to you to support the County Representatives and myself.

SCOTTISH NOTES.

This issue sees a resumption of these notes after a two months' absence from the BULLETIN.

Contrary to expectation, there has been considerable activity throughout Scotland during the summer. Many new stations have started up, and for your information I append a list:—

G6JX (ex-2BTG).—R. J. Keir, 59, Gladstone Place, Aberdeen.

G5ZX (ex-BRS417).—J. P. Stove, 35, Melville Street, Pollokshields, Glasgow.

G6DU (ex-BRS499).—J. McOmish, Currachreen, Perth Road, Crieff.

G6GQ (ex-BRS500).—D. Robertson, Tighnabruaich, Killin, Perthshire.

G6IB.—H. M. Miles, 325, Kings Park Avenue, Rutherglen, Glasgow.

There are two further new Scottish radiating licences, G2FR and G6CM, but I do not know yet if I am at liberty to disclose the QRA of these stations.

The following BRS's have taken out "A.A.

Permits:—

2AZX (BRS670).—M. H. Munroe, 1, Paisley Avenue, Edinburgh.

2BDX (BRS754).—W. Davidson, 12a, Erskine Street, Alloa.

2AWH (BRS815).—W. B. Stirling, Mossgrove, Bridge of Allan.

2AZM (BRS873).—J. B. Duncan, 10, Corrunna Street, Glasgow.

In addition there have been elected a number of new BRS members, so that the record of July and August makes very pleasant reading.

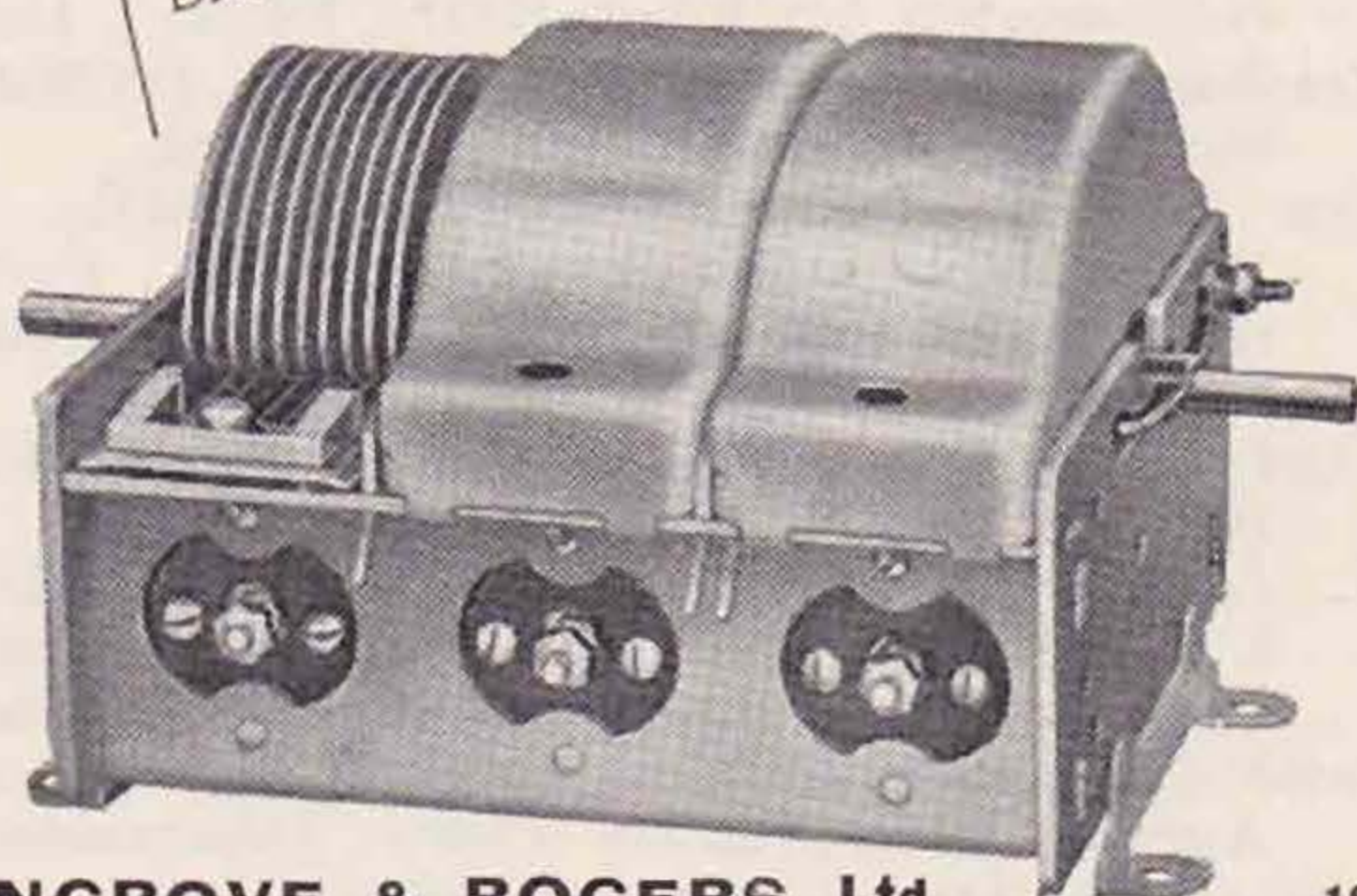
Two further mobile licences have been issued, G6BL to G5IM and G6YG to G5YG.

I am very sorry to learn that death has visited the home of our old friend G2MG. Mrs. Millar died during August, and I am sure I have your warrant for expressing our united sympathy with Mr. Millar in his sad bereavement.

The various Districts take up their winter meetings in September again. "A" District members meet at G5YG on Wednesday evening, September 28. "B" District members journey to Glasgow at the beginning of October to discuss District matters with the writer. "C" District meeting has not yet been fixed, but members will be circularised from this office. "D" District resumes at Mr. Rowden's address on September 14.

POLAR CONDENSERS

PRICES:
SUPER-HET. TYPE **27/6**
 Two sections .0005 with one tracking section
 Price includes cover. **25/6**
 3 x .0005 **34/-**
 4 x .0005 **5/-**
 Prices include covers.
 DISC DRIVE **7/6**
 DRUM DRIVE



WINGROVE & ROGERS, Ltd.

A splendid contribution to superheterodyne circuits is provided by the latest
"STAR" SUPERHETERODYNE 3-GANG CONDENSER

ACCURATE SPACING of vanes obtained by precision machine assembly. MATCHING ACCURATE to within $\frac{1}{2}$ of 1 per cent plus or minus 1 mmfd. ALL-STEEL FRAME and rigid construction ensures that this accuracy will never vary. STRONG SPRING JOURNAL BEARINGS give absolute freedom from shake or endplay. TRIMMERS cannot go out of adjustment. Conveniently operated from top.

From the "Wireless Trader" Test Report:
 "... remarkable accuracy in matching has been obtained.

"This is undoubtedly one of the best condensers on the market..."

SEND FOR COMPLETE CATALOGUE.

188-9 Strand, W.C.2. Polar Works, Liverpool.



Representative for France
 W. A. Swift, 6, Rue
 Duquerry, Paris XI.

Correspondence in all languages

IMPORTANT

to

WIRELESS TRADERS

ARE YOU on the REGISTER of

Officially Approved

WIRELESS TRADERS & REPAIRERS?



Design Registered.

The Official Sign denotes a DEFINITE STANDARD of efficiency. Qualify for membership and so secure the recognition and support your business requires.

SEND FOR PARTICULARS:

The Hon. Secretary, Joint Committee, R.S.G.B. & W.L.
 12, Grosvenor Crescent, London, S.W.1.

Empire



News.

B.E.R.U. REPRESENTATIVES.

Australia.—H. R. Carter (VK2HC), Yarraman North, Quirindi, N.S.W.

British West Indies, Bahamas, Bermuda, and British Guiana.—H. B. Trasler, No. 2 Mess, Pointe à Pierre, Trinidad, B.W.I.

Canada.—C. J. Dawes (VE2BB), Main Street, St. Anne de Bellevue, Quebec.

Ceylon and South India.—G. Todd (VS7GT), District Engineers Bungalow, Nuwara Eliya, Ceylon.

Channel Islands.—H. J. Ahier (G5OU), Lansdowne House, 45a, Colomberie, St. Helier, Jersey, C.I.

Egypt and Sudan.—E. S. Cole (SU1EC), Haking House, Abbassia, Cairo, Egypt.

Hong Kong.—P. J. O'Brien (VS6AE), 12, Kent Road, Kowloon Tong, Hong Kong.

Iraq.—H. W. Hamblin (YI6HT), Wireless Section, R.A.F., Shaibah, Basra, Iraq.

South Rhodesia.—S. Emptage (ZE1JG), Salcombe, Plumtree, Southern Rhodesia.

Irish Free State.—Col. M. J. C. Dennis (EI2B), Fortgranite, Baltinglass, Co. Wicklow.

Kenya, Uganda and Tanganyika.—H. W. Cox (VQ4CRF), Box 572, Nairobi, Kenya.

Malaya.—T. G. Laver (VS3AC), Government Electrical Power Station, Johore Bharu, Johore, Malaya.

Newfoundland.—Rev. W. P. Stoyles (VO8MC), Mount Cashel Home, St. John's East.

New Zealand.—D. W. Buchanan (ZL3AR), 74, Willis Street, Ashburton; and C. W. Parton (ZL3CP), 69, Hackthorne Road, Cashmere Hills, Christchurch.

Nigeria.—Capt. G. C. Wilmot (ZD2A), 1st Battalion Nigeria Regt., Kaduna, Nigeria.

N. India and Burma.—R. N. Fox (VU2DR), C/o VU2FX, Sgt. C. D. Connerton, Aircraft Park, Lahore Cantonments, Punjab, India.

South Africa.—W. H. Heathcote (ZT6X), 3, North Avenue, Bezuidenhout Valley, Johannesburg.

Ceylon and South India.

Report for June.—Nuwara Eliya, June 21.—Conditions this month have been decidedly unimpressive. 7 mc. has been practically dead throughout the month, and 14 mc. very patchy with brief DX periods. R.A.C. interfering from EU and AU high power stations on 7 mc. is on the increase, and at times renders this band impossible, as local working here is mostly synonymous with medium DX.

Complaints have been received of the daily QRM from RPK and XFQ and it is hoped that action must be taken to limit this interference.

VU2JP reports that general conditions are poor, due to local cyclonic conditions with bad fading on 14 mc. He also reports very QRM from XFQ and RPK. BERS106 is on the move, but sends list of calls heard.

VS7GJ proceeding home on furlough this month, carries with him the good wishes of all local amateurs.

Ceylon: Birthday greetings to H.R.H. the Prince of Wales were successfully QSP'd by VS7GT on June 12, via G5BJ, whilst VU2JP reports unsuccessful in his relay owing to prevailing conditions.

June and part July: VS6 stations, with the exception of one or two, have closed down for summer months. Conditions on 7 mc. and 14 mc. have been excellent since February but static is now prevailing on 7 mc.

BERU test results noted with enthusiasm, and thanks expressed to all stations who made contact with VS6, also congratulations to winners. September will bring renewal of activities, and numbers of new VS6's will be heard.

July.—VU2JP alone reports this month, and most local stations appear inactive, although the

welcome news that VS7AL proposes to start-up again on low power cc. phone has been received.

Conditions on both 7 mc. and 14mc. are extremely poor, and QSO's, when made, are marred by incessant QRN and rac QRM. It is to be hoped that things will improve ere long.

VS7GT recently had a visit from BERS106 of H.M.S. *Emerald*, and a most enjoyable evening was spent.

British West Indies.

By VP4TA (via VP2YB and G5VM).

July-August.—Activity in this section of BERU is very marked, and conditions for DX have been quite good. VP2MR is running a schedule with VP2CC of Jamaica, and remarks that Europe and Canada are coming in well at about 1800 G.M.T. now. VP2YB is arranging a field day and has built a portable transmitter with the idea of investigating skip effects which exist between VP2MR and himself.

Canada via VE2BB and G5VL.

Conditions this last month, though not so good as the month before, have been fair. Europeans have been worked consistently and also South Americans, but ZL and VK are out of the picture at present and—Asia, where art thou?—(Sgd.) VE2BB.

North India and Burma.

By VU2AH.

July.—Conditions appear to have been generally poor during July, with frequent rain and electric storms. QRN on 7 mc. has been unusually bad, swamping even the loudest signals.

VU3CW reports that conditions brightened up after the 30th on 14 mc.

Iraq Notes.

Conditions generally on 14 mc. have been good, and have continued thus into July, although on some days it was very much the reverse. Operating times have been from 1400 to 2100 G.M.T. approx. with J's the only Eastern stations heard coming in well, but about 1900 W's being heard. Towards the end of the month the band has been fairly lively during the morning period from 0500 to 0700 G.M.T., when Europe only is heard. VK and ZL stations have not been heard since the Contest, and South Africans since last year. 7 mc. has been dead during the evening, improving towards 2100 G.M.T. approx. and at 0100 American stations cram the scale at an average of QSA 4. This continues until 0300, although the same conditions with respect to this country do not seem to prevail in the former! On one occasion, with the advent of a new moon, conditions improved considerably on this band. YI2DC and YI6BZ appear to be the only stations active at present, as YI6KR and YI6WG have not been heard. YI6HA is still QRT awaiting supplies from G for his new receiver. YI2BT has at last found opportunity to come on the air, and in conjunction with YI1RM is building a M.O.P.A. for mainly QRP on approx. 10 watts. We wish them the best of luck as their stay will be a short one, and ask that members keep a watchful ear for them on both 14 and 7 mc. Sergeant F. E. Groom, who has been a very consistent and valuable partner at times, especially during the Contest, is now a registered member, using the call YI6BZ, and works from the same QRA when YI2DC is not on the air. As YI2DC is put forward as E.L.S. for Southern Iraq messages for him should be passed to YI6BZ during the former's absence.

Australia.

(By VK2HC).

JUNE-JULY.—Our heartiest congratulations to G5ML on winning the B.E.R.U. Contest. There is little to report this month concerning conditions. The 28 mc. band is hibernating. On 14 mc. the North American signals are fair, but rather erratic between 05.00 and 07.30 and the W's can be heard calling European stations at that time. 7 mc. is not quite as good as usual, only fair conditions with W from 08.00-12.00 G.M.T. The old reliable 3.5 is falling off, peculiar blank-outs being in evidence. Best ZL contacts just after sunset, around 08.00 G.M.T.

The VK5 Division held a very successful Radio Exhibition this month. The All-Australian Five-Point Relay Contest, which was to have been held in August, has been postponed indefinitely.

Organised testing has been arranged for the solar eclipse next month, between B.E.R.U. H.Q. and the Western Australian Division of the W.I.A.

B.E.R.U. Report.

Dr. Lunt, ZT1Q, has drawn attention to an error in the B.E.R.U. Challenge Contest Report which appeared in the May BULLETIN. In this report the entry against Dr. Lunt's name should have read 6 QSO's in 2 zones equal to 60 points. The entry given actually refers to Mr. Heathcote: ZT6X, whose score was 34 points from 3 QSO's in 2 zones.

We ask the stations in question to accept our apologies for the mistake.

W.I.A. and R.S.G.B.

We have received a message from Mr. Feenaghty in which he advises us that the Wireless Institute of Australia started its existence in 1911, whereas the Wireless Club of London (from which R.S.G.B. transcended) did not commence its activities until 1913.

We take this opportunity of wishing the W.I.A. good luck on its coming-of-age.

QSL Section.

No further information is as yet available regarding the proposed extension of the local QSL services in the separate States of U.S.A., and we are, therefore, still compelled to refuse BRS and AA cards for W VE and associated countries (see previous BULLETINS for list).

Mr. W. H. Martin (GI5HV), manager of the GI QSL Bureau, asks me to mention in these notes that there is a large number of GI cards in his files, and he is unable to distribute these until he receives stamped addressed envelopes from the GI stations concerned.

J. D. C.

R.S.G.B. AND N.P.L. CALIBRATION SERVICES.

R.S.G.B. Calibration Service takes place from G2NM (Sonning-on-Thames) on each Sunday at 11.00 and 23.00 and Thursday at 23.00 G.M.T. (or B.S.T. if in force) in the 3.500 K.C. band.

The N.P.L. Service is given on the first Tuesday in March, June, September and December from G5HW at 21.00 G.M.T on 1,785 K.C.

Full details of all these Services were published on page 259 of the February issue. The Service from G5YK (Cambridge) has been postponed pending alterations.

I.F.S. NOTES.

By EI2B.

We have to welcome a new EI station this month, viz., EI2F, whose QRA is G. Reynolds, 7, Charlemont Mall, Portobello, Dublin, and who would be glad of reports on his signals.

Nothing further of general interest to report as many EI's are away on holidays.

EUROPEAN NOTES.

Via R. R. SAWELL (CT1BK).

The R.E.P. are now entering into a new phase of activity, and are inaugurating several fresh facilities for their members. Thus the R.E.P. BULLETIN, which had not been issued for several years, has now appeared again in a very attractive form, and is being issued regularly every month. The Society is also making arrangements to start a laboratory and control station, and also to engage headquarters where members may meet together. The R.E.P. has a very accurate record system by which, in spite of the many thousands of QSL cards dealt with, they are able to keep track of every card, and they also keep a complete record of particulars of every member's station and of the work which he has performed.

CT1AA, CT1BY, and CT1CW have become extremely interested in 56 mc. work, and have been carrying out various experiments with their stan-

dard apparatus, which has enabled them to get quite good phone results over short distances on this frequency. They are now all engaged in building special transmitters and receivers for this band, and will be working again very shortly.

Conditions here have been quite good recently, W stations coming through especially well on the 7 mc. band, but, of course, the trouble is that as conditions improve, the QRM increases in proportion.

FRANCE.

The R.E.F. requests that amateur organisations should select for publication in their respective magazines matters of interest appearing in *Radio R.E.F.* or in the R.E.F. Notes. They draw attention to a list of European standard transmissions and working times which was printed recently.

Societies are also asked to advertise the fact that the French stations FB8G, F8EF, F8FQ, FM8IH, F8JT, F8OD, F8SW, F8TV, F8UU, F8XF and others are working daily on the 28 mc. band between 08.00 and 12.30 G.M.T.

M. Bouchard (F8ZB), is organising a Q.R.P. contest for French stations working with a maximum input of 5 watts, telephony or C.W., for the dates September 11 and 18, between 00.00 and 24.00 G.M.T. In each "CQ" call will be included a five-letter code word. QSL's should bear this code word or no point will be gained by the contestant. Reports and QSO's with amateurs on all bands will be sought.

F8GQ, of Granville (Manche), has verified definitely a remarkable reception of telephony from the Corsican station at Calenzana which works duplex with Nice on a wave-length of 7.6 metres, and has a power of only 200 watts and a directional aerial radiating only towards Nice. The reception was carried out with a reacting detector and a 2 L.F. stages. It will be interesting to know if other receptions have taken place in Europe.

"T. & R. Bulletin."

ADVERTISEMENT RATES.

Per insertion.		Per insertion.	
Full Page	£6 0 0	Half Page	£3 0 0
Quarter Page	1 10 0	Eighth Page	0 15 0

Series Discounts—5% for 6 or 10% for 12 consecutive insertions.

Advertisements specified for *Covers and Facing Matter* are not subject to series discounts.

The T. & R. BULLETIN is published on the 14th of each month. Orders, Copy and Blocks should be received by us on the 30th of each month preceding month of issue.

All applications for space or specimen copies should, please, be sent to Advertisement Manager,

PARRS ADVERTISING, LTD.,

Craven House, Kingsway, W.C.2.

Telephone: Holborn 2494

EXCHANGE & MART.

Rates 1d. per word, minimum 1/6. First line in capitals if desired. 2d. per word where all capitals are required. Minimum 3/-.

G5CC is now designing and manufacturing mains transformers and chokes. In addition to the usual gear we specialise in the construction of apparatus to individual specification. Prices compare more than favourably.—BUCKLARS LTD., The Arcade, Hitchin.

BRAND new crystal oscillator valves by well known British manufacturer, 2/9 each post free. 6 volts. Each one tested with Xtal before despatch.—G5ZG-G6TX "ASHLEIGH," Manor Road., Chigwell, Essex.

AMERICAN U.X. 210 Valves, new, £3 5s. 0d. Type 45, 18s. 6d., new 47 Pentode 15s. Morse instruction any evening by appointment.—N. E. READ, G6US, 32-34, Earl's Court Road, Kensington, W.

PYREX AERIAL INSULATORS, small-ribbed, 9d. each; ditto, large, 6s. 3d. each; Igranite short-wave Condensers, .00015, 3s. 6d. each, new; 1,000-volt test Elkon Condensers, 2 mfd., 3s.; Copper Tube Inductances, $\frac{3}{16}$ in., 3½d. per turn; ditto, $\frac{1}{4}$ in., 4½d., polished and lacquered; 14 S.W.G. Enamelled Hertz 66 ft. Aerials, 3s. 6d. each. Any Chokes or Transformers wound to your own specification at very competitive prices.—G6US & G6RL, 32, Earl's Court Road, W.8.

TRANSFORMER, 400 volts, 1768 kc. crystal, valves, condensers, etc. Bargains. Stamp for list. State wants.—G5CX, 5, Hopewell Terrace, Horsforth, Leeds.

WELL-KNOWN HAM, QRO ticket and sober character, wants 2nd Op to live with him in new QRA, West Middlesex district, to give company and help overheads. Furniture and gear provided.—Write Box 061, T. & R. BULLETIN.

MORSE INSTRUCTION—Day or Evening. Easy Terms. Special course for beginners; faulty formation; and advanced Students.—TELEGRAPH SCHOOL, 29, Talfourd Road, Peckham, S.E.

G6DS For neat and snappy QSL Cards, also Log Pads. Samples on application.—QRA, "Inglenook," Orlando Drive, Carlton, Nottingham.

TANTALUM AND LONIUM.—Make your own Battery Chargers for alternating current. Simple, reliable. Lonium Rectifying Electrodes, 2-4 amps., 10s., 5-10 amps., 15s. Also Transformers, Blue Prints, 1s. each, and complete Chargers.—BLACKWELL'S METALLURGICAL WORKS LD., Liverpool.

EXPERIMENTAL work of all kinds. Television discs; Kinema projectors; Models for demonstration.—JOHN SALTER (Est'd. 1896), Featherstone Buildings, High Holborn, W.C.1.

TELEVISION.—Parts for experimenters. Scanning Discs, 12/6; Baseboards with slot and four feet, 12/0; Viewing Lenses, per pair, 13/0; Motors, 35/0; Phonic Wheels, 3/6.—JOHN SALTER (Established 1896), Featherstone Buildings, High Holborn, London, W.C.1.

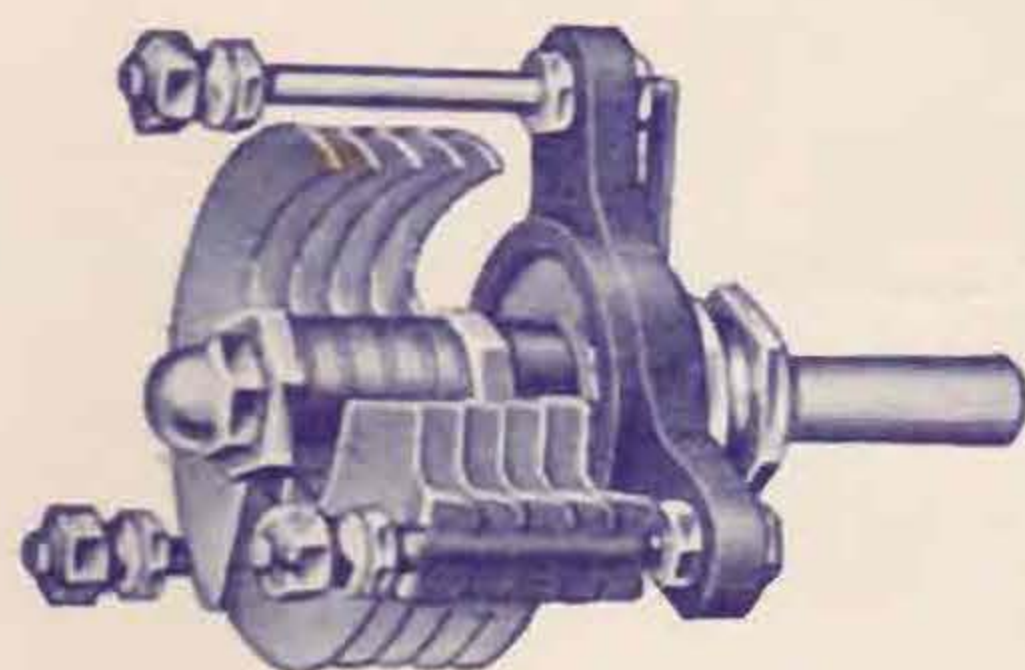
HAVE your "BULLS" bound in volumes of 12 issues. Binding per volume, 3s. 9d. post paid.—G.6DS, ex. 2BHD.

PATENTS AND TRADE MARKS.

PATENTS obtained, Trade Marks and Designs registered, British and Foreign.—GEE AND CO., Patent and Trade Mark Agents (H. T. P. GEE, Member R.S.G.B., A.M.I.R.E.), 51-52, Chancery Lane, London, W.C.2. Telephone: Holborn 1525.

CATERING

for the HAM

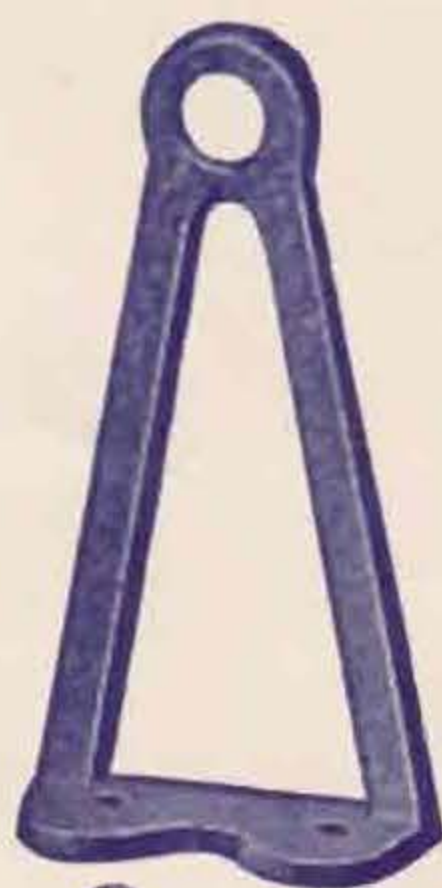


MICRODENSER (Prices)

For ULTRA SHORT WAVES

15 mmfd.	...	...	...	...	4/6
25 "	...	...	...	...	4/9
35 "	...	...	...	...	5/-
50 "	...	...	...	...	5/6
75 "	...	...	...	...	6/-
100 "	...	...	...	...	6/6

A special condenser with Isolex Insulation designed for use on the ultra short wavelengths. Soldered brass vanes, patent noiseless bearing $\frac{1}{4}$ " spindle.



EXTENSION SPINDLE OUTFIT

The outfit comprises a cast aluminium bracket, ebonite rod with N.P. brass collars and screws. $\frac{1}{4}$ " N.P. spindle and screwed ebonite panel bush with nut.

Prices:

6" ebonite extension	No. 925	...	3/-
3" "	No. 926	...	2/6
Bracket only	No. 927	...	1/-

(Bracket can be supplied for 3 Hole Fix Condensers.)



5-10 METRE H.F. CHOKES

A choke for ultra short wave receivers covering the 56 and 28 MC. bands. Space wound on featherweight former. Mounts easily in the wiring itself. Natural peak wavelength 38 metres.

Price 1/6



SHORT-WAVE H.F. CHOKES

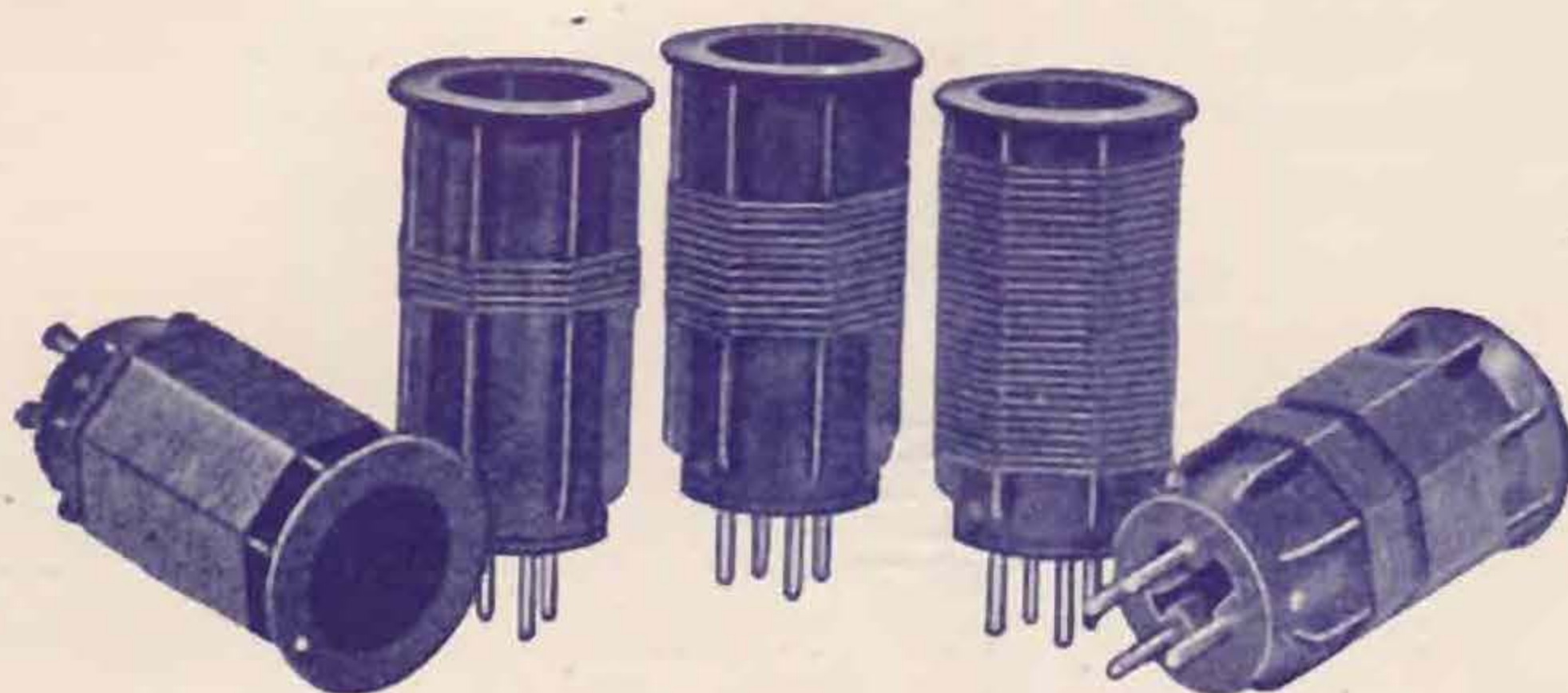
A specially designed S.W. Choke consisting of a hollow bakelite moulding with spaced winding on 6 ribs. For receiver or transmitter.

Type 923 — 9-100 metres, carry 25 m/amps.

Price 2/6

Type 924 — 8-60 metres, carry 100 m/amps.

Price 3/-



4-pin S.W. COILS

These coils plug into any standard valveholder. They comprise grid and reaction windings. Space wound on $1\frac{1}{2}$ " low loss former. Highly efficient, with small field. Wave ranges given are with standard Eddystone .00016 mfd. S.W. Condenser.

Type LB, 13.5-29 metres, price 3/6 Type R, 41-87 metres, price 3/6

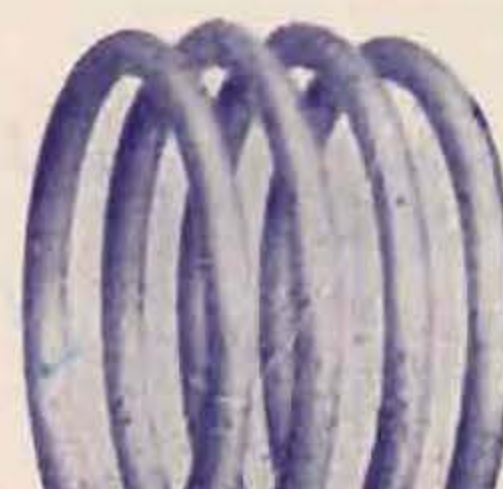
" Y, 22.5-47 " " 3/6 " W, 80/220 " " 4/-

Type G, 210/550 metres, price 4/6

TRANSMITTING INDUCTANCES

These are supplied wound from $3/16$ " or $\frac{1}{4}$ " bright copper tube lacquered to prevent oxidation. 3" diameter up to 15 turns, flattened and pierced ends.

	per turn
$3/16$ " tube	5d.
$\frac{1}{4}$ " "	6d.



STAND-OFF INSULATOR with Wing-Nut

Price 1/3

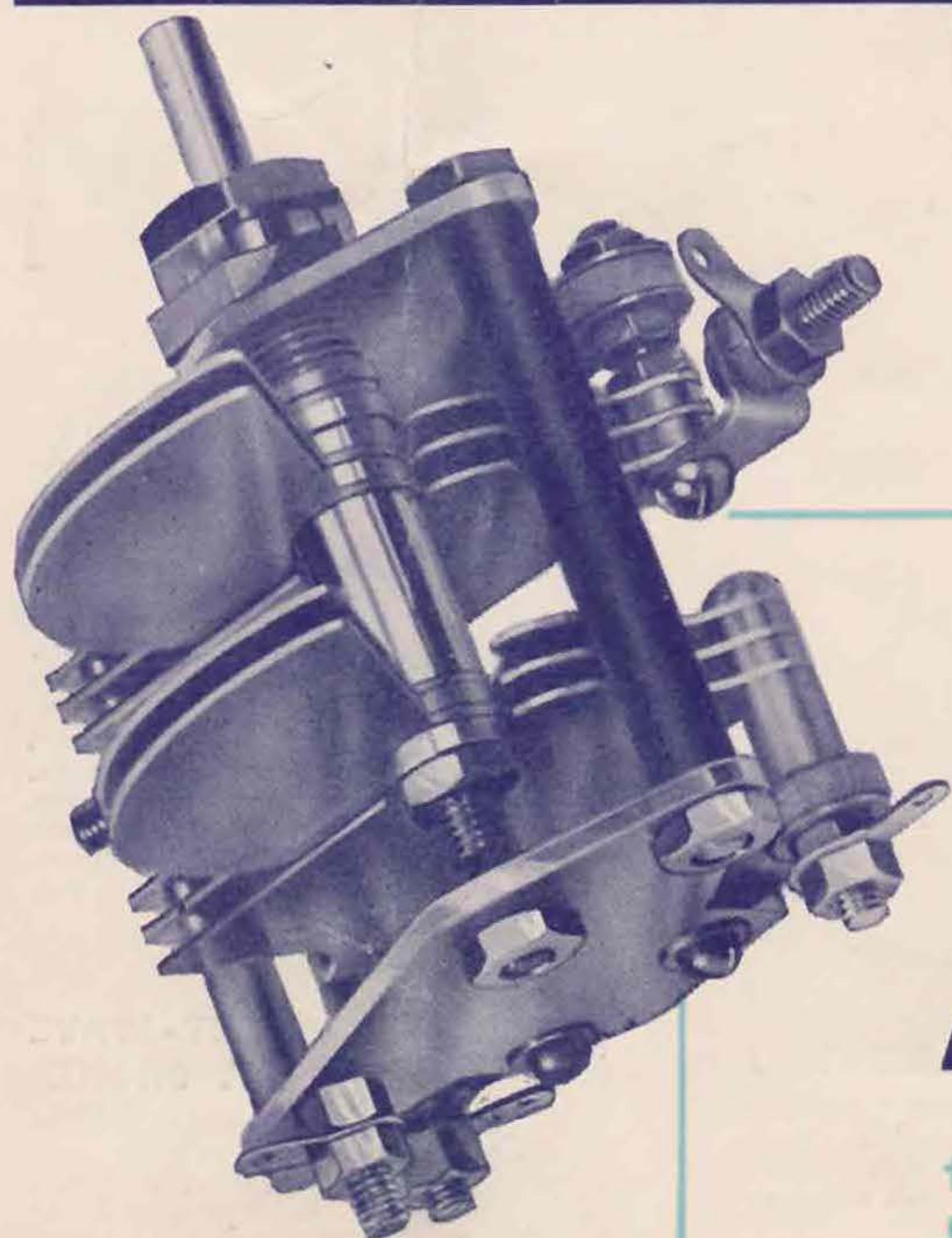
EDDYSTONE

SHORT WAVE COMPONENTS

Sole Manufacturers:
STRATTON & CO., LTD.
BROMSGROVE STREET
BIRMINGHAM

London Service Depot:
WEBB'S RADIO STORES
164, Charing Cross Road, W.C.2
Telephone: Temple Bar 2944





cyldon bébé series-gap

***a new condenser
for 5 metre
working***

Maximum Capacity 25 mmfds.
Minimum Capacity 3 mmfds.

8/6

Extension Handle Outfit 3/6

AND now, a Series-Gap Condenser for 5-metre working. Built on the same principles as the famous Series-Gap Short-Wave Condensers, the CYLDON 'Bebe' Series-Gap is specially designed to meet the requirements of this type of tuning. The materials used are the finest obtainable, whilst the precision used in the assembly of this new CYLDON triumph assures the high degree of accuracy so vitally important to successful operation on Ultra-Short Waves.

Remember there is a CYLDON Tuning Condenser for every purpose, both in transmitting and receiving.

**Condensers Built to Specification
at Special Rates.**

cyldon

SYDNEY S. BIRD & SONS, LTD.
CYLDON RADIO, HIGH ROAD
WHETSTONE, LONDON, N.20

Phone: Hillside 2344

FIVE YEARS GUARANTEE