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BULLETIN

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

- UNIVERSAL TEST METER
- ATLANTIC CITY CONFERENCE
- AMERICAN JOURNEY
- B.E.R.U. CONTEST RESULTS
- LOW POWER CONTEST

R.S.G.B. BULLETIN

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VOL. XXIII No. 2

CONFERENCE REFLECTIONS.

THIS seems an appropriate moment, as we await news of the final decisions reached at the Atlantic City International Telecommunications Conference to reflect upon certain features of the Conference and speculate broadly upon the future of Amateur Radio.

The news that the United Kingdom is to continue to permit its amateurs to use up to 200 kc/s. of the " top band " is a tribute to the good operating habits of members. When this particular part of the spectrum came up for final consideration the U.K. delegation was faced with severe opposition from many of the other European delegations, few of whom seemed to be fully aware of the usefulness of the band to amateurs. Most of the delegates expressed apprehension that other Services using the band would suffer interference from amateurs—a fear quickly dispelled by the chief U.K. spokesman, Mr. A. H. Mumford, O.B.E. of the G.P.O. Radio Branch.

The Society's representatives made a valiant but, for the time being, at any rate, unsuccessful effort to enlist the support of the Scandinavian countries for the U.K. proposal. Their failure was a disappointment, because it had been assumed that Norway, Sweden and Denmark would favour the continued use of this band by amateurs provided the input power remained restricted to 10 watts.

It is not fully known why the Scandinavian and many other European nations were unwilling to assign the band to their amateurs, but as a matter of record it should be stated that several of the European delegations seemed to have very little knowledge of amateur requirements in their respective countries. This state of affairs can no doubt be attributed to the war, for whereas the R.S.G.B. was able to carry on its work and maintain a close liaison with the G.P.O. and other official bodies, most of the European societies were compelled to close down. By this unavoidable action contacts of long standing were lost. It is also a fact of course, that many of our sister societies in Europe are now being administered by newcomers. In addition many changes have taken place in the tele-communications departments themselves. If the Conference could have been delayed for another year, the majority of the European Societies would by then have had the opportunity of making known fully their requirements to the responsible authorities, and would have been in a much better position to " prime " their Government delegates on amateur matters.

Before the Conference opened, most of us knew that broadcasting interests would move heaven and earth to obtain more spectrum space for normal H.F. broadcasting. What we did *not* know was that some 30 odd nations would demand additional bands of frequency for what is termed " tropical broadcasting." These unexpectedly large demands caused considerable embarrassment to the U.K. and the U.S.A. to mention only two of the nations who were not in full sympathy with the tropical broadcasting protagonists.

It is not intended at this juncture to discuss the pros and cons of tropical broadcasting, but it does seem that the principle of assigning exclusive bands of frequencies to this Service is quite wrong. The writer contends and many others share the view, that tropical broadcasting should be considered as ordinary high frequency broadcasting. To argue, as the sponsors have done, that broadcast programmes transmitted on a frequency of say 6 Mc/s. are intended only for national consumption is ridiculous in the extreme. At least one of the nations in favour of tropical broadcasting had the good sense to point out that even if broadcasts around 4 Mc/s. can be considered as national, it is quite impossible to avoid the reception of 6 or 8 Mc/s. transmissions at distances many miles removed from the country of origin.

The extravagant demands by the tropical broadcasters may well jeopardise other services and may result finally in the loss of portions of the 3·5 and 7 Mc/s. amateur bands. Next month we hope to be able to announce the final decisions. In the meantime it should be recorded that the U.K. Delegation has made great efforts to hold 400 kc/s. for amateurs on a shared basis between 3,500 and 3,900 kc/s. It will be remembered that originally the U.K. proposed 100 kc/s. between 3,500–3,600 kc/s. as an exclusive amateur assignment in Europe. After lengthy discussions with the Society's representatives, they put forward their new proposal, but again, as in the case of the " top band." the U.K. was unable to enlist any substantial measure of support from other European delegations—a further indication that many of the delegates were not fully *au fait* with the requirements of the amateurs in their respective countries.

It is perhaps too early to speculate upon the future of international telecommunications conferences, but upon careful reflection and with the experience of Atlantic City to guide us, it seems that the future of Amateur Radio may be better served by every National Society making a supreme effort to send a representative to each succeeding Conference and to seek authority for the representative to be attached officially to his national delegation. In such wise every official Government delegation would be able to consult an acknowledged authority on all amateur matters.

The Atlantic City Conference has again proved that every National Society should work in the closest possible harmony with its licence-issuing authority and be ready at short notice to back up its demands with concrete facts and figures.

* * *

The writer wishes to make it quite clear that the views expressed herein are personal and do not necessarily represent the views of the Council.

J. C.

DESIGN AND CONSTRUCTION OF A UNIVERSAL METER

By A. V. HOWLAND (BRS10269)*

Introduction

THE most necessary measuring instrument in the radio amateur's possession is the "Universal Meter." Unfortunately there is at present an acute shortage of good quality meters of this type and this shortage will almost certainly persist for some time to come.

The object of this article is to present the major features desirable in a Universal Meter and the constructional details of a meter conforming to these standards.

Measuring Ranges

The first essential feature the meter must possess is the ability to ascertain D.C. voltages up to, say, 1,000 volts, in such a manner that any intermediate voltage may be read with a tolerable degree of accuracy. It is impossible to provide any useful accuracy if only one range is provided. The meter should, therefore, incorporate four D.C. voltage ranges as follows: (*a*) 0–10v. (*b*) 0–100v. (*c*) 0–500v. (*d*) 0–1,000v.

The next consideration is the measurement of A.C. voltage. Owing to the circuit design, and the desirability of having several ranges, it will be found convenient to duplicate the D.C. ranges on the A.C. voltage range. One voltage-selector switch may then be used for the selection of both the D.C. and A.C. voltage ranges.

For measuring direct current, the meter should obviously be as sensitive as is possible, but here the general robustness of the finished product must be considered. The highest current sensitivity of the meter would preferably be set at 0–1 mA or possibly 0–0·5 mA.

The highest current range necessary, taking account of the usual functions the meter will be called upon to perform, should be about one ampere. (Actually it will be found that this range is very rarely required, but it is useful for providing a low range "Ohmeter.") The current ranges advisable are, therefore, (*a*) 0–1 mA (*b*) 0–10 mA (*c*) 0–100 mA and (*d*) 0–1 amp.

Current measurements in A.C. circuits are very rarely required, the usual practice being to check continuity and ensure that the correct A.C. voltages are being delivered to various points in the circuit. An A.C. range is, therefore, not provided in the meter described.

No "Universal Meter" is complete without some provision for the measurement of resistance. The usual method, and that used in this meter, of obtaining these measurements is to measure the current passed through the resistance under test by an internal battery of known voltage. The different ranges are provided by altering the current sensitivity of the meter and as many resistance ranges as there are current ranges may be provided. The meter described will, therefore, have four resistance ranges, corresponding to current ranges of 0–1 mA, 0–10 mA, 0–100 mA and 0–1 amp.

A meter is often employed to check continuity in the wiring of a circuit and this may easily be carried out by utilising the resistance range. This practice results in a great deal of unnecessary wear and tear on the instrument, and the necessity to glance at the meter each time the test prods are laid across a length of wiring will prove rather an annoyance. It is more convenient to provide an internal buzzer, connected in the meter circuit in such a manner that the buzzer gives an indication if there is continuity between the test prods.

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Choice of Primary Meter

For the primary measuring instrument a milliammeter is required which possesses a sensitivity equal to the current sensitivity required in the finished "Universal Meter." We have the choice of (*a*) a moving-iron milliammeter or (*b*) a moving-coil milliammeter equipped with a metal rectifier.

The moving-iron type of instrument is cheap and relatively robust, but it possesses the inherent disadvantages of an unevenly divided scale, a low order of accuracy, and excessively poor damping.

The advantages of the moving-coil instrument for D.C. measurements are very well known inasmuch as it has a very high sensitivity and accuracy, excellent damping, evenly divided long scales, and a short time-period. With the addition of a suitably designed metal rectifier the instrument retains all these features and may be used for the measurement of alternating currents. The only disadvantages are that it is rather more expensive and slightly less robust than the moving-iron instrument.

It will be seen from the foregoing that the moving-iron meter is inferior to the moving-coil type for radio work. The "Universal Meter" should, therefore, incorporate a good quality moving-coil instrument as the primary measuring device.

Circuit Details

The theoretical circuit which is shown in Fig. 1 consists of the following components:

Item No.	Number Required	Description.
1	1	0–1 mA. M.C. Milliammeter.
2	1	1 mA Bridge-Connected Instrument Rectifier.
3	1	Main Range Selector Switch: 4 pole, 6 way.
4	1	Voltage Selector Switch: Single pole, 4 way.
5	1	mA and Ω Selector Switch: 3 pole, 4 way.
6	4	D.C. Voltage-Swamping Resistors: ± 1% Carbon Type.
7	4	A.C. Voltage Resistor as above.
8	4	"Current Limiting" Resistors: ± 1% (Carbon Type).
9	3	"Shunt" Resistors (to suit).
10	1	Battery Buzzer: 1·5v.
11	1	Safety Fuse (panel mounting type to fuse at about 60 mA).
12	1	9v. Grid Bias Battery.

Circuit Calculations

The meter in most common use is the 0–1 milliammeter with an internal resistance of 100 ohms. The following calculations will be based on such a meter.

(1) D.C. Voltage resistors :

These may be calculated by means of the formula

$$R_s = \frac{V_r}{I_m} - R_m,$$

where R_s is the series resistance, V_r the voltage range, I_m the current required to effect full scale deflection (F.S.D.) of the meter, and R_m the internal resistance of the meter. The resistances to be used are then as follows :

0–10v.	range,	R_s =	9,900 Ω
0–100v.	,,	R_s =	99,900 Ω
0–500v.	,,	R_s =	499,900 Ω
and 0–1,000v.	,,	R_s =	999,900 Ω

As these values would be rather difficult to obtain resistors of 10 K Ω, 100 K Ω, 500 K Ω and 1 M Ω respectively, may be used without introducing too serious an error. Assuming that the resistances are correctly rated, there will be an error of 1 per cent. on the 0–10v. range and correspondingly less on the other ranges. Their power rating should be not less than ¼, ½, ½, and 1 watt respectively.

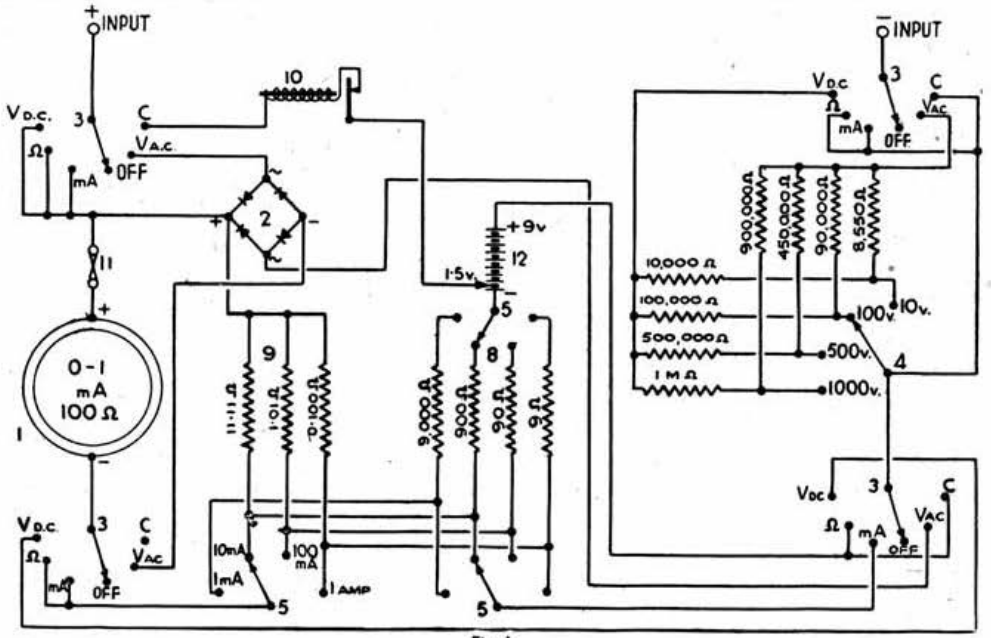


Fig. 1.

Circuit diagram of Universal Meter. Switches marked with identical item numbers represent single units of the same ganged switch.

(2) A.C. Voltage resistors :

The movement of a moving-coil instrument gives a deflection proportional to the mean value of the current passing through it. In the case of an alternating quantity of sinusoidal form the measurement required is the R.M.S. value which will be 1·11 of the mean value. Hence, the R.M.S. value of the alternating current required to cause F.S.D. of the meter will be 1·11 mA.

The series resistors required may then be calculated from

$$R_s = \frac{V_r}{1{\cdot}11I_m} - R_c$$

where all quantities are as before, excepting R_c, which denotes the combined resistance of the instrument with the rectifier connected. The effect of R_c may be neglected on all ranges except that of 0–10v. and the resistors will be :

0–100v. :	90,000 Ω
0–500v. :	450,000 Ω
and 0–1000v. :	900,000 Ω

Unfortunately the resistance of the rectifier-connected instrument will vary with the current passing through it and on the 0–10v. range considerable scale distortion will result. It will be found*, however, that the R.M.S. voltage drop across a rectifier-connected instrument may be expressed by the equation

$$v = ai + b$$

providing the first tenth of the scale reading is ignored. Where v (volts) is the voltage drop across the meter and rectifier due to the passage of a current i (mA), a and b are constants for any one meter and rectifier.

From this equation a value may be calculated for the series resistance R_s, which will cause the meter to read low at every point by a constant amount b. As previously stated, this will not apply to points under the first tenth of the full scale reading. The value of this series resistance will be given by

$$R = 900\left(\frac{V}{I} - a\right),$$

where V (volts) is the R.M.S. voltage that is desired to effect F.S.D. and I (mA) the mean current required to effect F.S.D. of the meter. If the resistance is made equal to this value a scale calibration chart will be unnecessary as the actual voltage may be found by adding a constant amount b to the reading on the scale.

If a *Westinghouse* instrument rectifier be used with a 0·1 mA milliammeter of 100 ohms resistance, the resistance (R_s) necessary to provide the 0–10v. range will be about 8,500 ohms and the constant b will be about 0·43 volts. Readings should not be taken under one volt.

(3) D.C. Current Shunt Resistors :

If the resistance of the meter is accurately known, the following formula may be used to calculate the value of the current shunting resistors :

$$R_{sh} = \frac{R_m}{n - 1}$$

* So far as the author is aware, this is the first time the subject of scale calibration for low range A.C. voltmeters has been treated in this manner.

where R_m is the internal resistance of the meter and n the factor by which the range of the meter is to be multiplied. In the case of an 0–1 mA milliammeter with an internal resistance of 100 ohms the following resistors should be used :

0–10 mA : $R_{sh} = 11{\cdot}11$ Ω
0–100 mA : $R_{sh} = 1{\cdot}01$ Ω
0–1 amp. : $R_{sh} = 0{\cdot}1001\,\Omega$

If the resistance of the meter is *not* accurately known, but is somewhere in the region of 100 ohms, the above shunts may be used and the meter calibrated against others of known accuracy, the shunts being adjusted until the meter is reading correctly.

Assuming neither of these methods is possible, the following procedure may be used : Take a 9v. grid-bias battery and connect the 1·5v. tapping across a resistance of about 1,500 ohms in series with the meter. The meter will then indicate about 1 mA. Now take a length of wire of approximately 11 ohms resistance and connect it across the meter. The reading will then drop. Move the tapping to 9v. and vary the length of wire until the meter shows 0·6 of the first reading. The meter will now read 10 mA at full scale. This procedure is repeated (using the previously shunted 10 mA range) on the 100 mA and 1 amp. ranges. On these ranges the changed resistance of the meter and battery must be taken into account and a simple calculation will show the amount the meter should be set to for the second reading.

(4) " Ohm " limiting resistors :

On this range a voltage is supplied through the meter and the limiting resistors (8) by means of the internal battery (12). These resistors are of such values as to allow the meter to give F.S.D. when the test prods are short-circuited.

When the prods are placed across an unknown resistance the meter will give a reading somewhat below full scale. From this reading the value of the unknown resistance may be calculated or read off from a calibration chart. Differing degrees of sensitivity are provided by simultaneous switching of the meter current range and the limiting resistors.

If R_l is the limiting resistance necessary, V_b the E.M.F. of the internal battery, and I the current set on the meter,

$$R_l = \frac{V_b}{I}$$

In the case of the meter described this gives,

0–1 mA : R_l = 9,000 Ω
0–10 mA : R_l = 900 Ω
0–100 mA : R_l = 90 Ω
0–1 amp. : R_l = 9 Ω

For the 100 mA and 1 amp. ranges the resistance of the battery must be subtracted from these values.

Meter Construction

The general construction of the meter is shown in Fig. 2. The meter consists of an ebonite front panel on to which all the components except the internal battery are mounted. The size of this panel is 9 in. × 6 in. × ⅜ in. thick. The panel is secured to a 20 s.w.g. steel case by means of six 4 B.A. brass screws. The case measures 9 in. × 6 in. × 3 in. deep and contains the internal battery.

All components should be mounted as rigidly as possible and wired up with 18 s.w.g. throughout. The resistors may be held in position by the rigidity of the wiring.

The accuracy of the meter will, of course, depend on the accuracy of the resistances (except where it is used in direct connection), but assuming that the values are carefully chosen, an overall accuracy of ± 2 per cent. may be expected.

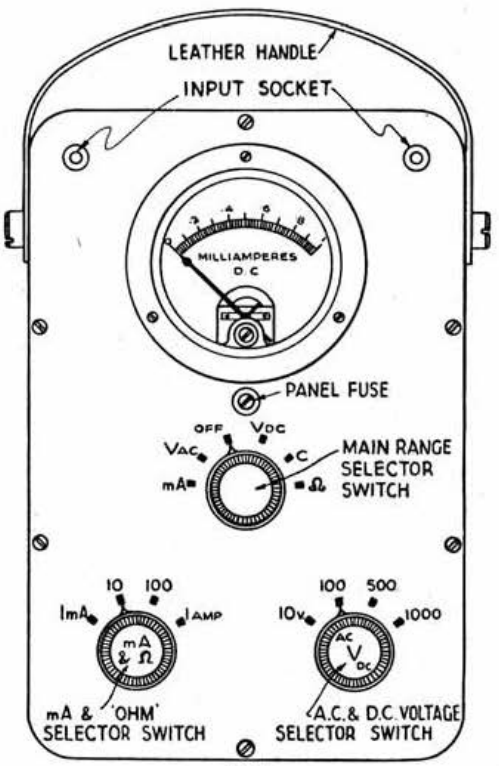


Fig. 2.
Plan of completed meter.

Royal Observatory Standard Frequency Transmissions

We understand that an experimental service of standard frequency transmissions is now being given by the Royal Observatory radio station (call sign GMT), located at Abinger, Surrey.

Although the service is subject to modification from time to time, the main points of interest will be found below :—

Daily, Monday to Saturday inclusive.
09.58 G.M.T. .. Telephony announcement.
10.00–10.15 G.M.T. Unmodulated carrier.
10.15–10.25 G.M.T. 1,000 c/s. modulation.
10.25 G.M.T. .. Announcement of correction factor.

Frequency : 2 Mc/s.
Accuracy : Better than 1 in 10^7.

Further information will be published at a later date.

In Great Demand

The Society's booklet dealing with the issue of amateur transmitting licences was in great demand at the Atlantic City Conference. Copies were handed to a number of Conference delegates who stated it was their intention to consider the possibilities of introducing the U.K. methods in their own country.

Society Representatives return from the U.S.A.

The General Secretary returned to England on the " Mauretania," on July 17, whilst Mr. Lewer arrived last week on the " Queen Mary." A film record of their visit to the United States will be displayed at a forthcoming London (I.E.E.) meeting.

ATLANTIC CITY, 1947. ACT III

THE DISCUSSION CONTINUES—DX OR RESEARCH?

By STANLEY K. LEWER (G6LJ)—PRESIDENT

THE special daily newspaper issued to all delegates at the Conference has ventured to assist them in their task by publishing a glossary of terms used in the several committees. We wish we could afford the space to quote them all in full, for they wittily express the bitter truths and reveal the difficulties which surround us. For our present purpose it must suffice to quote two definitions :

Final Draft.—Term applied to any material that will not last through the next meeting.

Reconsideration.—Something that the Committee does to any Article upon which agreement has been reached.

Even after nine weeks of continuous bargaining there is still a lack of general agreement regarding frequency allocations, and some parts of the frequency spectrum have not yet been brought up for discussion. The broad procedure of the Frequency Allocations Committee (No. 5) has consisted in the successive reconsideration of the many conflicting proposals from the various countries. Sometimes tentative agreement has been reached in respect of certain frequency requirements of one or other of the several Services, but when the problem is reviewed as a whole it is found that further modifications have to be made to what was previously agreed.

This condition of uncertainty still exists (except for the " top " band), and it would be a temptation to the rumourists to give a detailed report of the frequency allocation plan as it stands at present.

The "Top" Band

We reported in the July *Bulletin* that agreement had been reached on the question of an amateur assignment in the vicinity of 2 Mc/s. This agreement still holds at the time of writing, and its precise wording is as follows :

> " In the band 1715—2000 kc/s. countries may assign up to 200 kc/s. for the amateur service, provided the power of the stations does not exceed 10–w. and that no harmful interference is caused to the authorised services of other countries."

At one stage of the discussion, the question was put to the vote as to whether amateurs should or should not be permitted on this band. Seven countries voted *for* and seven *against* and no decision was taken. Subsequently, the proposal just quoted was adopted, but only five countries have since indicated their intention of allowing amateur operation in this band, namely, Austria, Ireland, Netherlands, Switzerland and the United Kingdom.

For and Against

Throughout the Conference, insistent demands have been made on behalf of all the major Services—Fixed, Mobile (Land, Maritime and Aeronautical), Broadcasting (Long-distance and so-called " Tropical "), and Amateurs. Each country has stated its requirements and its views as to what it considers should be an acceptable world-wide plan. While it is probably true that Tropical Broadcasting heads the list in respect of the time spent in argument at the Committee Meetings, each of the other Services has presented the Committee with a difficult and almost insoluble problem. Many long speeches have been delivered by several of the spokesmen, but it is with some satisfaction that we record the opinion that no finer speeches have been made on behalf of any one Service than those made on behalf of the amateurs. Especially we pay tribute to the United States, New Zealand and Cuba.

We must also put on record that certain countries have openly argued against amateur interests, mainly on the ground that they represent only an unimportant minority. These countries have urgent requirements for Fixed and H.F. Broadcasting Services and perhaps also for Maritime and Aeronautical Mobile Services, but as yet they have not experienced any large-scale amateur activity within their frontiers. They therefore deprecate the allocation of valuable frequency ranges to amateurs.

Other countries appear to be suspicious of the motives which give rise to amateur activity and are somewhat perplexed as to how it is possible to effect a satisfactory control of amateur operation. In this respect we may take pride in the fact that in Great Britain there has existed for a very long time a sense of orderliness and mutual confidence between the G.P.O. and our amateurs, and we are determined that this condition shall continue. In the U.S. also, of course, the same confidence exists to a remarkably high degree, a fact which has been of incalculable value at the Conference.

CONFERENCE DELEGATES.
G6LJ and G6CL with Carlos Cordovez, HC1FG (a delegate to the Conference) at the home of Clarence Leeds, W2AIU, Pleasantville, N.J.

Broadly speaking, the Americas are definitely in favour of amateur activity, particularly in regard to the DX bands. As the delegate of Cuba so eloquently stated at a recent Committee meeting, the numerous world-wide amateur contacts are of greater benefit to the world and therefore more fully justified than long-distance broadcasting, because the amateurs freely express their personal interests on the basis of unfettered international exchange, whereas broadcasting around the world is a one-way projection of the biased views of each nation.

Australia and New Zealand have added their support for amateurs, but we confess to a sense of disappointment at the restraint which Australia has shown at times. China is strongly in favour of amateur activity, and India is also anxious to encourage amateurs but is overwhelmed by her needs in regard to Tropical Broadcasting.

Europe regrettably is divided and half-hearted on the question of amateurs, largely on account of the extensive requirements for the Maritime Mobile Service and the multiplicity of the national administrations. The U.S.S.R. continues to press for wide allocations for the Fixed Service to meet her needs for internal communications across the vast expanses of her European and Asiatic territory.

DX or Research?

Right from the early days of Amateur Radio there has been a tendency on the part of legislative authorities to push amateur activity towards the higher frequencies. This tendency still exists to-day. Whenever arguments have been submitted in favour of amateur allocations in the DX bands, some countries—notably France, U.S.S.R., Bielorussia, Ukraine, Morocco and Tunisia—have referred to the proposed new assignments to amateurs in the part of the spectrum above 30 Mc/s. stretching all the way up to 10,000 Mc/s. These countries have considered that the aim of the amateur is no longer to make DX contacts but to carry out experiments and research work in the new V.H.F. regions. France has indeed stated that amateurs have always been in the vanguard of technical progress and that it is highly desirable that they should have adequate frequency space—above 30 Mc/s.

When objections have been expressed against the reduction of the existing amateur DX bands, we have frequently heard references to the compensation that is being offered to amateurs by the opening up of the new band 21—21·45 Mc/s. This is not such a magnificent gesture as some people would try to make out, for it is more correctly regarded as a rational utilisation of a part of the frequency spectrum which so far has not been effectively occupied.

Moreover, the number of active amateur stations throughout the world is increasing at a greater rate than that of any other kind of Service, and it is essential that this be taken into account when planning the spectrum for the years to come.

Violent battles have been fought for the territory between 3·5 and 4·0 Mc/s. The original proposals ranged from a bandwidth of 100 kc/s. to 500 kc/s. exclusively for amateurs. In the course of the prolonged arguments by the Committee it became evident that an exclusive assignment was not going to be generally acceptable, and it was left to a Working Group to draft a satisfactory frequency plan.

The present suggestion is to allow European amateurs to share the band 3·5—3·8 Mc/s. with the Fixed, Land and Maritime Mobile Services. In the American region, the amateur allocation would cover the full band 3·5—4·0 Mc/s. However, it must be stressed that this plan has not yet been discussed by the Committee and further adjustments may be expected. Even the policy of sharing, as against an exclusive assignment, has not been generally agreed.

Europe has also proved troublesome in regard to the 7 Mc/s. band. The present position is similar to that of the 3·5 Mc/s. band. Tentatively the European region is willing to give 7·0—7·10 Mc/s. exclusively to amateurs with an additional 50 kc/s. up to 7·15 Mc/s. to be shared with broadcasting which itself would stretch as far as 7·30 Mc/s. The American region would retain the full width of 300 kc/s. from 7·0 to 7·30 Mc/s. exclusively for amateurs.

There is some variation of opinion on the part of Australia, New Zealand, India and China as to whether they prefer to associate themselves with Europe or with the American region in respect of the 3·5 and 7·0 Mc/s. bands.

The 14 Mc/s. Band

For many weeks, while the argument surged to and fro across other parts of the spectrum, it seemed that there was going to be unanimous agreement of 14·0—14·4 Mc/s. as an exclusive amateur band. With only one exception, all the countries that made proposals here asked for 400 kc/s. Egypt preferred 250 kc/s. Throughout the successive surveys made by the Committee, 400 kc/s. remained firm as the amateur assignment. There was a momentary scare, as we reported last month, but at the time of writing there is a full-scale raid in progress. It is no longer the wail of a distant siren but a vicious all-out attack with H.E.'s, incendiaries, flares and D.A.'s. An attempt is being made to get a landing party ashore to occupy 50 or perhaps 100 kc/s. at the high-frequency end of our band.

All our defences have gone into action. The battle continues. The suspense is acute. Some countermeasures in the form of a shared portion have been contemplated but until the crisis is passed we think it is wise to refrain from making more detailed comment.

So far, the new exclusive amateur allocation of 21·0—21·45 Mc/s. appears to be fairly safe. No decision has yet been finally agreed and until the delegates have written their signatures on the Convention parchment, have packed their bags and are on their way home, we should be on guard against further surprises.

The 28—30 Mc/s. band is likely to be reduced in Europe to 28·0—29·7 Mc/s. so as to make room for Aeronautical Navigational Aids, although in all other areas the full 2 Mc/s. bandwidth will probably be retained.

Above 30 Mc/s. the discussion has been only superficial. An experimental allocational table is now being considered and we foresee some difficult times ahead in combating the encroachment of television.

IGNORE ALL RUMOURS!

Col. Sir Stanley Angwin, who was Chairman of the Frequency Allocations Committee, was obliged to return to England on July 16th. His place has been taken by Col. A. H. Read, also of the G.P.O., while Mr. A. H. Mumford continues as the hard-working spokesman for the United Kingdom in this Committee. Many other delegates of various countries have already left, but many new delegates have arrived to take part in the Plenipotentiary Conference which opened on July 1st and is functioning simultaneously with the Radio Conference.

On July 9th, the Society's General Secretary, Mr. John Clarricoats, G6CL, left Atlantic City and returned to London. The R.S.G.B. as a member-society of the I.A.R.U. continued to be represented by its President, who was fortunate in being able to stay at the Conference for a further period of four weeks. When this appears in print, he also will have arrived back in England.

A final report on the outcome of the Conference may be expected next month. Until then, we repeat the advice already given—IGNORE ALL RUMOURS.

Appreciations

The President and General Secretary wish to place on record their warm appreciations to the many New York, Connecticut and New Jersey amateurs who contributed so greatly to the enjoyment and success of their visit to the United States.

They are particularly grateful to Mr. Hank Lockwood, W2HFS (Hartsdale, N.Y.) and to Mr. Clem Giberson, W2PG (Port Republic, N.J.), who made it possible for them to establish regular contacts with home, and to Mr. Larry Norcross, W2PXZ of Linwood, N.J., who organised local group activities in and around Atlantic City.

AMERICAN JOURNEY

BY JOHN CLARRICOATS (G6CL), GENERAL SECRETARY

This article, the first of a short series, describes some of the places visited and amateurs met by our President and Secretary whilst in the U.S.A. The current instalment traces their steps from New York up to West Hartford.

PICTURE the scene. New York, May 2, 1947. Two Englishmen landing for the first time on the soil of the New World. Strangers in a strange land. Apprehensive perhaps of what lay before them and fully alive to the responsibilities resting upon their shoulders. Those two strangers were the Society's representatives to the International Telecommunications Conference due to open on May 15 in Atlantic City, New Jersey.

The Customs shed, with its fearsome army of efficient-looking officials, a seething mass of coloured porters, a whirl of taxis, and above all the towering mass of the "Mauretania," our "home" since April 26. We had been warned by cable that someone from League Headquarters would meet us but imagine our pleasure and surprise when we discovered at the Customs barrier the familiar face of Jack Paddon, ex G2IS—recently joined member of the A.R.R.L. technical staff. The fact that he had just travelled 120 miles at break-neck speed to reach us in time was not disclosed until after he had seen us safely installed in the mammoth Hotel Pennsylvania.

Only those who have visited New York in recent years can appreciate fully what we mean when we say that life to-day in the city of a million lights is fantastic. No coupons and no queues, with food and clothing in super-abundance. Austerity unknown and free enterprise in full evidence. Most important perhaps is the genuine concern shown by the average American at the economic plight in which the people of the British Isles find themselves to-day.

One feature of our visit which pleased and at the same time caused some embarrassment, was the keen desire on the part of almost every American amateur we met to join the R.S.G.B. this in spite of the fact that they were made aware that the BULLETIN is but a shadow of its former self.

First Contacts with Home

Within two days of our arrival in New York we were able to establish contact with home thanks to the co-operation of Mr. Harry ("Hank") Lockwood, W2HFS, of Hartsdale, a pleasant surburban township 25 miles north of the Metropolis. Our excursion to W2HFS was made doubly enjoyable by the presence of Joe and Norma Moskey who had come down from West Hartford to take over as our guides from Jack Paddon.

"Hank" possesses one of the most efficient 14 Mc/s. U.S. stations it has been our pleasure to visit. The secret of his success lies in the use of an excellent rotary beam coupled to a well-designed rack and panel transmitter.

Our first QSO was with G6AG (Bexley Heath) made within a few minutes of arriving at W2HFS and this was followed immediately afterwards by a two hours' contact with G8TY (Southgate) who immediately went down by car to the "Ciel" ménage a mile away and brought Mrs. G6CL to the microphone. It was then that we realised—if we had never realised it before—that Amateur Radio stands head and shoulders above all other hobbies. For what other hobby can annihilate distance in an instant and bring together families separated by 3,000 miles of ocean?

W2HFS, HARTSDALE, NEW YORK.

Joe Moskey, W1JMY, Assistant Communications Manager, A.R.R.L., Norma Moskey, W1MUW, and Stanley Lewer, G6LJ, at the home of "Hank" Lockwood, W2HFS. It was from this station that G6LJ and G6CL made their first contacts with home two days after landing in New York.

Seeing the Sights

Later in the week and under the guiding influence of Dr. Yardley Beers, W2AWH, and his wife, we were given the opportunity of seeing some of the outstanding sights in New York. The view from the Empire State building—from which FM transmissions are now taking place—is something that cannot be described in words. But perhaps the most interesting feature of our week in the heart of W2 was a steamer trip round Manhattan Island, a journey of 40 miles. Obscured by fog when we arrived, the river trip gave us our first real glimpse of the famous down-town sky-line, and provided us with an excellent opportunity of seeing the "Mauretania" begin her first post-war crossing to England as a passenger liner.

The subsequent arrival in New York of Ed. Tilton, W1HDQ, V.H.F. Editor of "QST" paved the way for a series of never-to-be-forgotten contacts. W1HDQ began by introducing us to another prominent 6 meter enthusiast, Fred Lester, W2AMG, who, in turn, escorted us to Rockefeller Centre and Radio City. Radio City is a show place visited daily by many thousands of sightseers but we were fortunate in being taken "back stage." At the conclusion of that visit we were whisked away by subway and car to the home of W2AMG where we were given our first chance to work on 6 metres. As the result of one contact made that evening we became acquainted with Gay Milius, W2NJF, Assistant Director Hudson Division, A.R.R.L. It was Gay who later introduced us to Steve Van Esen, W2OXD, of the *Hammarlund Company*. During our visit to that company we were taken on an extended tour. Imagine it, if you can—acres of floor space given over almost exclusively to the production of communication type receivers. Indeed a sight for sore eyes!

Whilst in New York we were given an opportunity of visiting the recording studios of WOR (Mutual Broadcasting Co.), where our host, "Hank" Lockwood, is studio director. The most elaborate

precision equipment is used for recording, and every programme timed to a split second. In a country where all broadcasting is sponsored we soon discovered it is essential that every advertiser shall have *exactly* the amount of time he pays for—no more, no less.

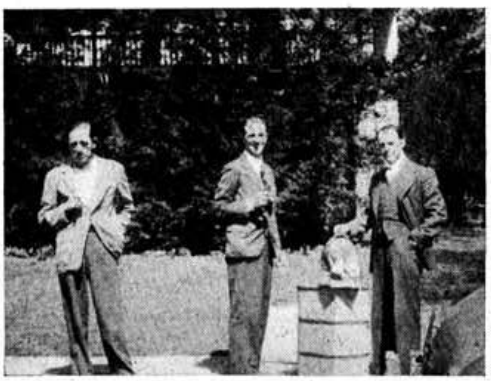
It was during the second of our three visits to the home of W2HFS that our President experienced the thrill of speaking to his wife, who had been taken by car to the station of G8TY.

En Route to West Hartford

Thanks to Mr. Van Esen our journey to West Hartford, Conn. was made especially pleasant by his kindly gesture in driving us there by road. *En route* we met several members of the Westchester Amateur Radio Association, whose Headquarters are in White Plains.

Whilst passing through Cheshire, Conn., G6CL remembered he had promised Dr. Neff, W1AH, during a recent QSO that he would call and see him if circumstances permitted. Fortunately the worthy doctor was at home with the result that we were given an opportunity of inspecting his station. Like most of the other stations we visited, Dr. Neff employs a rotary beam for 14 Mc/s. operation. His log of DX proved that it worked!

W1EH, WEST HARTFORD.
Our President, G6LJ, visits K. B. Warner, W1EH.



W2OXD, WHITE PLAINS, NEW YORK.
Steve Van Esen, W2OXD, Advertising Manager to the Hammarlund Company, with G6LJ and Gay Milius, W2NJF, Assistant Director, Hudson Division, A.R.R.L., and President of the Westchester Amateur Radio Association.

After a delightful run through New England country we finally reached the home of Mr. K. B. Warner, W1EH (Managing Secretary of the A.R.R.L.), in West Hartford, eight days after landing. At the home of "K.B." we met several other members of the League staff, including Col. Ed. Handy, W1BDI (Communications Manager), and Mr. Jack Paddon.

League Headquarters

The following day was spent at League H.Q.'s, where we had the great pleasure of meeting such well-known personalities as A. L. Budlong, W1BUD (Senior Assistant Secretary), John Huntoon, W1LVQ, and LeRoy Waggoner, W1PEK (Assistant Secretaries), George Grammar, W1DF (Editor, "QST"), David Houghton (Circulation Manager), Don Mix, W1TS, and Byron Goodman, W1DX (Technical Assistants). We also renewed acquaintanceship with Ed Tilton and Joe Moskey, our guides in New York.

The League is operated from a two-storey building in the centre of West Hartford and with few exceptions, the staff of nearly 70 live in that town. We were given every facility for examining the methods adopted by the League in handling a membership of some 75,000.

Many of the problems which beset our own H.Q.'s are common to the League. They however possess the great advantage of having a large staff to cope with the work and sufficient space to handle the vast publications business which is an important feature of their activities.

We were shown the museum which contains many historic exhibits, including the original gear used by Paul Godley when he first logged American amateur signals in Scotland. Parts of the late Hiram Percy Maxim's original station are on display, whilst above Mr. Warner's desk hangs the original "Wolf hong."

During our visit to West Hartford we were entertained for lunch by the senior members of the League staff under the chairmanship of Mr. Warner, who extended to us a warm welcome on behalf of the President and Directors.

A film record was made of this unique occasion and it is our intention to make this available for display at a later date.

Maxim Memorial Station W1AW.

Following the lunch we were taken by car to visit the Maxim Memorial station W1AW, located at Newington, some seven miles from West Hartford. Space limitations will not allow us to give a detailed description of this outstanding station, but we would mention that as its main activities are intended for home members of the League its aerial systems are so designed as to give maximumr adiation in a

A.R.R.L., WEST HARTFORD
Our President (front left) with some of the 70 members who form the A.R.R.L. staff. Ken Warner, W1EH (Managing Secretary), extreme left, A. L. Budlong, W1BUD (Assistant Secretary), fifth from the left back row. George Grammar, W1DF (Technical Editor, QST), extreme right back row. Others in the group include Ed. Handy, W1BDI, Ed. Tilton, W1HDQ, Byron Goodman, W1DX, and Jack Paddon, ex-G2IS, holding car plate.

westerly direction. It is for this reason of course, that, in spite of rhombics and a full kilowatt of power, W1AW is seldom heard in Great Britain.

The station is operated on the shift system by a team of six qualified operators who work under the general direction of Col. Handy.

The location appears to be ideal except that the receivers are subjected to a good deal of ignition noise from automobiles passing along the main road.

Code practices and news bulletins are regularly transmitted and from information gleaned on the spot these seem to be well received in most parts of the United States.

V.H.F. Activities

Whilst in West Hartford we were fortunate enough to visit Ed. Tilton's world-famous V.H.F. station, W1HDQ, located on Seldon Hill. It was from here, last winter, that he transmitted 6 metre signals to England. Enthusiasm for 6 and 2 metre work is growing apace throughout the Eastern States, in fact it is impossible to travel very far without passing a rotary beam for either or both of these bands. Many old-timers have almost deserted the DX bands for the V.H.F.'s and their numbers are increasing daily. Ken Warner for instance, whose pioneer work has been recorded in the archives of Amateur Radio, is one of many who devotes more time to 2 metre work than to DX although he possesses a 20 metre rhombic !

Surplus Gear

Vast quantities of ex-Service transmitting and measuring gear have been made available to the U.S. amateurs at very reasonable prices. Surplus 7 Mc/s. crystals have been selling at about 2/– each but they had all gone by the time we arrived ! Several stations now boast a BC610 transmitter. If you don't know what that is listen to some of the D4's in Germany ! We were somewhat surprised to discover that these equipments are often used for across town work on 75 metre phone ! Phew ! !

Appreciation

Before concluding this part of our story we record our sincere thanks to all who contributed in any way to the pleasure of our stay in New York and West Hartford.

Next month we propose to switch our story to Atlantic City and describe some of the incidents and meetings which took place there whilst we were attending the Conference.

(To be continued).

M.O.S. Surplus Transmitter Schemes

By C. H. L. EDWARDS G8TL

THE second M.O.S. scheme was heavily oversubscribed, with the result that only about 50 per cent. of those who placed orders were successful in obtaining surplus transmitters. Naturally those who were unsuccessful feel very disappointed but the writer and his colleagues on Council hope they will all accept the position in the true " ham spirit " and will not complain of the good fortune of their neighbours.

The general condition of the gear offered was quite good although some damaged equipment, with parts missing, was distributed. In many instances sets were received complete with valves. Especially was this the case of sets which had only recently been in service. On the other hand similar sets in brand new condition had not been valved up. Once again it was the luck of the draw. Most of the sets collected from the Aldenham Depot were without transit cases due to the decision of " higher authority " that all such cases were to be retained.

In response to numerous requests from members whose requirements were not met from the first and second distributions the writer has again visited the Ministry—after having first ascertained that the C.R.'s would be prepared to co-operate in handling further issues—but up to the time of writing no definite decision had been reached. The matter is, however, due to be discussed again this month and if a successful decision is reached, readers will be advised promptly.

Some members appear to be under the impression that the Society is only interested in the purchase of transmitters, but this is not the case. For the past two years efforts have been made to persuade the Ministry to make available to Society members such items as receivers, oscilloscopes, frequency meters and measuring instruments, but so far our efforts have been unsuccessful. The Ministry has frequently pointed out that members can attend the public auctions of surplus radio and electronic equipment and purchase any of the material offered, provided they are in possession of a catalogue and ticket of admission. Details of all public auctions are published from time to time in the National and local press.

It seems desirable once again to point out that as the Society is not a trading concern it cannot make bulk purchases on behalf of members. If such an arrangement had been permitted under the Articles of Association it would have been carried into effect when the Ministry was first approached.

The writer and Dr. G. F. Bloomfield, G2NR, thank the C.R.'s for replying to their recent circular regarding a possible third issue and for their helpful advice and criticisms. The C.R.'s and T.R.'s are also thanked for their patience, understanding and help in dealing with the first two issues and for the excellent manner in which they all co-operated.

Call Sign at an Alternate Address

The G.P.O. has agreed that when, for example, an English amateur operates from, say, Scotland, he will use the suffix/A in addition to the prefix GM. As an example if G2AB moved temporarily to Scotland he would use the call GM2AB/A. This arrangement will in future apply throughout the British Isles, including the Channel Islands (GC) and the Isle of Man (GD).

THE B.E.R.U. CONTESTS, 1947

SOUTH AFRICA AND NEW ZEALAND WINNERS

AFTER the best part of a decade's absence, the ever-popular B.E.R.U. Contest has once more come and gone. The 1947 event must be proclaimed a great success. Many entrants from all corners of the Empire have written in appreciation of the enjoyable, albeit strenuous, hours of competitive operating which it afforded. As a result of certain conclusions reached in 1939 after analysis of the last pre-war B.E.R.U. Contest, changes were made in the zoning system for 1947, with a view to evening up the chances of the various Dominions in the scoring. How far this extremely difficult object was achieved will be seen from the table of scores. A feature of most of the critical and appreciative letters received from entrants was that each one considered his own particular country was unfairly penalised.

Due to post-war conditions still prevailing in most areas, it was not possible for the usual publicity to be given to the event and the Committee, therefore, decided to accept all entries up to the date of checking. Particular appreciation is due to those pre-war participants who assisted in publicising the event. It is to be hoped that the years now ahead will see the B.E.R.U. Contest back in its old traditional prominence in the amateur's calendar.

The much discussed, used and mis-used V.F.O. was seen at its best *and* worst during the Contest. Many of the rarer stations soon dropped into the practice of listening on their own frequency only, never appearing to alter the receiver tuning, and whilst the stock of V.F.O.'s piled up, remained there. Those with crystal control on even quite closely neighbouring frequencies just wasted their time calling. A certain much sought-after DX station found so many calling him each time he went over that he soon dropped giving acknowledgments and one knew he had got his report only by observing that the next man he worked got the next serial number!

It was surprising to note how many G stations were loathe to give up their "CQ BERU" habits. To them may we say that among the top half-dozen high-scoring G's probably not more than a dozen "CQ's" were put out during the whole contest, and of those dozen, probably only two or three received an answer.

Several would-be competitors in British-occupied Germany, Japan, Italy, etc., were disappointed as no provision had been made in the Rules for them to compete. It will be appreciated that these Rules had to be prepared many months before the event and it was impossible to foresee what support would be forthcoming from members in these areas. The Rules for the first post-war B.E.R.U. Contest were somewhat in the nature of an experiment on the old lines; those for the 1948 event may be considered in the light of present-day requirements.

The Senior Event

Conditions in the Senior Contest were exceptionally good and most of the activity centred on 14 and 28 Mc/s. 7 and 3·5 Mc/s. were almost entirely neglected owing to the greater ease with which contacts could be made on the H.F. bands. To encourage greater multi-band activity several entrants suggested a slightly revised scoring system. The idea appears to be a good one and will be given due consideration when formulating the Rules for the next Contest.

Conditions on 28 Mc/s. on the Saturday morning of the event were excellent and an unprecedented number of ZL's filled the band for several hours on end.

The Senior Event was well supported. The 198 logs received (including 31 check logs), however, represented only a small proportion of those known to have been taking part.

The Junior Event

This Contest suffered rather badly owing to comparatively poor conditions and considerably less support. Those who put in their full 30 hours felt it had been very hard work. Contacts were much harder to come by than in the Senior Event and much patient searching and calling was necessary between each.

It is presumed that many intending entrants did not send in their logs due to their low scores. Only 65 logs (including 28 check logs) were received.

The Receiving Contest

Once again the listening membership did not react to a contest organised in their interests. It is disappointing to think that out of a membership of 8,000 Receiving Stations, only seven could register enough interest to send in their logs. A contest such as this is the best practice for intending licensed operators. Whether the Committee decides to organise further receiving events will depend upon the response to the note which appeared in the July issue of the BULLETIN. To the seven entrants who sent in fine and carefully prepared logs, the Committee wish to tender their thanks and regrets that, owing to the poor entry and the decision reached regarding fuel restrictions, the Receiving Contest has been declared void.

Logs in this event were submitted by BRS250, 1535, 2763, 6604, 12828, 15024 and BERS195.

In view of the uncertainty of many British contestants as to their obligation to observe fuel restriction hours and the lack of uniformity of these restrictions in different areas of the British Isles, the Council has reluctantly decided that it would be unfair to make awards to British Isles entrants this year

Check Logs

The Committee is indebted to those who sent in useful check logs.

Results of the Senior Contest

Mr. R. G. Henwick, ZS2AL, of Port Elizabeth, was an easy winner with a total of 1,864 points obtained from 382 contacts with 21 out of the possible 29 zones. 159 British Isles stations were worked. His transmitter consisted of a multiple exciter with E.C.O. and 8 crystals and separate finals: 8005 on 7 Mc/s. and 813's on 14 Mc/s. and 28 Mc/s. The receiver in use was a National NC100. An end-fed Hertz aerial was used on 7 Mc/s., centre-fed ½-wave on 14 Mc/s., and a three-element rotary on 28 Mc/s. Only 6 comparatively "local" stations were worked on 7 Mc/s. Of the remaining stations about an equal number were worked on 14 Mc/s. and 28 Mc/s., 27½ hours of operating raised this outstanding score. Well done, O.M.—an excellent performance!

Mr. H. V. J. Powell, VQ3HJP, of Dar-es-Salaam, placed second with 1,350 points scored in just over 28½ hours operating time, also worked 21 zone areas. Transmitter: V.F.O.—6L6—6L6—813 feeding a 67 ft. single, nearly vertical, wire. An eight valve superhet was used for reception.

Mr. W. A. Wilson, ZL1BY, of Auckland, scored 1,225 points entirely on 14 Mc/s. in just under 30 hours operating time. He used a 6V6 and 807 combination driving a H.F. 100 with 100 watts input in conjunction with a Hallicrafters SX16 receiver. Three aerials were used: Vee beam, two-element fixed beam and a two-wave Zepp.

A complete list of Dominion entrants in order of merit appears below:—

Position	Call sign	Points	Position	Call sign	Points	Position	Call sign	Points
1	ZS2AL	1,864	31	VS9AN	716	61	VE3VD	402
2	VQ3HJP	1,350	32	VK3KX	705	62	ZB1E	400
3	ZL1BY	1,225	33	ZL3AZ	698	63	VE1KN	378
4	VK2EO	1,118	34	VQ2GW	688	64	ZS5BW	377
5	ZS6CT	1,104	35	VK4EL	680	65	VE3JK	369
6	VK2ADE	1,101	36	VK5JS	670	66	VO6K	364
7	VK2DI	1,063	37	ZS2G	669	67	VE1AQ	356
8	ZS5U	1,054	38	VO6U	664	68	ZS1AN	354
9	ZB1AD	1,044	39	VE3IJ	638	69	VK2AHM	352
10	VU2LR	1,010	40	ZS1M	620	70	VK7JT	347
11	VE7ZM	994	41	VK3PG	607	71	VE3JT	344
12	VK2JX	987	42	VS1BX	603	71	VQ2JC	344
13	ZS2Y	967	43	ZL4CK	599	73	VE1EA	327
14	VK6RF	959	44	VK2RA	588	74	VE1DB	306
15	ZL4BQ	933	45	VK5NR	582	75	VK5JT	298
16	ZL2FA	929	46	VE7ZZ	581	76	VE1PQ	296
17	VS1BU	920	47	ZS6BT	556	77	VE3ADV	295
18	VK4HR	903	48	ZL3JA	550	78	VP8AD	294
19	VE1EP	868	49	ZS2AW	537	79	VE3QB	253
20	ZD4AB	841	50	VE5AT	530	80	VE6EO	244
21	VE3KE	840	51	VE1BV	514	81	VE1EK	238
21	VK4RC	840	52	VK5WG	508	82	ZL3GR	237
23	VS2BJ	812	53	ZL3BJ	492	83	ZS1AU	214
24	VK2QL	791	54	ZL2MR	491	84	VO1D	207
25	ZL1GX	786	55	VK4CG	452	85	VS6AA	187
26	VK3HT	769	56	ZE2JI	441	86	VQ8AF	137
27	VU2CW	766	57	VK5RX	439	87	VE3AEJ	110
28	VQ8AD	752	58	VK3CZ	422	88	VK3ABA	60
29	VE3BCO	729	59	ZS6DZ	410	89	ZL1MT	30
30	VK2AHA	724	60	VE1HG	404	90	VK7LJ	15

British Isles members who sent in logs were as follows (claimed scores in brackets):—

G2AAU (44), AO (649), BQC (284), CNN (486), DM (715), DU (502), EC (1,145), HNO (504), IM (257), IO (376), IX (642), LC (381), PL (1,514), QY (366), VD (836), VV (486), WW (1,044), G3AZ (814), DT (279), GF (331), RP (60), SB (285), VA (619), WP (171), G4AR (737), IN (713), JZ (720), LX (110), MU (357), G5BM (828), BT (509), CI (305), CW (924), DQ (853), FF (678), MR (453), MY (911), ND (762), QU (306), RF (349), VB (1,076), VU (1,167), WI (534), WM (559), WP (1,558), XV (304), G6CJ (1,349), CL (406), GH (356), GN (839), OY (650), PR (321), RB (836), RC (760), RH (1,428), ZO (1,409); G8IG (825), IH (782), JR (175), KP (884), KS (864), KU (143), ON (689), PB (483), PX (105), QY (530), QZ (782), RL (533), TK (190), GM3AFB (176), 4FK (281), 5IR (230), 5SL (345), 8SQ (237); GI6YW (245), GW3ZV (1,047), 4CX (554).

The following stations submitted check logs:—

G2AIW, YL, 3AGN, ALY, GX, HK, 5RM, 6LB, XS, 8HH, IL, VE1EV, QZ, 2WK, 3QD, VK2HZ, 5BR, DQ, IT, LD, MP, LU, 7LZ, 2PV, 3MR, VS7EV, VU2AM, BC, 7BR, ZE1JO, ZL2OU.

Results of the Junior Contest

Mr. A. F. Frame, ZL4GA, of Dunedin, well known on the "DX bands," won the Junior Event with 828 points consisting of 150 contacts with stations in 13 zone areas, including some of the "rarer" ones, such as VR2, VR5, VS6 and ZM. Most of his contacts were made on 14 Mc/s., only four being effected on 7 Mc/s. His transmitter consisted of a 6C5 followed by a 6K6 buffer/doubler and 807 final with 23 watts input. Aerials for 14 Mc/s. and 28 Mc/s. were a Vee beam and end-fed Zepp., and a vertical on 7 Mc/s. The receiver in use was an AR77.

Mr. C. C. Newman, VS9AN, of Aden, who was second with 732 points, worked 14 zones. He also used an 807 in the final feeding a half-wave Windom on 14 Mc/s. This aerial was also used on 28 Mc/s. The receiver was an AR88.

Ft./Lt. J. M. Railton, ZB1AD, of Luqa, Malta, scored 658 points representing 180 contacts (including 152 with "G") in 15 zones. Ft./Lt. Railton, known at home as G8AB, ran a PT15 as P.A. on 14 Mc/s. and doubler on 28 Mc/s. His aerials consisted of 1½-waves on 14 Mc/s., and ½-wave on 28 Mc/s. He employed an AR88 receiver.

Dominion entrants, in order of merit, were as follows:—

Position	Call sign	Points	Position	Call sign	Points	Position	Call sign	Points
1	ZL4GA	828	8	VP8AD	302	15	VK2AHM	171
2	VS9AN	732	9	VE1EK	279	16	ZS1AN	156
3	ZB1AD	658	10	ZS2Y	273	17	VK3NK	143
4	ZD4AB	647	11	VS7EV	252	18	ZL3JX	109
5	XZ2EM	440	12	ZE2JI	245	19	VE7ZM	104
6	VK4RC	353	13	ZS6DZ	219	20	VE3JK	30
7	VK5RX	305	14	ZS5BW	186			

British Isles members who sent in logs were as follows (claimed scores in brackets):—

G2AVP (199), DHR (196), DM (189), DU (73), QT (304), QY (315), G2VV (118), 4JZ (245), 5DS (104), VB (351), 6BB (86), PR (119), G6UR (30), 8IL (469), VR (343), WF (388), GM4FK (74).

The following submitted check logs:—

G2LC, YL, 3ALY, HK, 5QU, WI, 6AH, GH, XS, 8ON, UD, GM3UU, 4CX, G16YW, VE1EA, 3BEO, QD, VK2ADE, 3MR, 5DQ, LD, JS, VU2AM, BC, 7BR, ZL3BJ, ZS1BF, IL.

Welcome to Membership

We think home members will be pleased to hear that as a direct result of the visit of our President and General Secretary to the U.S., the following are now members of the R.S.G.B.:—W1AH, W2AIU, AMJ, AQP, ATV, AWH, AWR, BYM, CGP, DDV, DYR, EGM, FLO, FMQ, FXN, HEH, HEJ, HFS, JPX, JXH, LHN, LS, MI, NJF, OXD, OXX, PG, PIN, PWP, PXZ, QCL, QCM, RDK, RGP, SAI, SAS, SKI, W3AGV, BDY, BES, BXE, BYF, CHH, CPV, EM, EQA, FLH, FUF, GHD, GRS, GYV, HFD, IXN, JBC, JSU, KT, LUA, MFM, NAH, PN, W4BRB, HC1FG, VE2BE, C1KT.

Stamp Collectors

Ex-members of the now defunct R.S.G.B. Stamp Club may be interested to know that Mr. L. W. Blick (BRS7043), 46, Betstyle Road, London, N.11, is Secretary of the Bourne Stamp Exchange. There are no fees, charges or subscriptions. Anyone interested should write to Mr. Blick for full details.

The G. P. Three

We regret that, due to an oversight, an article bearing the above title was published in our last issue before certain obvious errors and omissions had been corrected. Those members who drew our attention to the mistakes are thanked for their interest.

Taylor Electrical Instruments Ltd.

In the advertisement which appeared in the July issue of the BULLETIN, it was stated that the sensitivity of the instrument described was 100 ohms. This should have read 1,000 ohms.

THE MONTH ON THE AIR

By A. O. MILNE (G2MI)*

Bad Manners

IT is inevitable that the large increase in actual numbers of radio amateurs should bring an increase in the number of "black sheep." Although the actual percentage may remain the same, an altogether erroneous impression can be given if the said "black sheep" are particularly active on the air.

There has been a noticeable improvement in the quality of signal to be heard on our bands. Most of the "Service types" have discovered that what is good enough for military communications is not good enough for the amateur bands. Nearly all the "buzz-saws" and "dicky birds" which lightened our dull moments soon after we re-started have now been cleaned up (or shot), although there is a lot of very indifferent and almost unreadable Morse to be heard. We assume that is what it is intended to be! The most disturbing manifestation is in the personal conduct of one or two operators who seem to treat ham radio as a land line telephone circuit. We recently heard one individual lose his temper on the air, while another made quite outrageous statements about other amateurs. Clearly this sort of thing cannot be tolerated. If the neighbouring amateur fraternity cannot deal with these outbursts then, obviously, it is for the Post Office to take a hand. Amateurs are very jealous of their good name and reputation. This unpleasant business must stop; or be stopped!

Notes and News

VU2AJ tells us that vertical aerials are very popular in India. Judging by the way some of the VU signals roar in, they seem to work very well. He mentions KG6AV on 14,180 and 14,225, and HS1AL on 14,320 as worth chasing.

VU7BR reports four stations as being active in Bahrein, *viz.*, VU7AA (ex VS8AA), VU7AB, VU7JU and himself. All QSL *via* R.S.G.B. HZ1AB is about 30 miles from Bahrein on the Arabian mainland. All other HZ calls appear to be "phoney."

GM6MD is one of the lucky ones who has contacted ZK1AB, giving him his first GM. Just for a joke he asked him to send some sand from the beach with his QSL card. Sure enough along came a little cellophane envelope containing "Sand as per request"! 'MD has worked some very nice DX despite having his hands pretty full with the GM QSL Bureau.

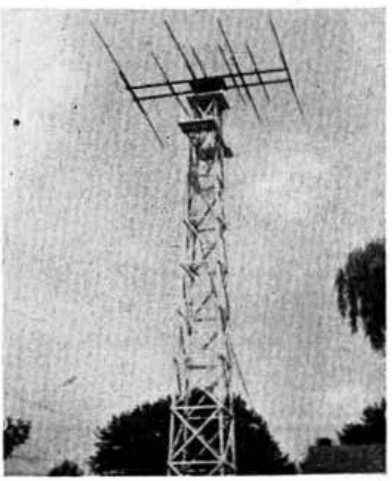
VS6AL (Mr. A. N. Braude, c/o Hong Kong Telephone Co., Exchange Building, Hong Kong) has taken over the VS6 QSL Bureau from VS6AA, who expects to return home shortly.

G3BYF, of Maidstone, left for South Africa on July 22 and hopes soon to be up with a ZS5 call. G3CO gives PK2RK as c/o Radio P.T.T., Solo, Java. He recently worked XF9G who said he was on a freighter but gave no details. G5CI continues to raise the DX and offers VP9K 14,030, KS4AC 14,030, KS4AE 14,025, AC4BC 14,105, who says he is under cover, FQ3AT 14,090, and UJ8AD 14,045 in Stalinbad. VS1BX is now back home. QTH 79 Blinco Road, Cambridge. VQ6HOS has been in hospital and is also now on his way home—another rare one we missed!

ZD2KC is active on 28 Mc/s. He operated for a short time as ZD2K, hence the QSO's some people had with this call after G3BRH (the original ZD2K) had left. ZD2KC says 100 per cent. QSL's are on their way. D5 calls are now being issued in the French zone of Germany but we have not seen any cards yet.

G3IY says ZE2JH is very keen on working G's. He is on 14,110 between 17.00 and 20.00 G.M.T. 100 per cent. QSL. He says VR6AA seldom listens on his own frequency. He doesn't need to! VFO's please note. He also tells us that 6AA uses 14,346 for C.W. and doesn't listen on that frequency either.

Here are some useful QTH's from an American S.W.L., Mr. Phil Bates of Philadelphia. VP4TJ, Electronics Office, Navy 117, c/o F.P.O., N.Y.C. VP4TM, Box 431, Port of Spain, Trinidad. VP5AL, Box 85, Kingston, Jamaica. FA8DX *via* W5KPI. VP6ZI, Box 260, Barbados. CN8EA, 1252 A.A.F.B.U., A.P.O. 194, N.Y. FF8FP *via* W2LFI. C8YR, Box 73, Laochunmia, Kansu, China. CT2AB and CT2WX, A.P.O. 406, N.Y.C. YN1ZK, Box 96, Managua. VP4TU, 155 A.A.C.S. Squadron, A.P.O. 865, c/o P.M., Miami, Florida.



John Power, W2QKE, of Trenton, N.J., uses these 10 and 6 metre rotary beams to push a signal into DX ocalities on both bands.

BERS195 has had a card from LZ1XX. Says LI1A gives QTH as Homs, QSL *via* R.S.G.B. Sorry, O.M., we haven't the pleasure! KM6AA and AB are both c/o P.A.A., Midway Is.

G8PO has worked J4AAS for the first G-J 'phone QSO. Any claimants? Date was July 17.

Mauritius

We had an unexpected but none the less welcome visit recently from VQ8AK who brings us some news of the amateurs in that far-off island. VQ8AB is in Chagos and is crystal controlled on 14,115 and 14,325. He is operator of the Met. station there under the call sign VRS7. VQ8AS is also on Chagos using a single 6L6 run from batteries.

VQ8AD (14,070) uses a pair of 807's with 6L6's in class "B" as modulators, 132 ft. aerial and an H.R.O. VQ8AE has a similar rig but is V.F.O. VQ8AF is the island's eldest amateur using 50 watts and is c.c. on 14,110 C.W. only. VQ8AK had a fly-power transmitter using one watt to a single 1Q5GT with which he worked VU7BR. He is now in Canada.

Sudan

ST2KA is on his way home, but ex-G3VI is on with the call ST2FT. Ex-G2FKN is also there and will be active soon. ST2AM is in Egypt. 2KA is running a pair of PT15's at 90 watts and wants QSO's with Grantham, Swindon, Chippenham and Weston-super-Mare. He hopes to be working on 5 metres soon.

* 29 Kechill Gardens, Hayes, Bromley, Kent.

THE MONTH ON FIVE

By W. A. SCARR, M.A. (G2WS)*

BETTER and better! Although June broke all previous records for conditions on the band July produced even more startling results as new countries heard or worked were added to our lists. Throughout the month it was a case of "which countries will come up to-day?" and there were few occasions when signals from the Continent were not audible at some time during the evening.

July 26, was undoubtedly one of the best days. With very little warning, HB9BZ and HB9CD, suddenly came through on phone at great strength about 18.00 G.M.T. The Italians soon followed with I1AY on C.W. and several others on phone. Shortly afterwards, French stations F9BG and F8SN were heard and by 19.00 G.M.T., PA0PN added yet another country! Incidentally, one or two reports indicate that all these countries were best received with aerials beamed East and West. Further confirmation of this would be welcomed.

The majority of the European signals are to be found between 58·4 and 58·6 Mc/s. and in the London area particularly, it is a pity that so many G stations persist in operating on phone between 58·5 and 58·6 Mc/s., so spoiling the chance of DX for the others. With so much activity on the band, a fair distribution of signals over the 1500 kc/s. available is the only way to avoid serious QRM—yet the top half-megacycle still remains practically unused.

Field Day

Excellent conditions and favourable weather, helped to make the first Field Day (July 20) a great success. Many portable stations achieved real DX and, in pleasant contrast to the pre-war events, there were plenty of stations to try for all day long. The second Field Day, which is quite a separate event but under the same rules (see June BULLETIN), will take place on Sunday, September 7.

Reports

The appearance on 5 metres of ZB2A (S/Ldr. R. A. Butterworth, R.A.F. Station, New Camp, Gilbraltar), provided one of the thrills of the month. When the band first opened up, he experienced trouble with his transmitter, but on July 16 and 17, he logged G3TN, 4LU, 5BY, 5XV, 5ZT, 6DH, 6LK, 6SQ and 8TS. By July 22, when conditions were again favourable, the transmitter was in good order and ZB2A worked G2XC for the first G/ZB2 contact. On the same day he worked G8UZ. Other G contacts have been made since. ZB2A is using a long-wire aerial for reception and a 3-element beam with 30-watts to an 807 in the final.

G5ZT (Plymouth), a new-comer in the far West, has a 4-element beam, 300 feet above sea-level, and uses an 808 final. During his first week on the band, contacts were made with G2VH, 3HW, 2NM, 2XC, 5MR, 6VX, 6LK, 3AAT, FA8IH and I1AY, whilst on July 23, OK4ID was worked on phone with signals peaking at S9 both ways.

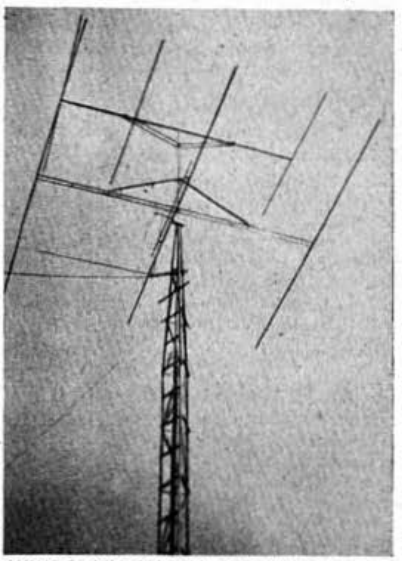
G8GX (Northwood Hill), commenting on an increase in listening activity, reports having received several useful logs from BRS members. Many other 60 Mc/s. workers would welcome such reports. 8GX has recently contacted ON5G and ZB1AB.

G5MQ (Liverpool) comments on the rapid changes in conditions experienced at the end of June. A few minutes after he had worked OK1AW on one occasion, the whole band went dead and even the usual "sked" stations failed to appear.

G3DT (Darlington), brother of G2IQ, was persuaded (!) to get on to five at the end of June and hooked OK1FF on June 30 as his second QSO on the band. He is using 807's and a long-wire.

G6MN/A (Worksop) worked many portable stations during Field Day. His recent G-DX has included G2NH, 4LU, 5BY, 6VX and 8JO (South Shields).

G3ASC (Oswestry) has been very active with a TBY8 Walkie-Talkie connected to a 2-element beam. The rated output of the set is 0·5 watt and the actual power used was somewhat less; nevertheless, contacts have been made with many semi-DX stations including G5MQ (Liverpool), 5LJ (Sutton Coldfield), 2NV (Stourbridge), 8KL (Wolverhampton), and G8QX/P (Malvern Hills).



WIHDQ, SELDON HILL, WEST HARTFORD.
The beam used by Ed. Tilton, WIHDQ, when his 6 metre signals were heard last winter in England.

SM5FS (near Stockholm), reports excellent conditions on July 10 and 11. G6DH and G5BD were worked and HB9BG heard. SM5FS is active on 58·6 and 59·4 Mc/s. and is anxious to work other G's.

ON4PW (Antwerp) states that 5-metre activity is increasing in his area and in Flanders generally. He gives details of ON4IF's station, which is now being heard regularly in this country. The "shack" is at the top of "the highest public building in Europe" and the aerial 300 feet above ground. This is the "Torengebouw" in Antwerp—a building with 24 floors. ON4IF uses 50 watts to an 815 final and a 3-element beam. His frequency is approximately 59 Mc/s.

Miss Constance Hall, G8LY will be moving to Lee-on-Solent at the end of September. Though her new QTH is at sea level, she will be able to scrap the battery supplies which have powered her station for so long and to use supply mains in future. She will use the same frequency (58·93 Mc/s.) as at present.

Malvern & District Radio Society

There was an attendance of nearly 100 at the first social evening of the above Society held on July 16 last. A raffle for goods kindly donated by the wife of the Chairman and other members was a feature of the proceedings.

* 8 Beckenham Grove, Shortlands, Kent.

LOW POWER CONTEST, 1947.

1. The Contest is open to all fully paid up members of the Society resident within the British Isles and the British Zone of Germany.

2. The British Isles for the purpose of the Contest includes England (G), Scotland (GM), Northern Ireland (GI), Wales (GW), Channel Islands (GC), and Isle of Man (GD).

3. The Contest will commence at 2300 G.M.T., on Saturday, 20th September, 1947, and will conclude at 2259 G.M.T., on Saturday, 27th September, 1947.

4. Entries will be accepted only if submitted on lined foolscap or quarto paper and in the form set out below :

LOW POWER CONTEST, 1947

Name : Call Sign :

Address : County Code No :

Details of Equipment used :

Aerials :

Contact No.	Date	G.M.T.	Call-sign Worked	R.S.T. Sent	R.S.T. Recd.	County Code No. of Station Worked	Multiplier

Declaration : I declare that my station was operated strictly in accordance with the rules and spirit of the Contest and I agree that the ruling of the Council of the R.S.G.B. shall be final in all cases of dispute.

Signed.....

(A figure will be entered in the multiplier column each time a new County is worked, thereby showing the total number of Counties worked up to that time.)

5. No entry form postmarked later than Sunday, 4th October, will be accepted.

6. Details at the top of the entry form must be completely filled in and the declaration signed, otherwise the entry will be disqualified.

7. Entries must be addressed to the Hon. Secretary, R.S.G.B. Contests Committee, New Ruskin House, Little Russell St., London, W.C.1.

8. The High Tension Power Supply for the complete transmitter must be obtained from a single standard-capacity 120-volt dry battery. Only one battery may be used throughout the Contest.

9. The only transmitter which the entrant may use on 3·5 Mc/s. during the period of the Contest shall be that which he uses for this Contest using the power supply specified in Rule 8.

10. All contacts must take place on the 3·5 Mc/s. band and must be with amateur stations located in the British Isles as defined above or in the British Zone of Germany.

11. Proof of contact may be required.

12. Contacts with unlicensed stations will not be permitted to count for points.

13. Only one person will be permitted to operate a specific station during the contest period.

14. The contest is confined to two-way telegraphy contacts.

15. Only one contact with any one station may be made during the contest.

16. One point will be scored for each contact and the total will be multiplied by the number of counties contacted in the course of the contest.

17. Competitors should use the code number denoting their own county whilst calling CQ *e.g.* " CQ CQ CQ de G9FB G9FB G9FB 17 AR." An exchange of RST reports and code numbers will be required before points for contact can be claimed, *e.g.* " RST 579 NR. 17."

18. Competitors making contact with stations not entering in the Contest must obtain from them during the contact the County in which they are located.

A list of County Code Numbers is set out below.

ENGLAND (G)

1. Bedford
2. Berkshire
3. Buckinghamshire
4. Cambridge
5. Cheshire
6. Cornwall
7. Cumberland
8. Derby
9. Devon
10. Dorset
11. Durham
12. Essex
13. Gloucester
14. Hampshire
15. Hereford
16. Hertford
17. Huntingdon
18. Kent
19. Lancashire
20. Leicester
21. Lincoln
22. London (Postal Districts)
23. Middlesex
24. Monmouth
25. Norfolk
26. Northampton
27. Northumberland
28. Nottingham
29. Oxford
30. Rutland
31. Shropshire
32. Somerset
33. Stafford
34. Suffolk
35. Surrey
36. Sussex
37. Warwick
38. Westmorland
39. Wiltshire
40. Worcestershire
41. Yorkshire

SCOTLAND (GM)

42. Aberdeen
43. Angus
44. Argyll
45. Ayr
46. Banff
47. Berwick
48. Bute
49. Caithness
50. Clackmannan
51. Dumbarton
52. Dumfries
53. East Lothian
54. Fife
55. Inverness
56. Kincardine
57. Kinross
58. Kirkcudbright
59. Lanark
60. Mid-Lothian
61. Moray
62. Nairn
63. Orkney
64. Peebles
65. Perth
66. Renfrew
67. Ross and Cromarty
68. Roxburgh
69. Selkirk
70. Shetland
71. Stirling
72. Sutherland
73. West Lothian
74. Wigtown

WALES (GW)

75. Anglesey
76. Brecknock
77. Cardigan
78. Carmarthen
79. Carnarvon
80. Denbigh
81. Flint
82. Glamorgan
83. Merioneth
84. Montgomery
85. Pembroke
86. Radnor

NORTHERN IRELAND (GI)

87. Antrim
88. Armagh
89. Down
90. Fermanagh
91. Londonderry
92. Tyrone

CHANNEL ISLANDS (GC)

93. Alderney
94. Guernsey
95. Jersey
96. Sark

(GD)

97. Isle of Man

(D2)

98. British Zone of Germany

News from Abroad

Friends of Capt. Eric Ilott, G2JK, will be interested to learn that he is now in residence at the Officers Mess, R.C.E.M.E. School, Barriefield, Ontario. He hopes to take out a VE3 call at an early date.

* * *

Mr. E. Hayter Simmonds, G8QH, is now living in the south of France where he expects shortly to set up a permanent residence at Cap Martin Roquebrune, half-way between Monte Carlo and the Italian frontier. Mr. Simmonds wishes to be remembered to all old friends at home.

CAMBRIDGE MEETING

THE first post-war Eastern Official Regional Meeting was held at the University Arms Hotel, Cambridge, on Saturday, July 12th, with 74 members in attendance. The afternoon meeting was presided over by the Regional Representative, Mr. Stan Granfield (G5BQ), supported by Messrs. V. M. Desmond (G5VM), H. A. M. Clark (G6OT), C. H. L. Edwards (G8TL), and G. Bloomfield (G2NR). A cable from "Clarry" (then in the U.S.A.) bearing good wishes for the success of the meeting was read, whilst apologies were tendered for the non-attendance of the CR for Norfolk.

As chief speaker, Mr. Clark gave what must surely rank as one of the best and most informative addresses ever made at a meeting of the Society. In a speech lasting more than an hour he dealt with the conference in Atlantic City, the future of the five meter band, definition of the amateur service, television interference, and a number of other matters. G8TL and G2NR spoke about the M. of S. Disposals Scheme, and gave an indication of what may be expected from that quarter in the future.

High tea was followed by a raffle which, with 36 good prizes, assumed the proportions of a pre-war Convention "swindle." The winner of the Granfield DX Trophy was announced as Peter Broom, G5DQ, who had submitted (what G2MI had judged to be) the best set of five QSL cards for 1946. He also won second place with another set to make his win even more convincing. The presentation was made by Miss May Gadsden (Assistant Secretary), who also officiated as dispenser of lucky numbers in the "swindle."

During the evening the toast of "The R.S.G.B." was proposed by Mr. Gerald Jeapes, G2XV, to which G8TL responded. The toast of "The Visitors" was proposed by the Cambridge T.R., Mr. C. H. Babbs (G5IG), and Mr. Vic. Desmond, in his reply, congratulated all concerned on the excellence of the arrangements for the meeting. The Cambs. C.R., Mr. F. Crabtree (G3BK), thanked the representatives from H.Q. for supporting the meeting.

A round of station visits concluded the day's programme, but alas—the television programme had already started!

Book Review

THE RADIO AMATEUR'S HANDBOOK (Twenty-fourth Edition—1947). By the H.Q. Staff of the A.R.R.L. 632 pages, 1,257 illustrations, and 96 charts and tables. (Price 11/6, available through R.S.G.B. Delivery about ten weeks).

The present edition is the first in five years to be produced wholly under peacetime conditions. New material has been added to the constructional sections, mainly as a result of work in the new A.R.R.L. laboratory, and the sections have been completely revised.

The two-valve "straight" receiver has disappeared, and a two-valve superheterodyne is the beginner's introduction to receivers. The writer regrets the disappearance of the little set which taught so much, and behaved so reasonably in the hands of the inexpert. In somewhat the same way, the single valve CO transmitter has been replaced by a CO–PA as the beginner's type.

The low-level full-wave clipter system, and narrow-band FM using a crystal oscillator, are interesting additions to the section on modulation equipment.

The "Antenna Construction" section, re-named "V.H.F. Antennas," contains much more directly useful design data on multi-element beams than did previous editions. The section on "Antenna Systems" also has considerable additional information, particularly on directive systems.

Taken by and large, this new edition has been modified, extended, and revised, and it is—this year, as ever—a book which will be kept handy in the modern amateur's shack.

One hesitates to suggest improvements in such a splendid book as this, but one would expect to find a little more information about the operating side of amateur radio. Where but in a manual would one expect to find the rules of the DX Century Club, and the W.A.S. Certificate? Both are mentioned, but one must refer to some back number of QST for the details: if the copy is not lost, the date is almost sure to be. It would also be helpful to foreign readers if the states in the different call-sign districts of the U.S. were listed.

These are small points, mainly of convenience. The essential thing is that the new edition is available, and is better than ever—which is saying a lot.

T. P. A.

(*This review was held over at the request of the A.R.R.L., as supplies of the first printing were restricted.*—ED.)

Activity in Jersey

Informal Meetings are held every Tuesday evening at 7.30 p.m., at "Monaco," St. Saviour's Road, Jersey, when the C.R. for the Channel Isles (GC3GS) runs a Morse class. Visitors to the island are cordially invited to attend these meetings.

Congrats

● To Mr. P. West, BRS9439, whose wife presented him with a son on July 20.

● To Mr. C. A. Bradbury, BRS1066, whose wife presented him with a daughter, Margaret Anne, on July 6, 1947.

● To Mr. R. Reed, G2RX, on the safe arrival of a junior op on July 15, 1947.

● To Mr. Bernard Fieldhouse, G2ABW, and his wife of Bromley, Brierley Hill, Staffs, on the arrival of a daughter, Ann.

Can You Help

Mr. V. H. Blanc, 21–4 Bolton Road, Chiswick, W.4. seeks details of the R1147B Superhet.

Mr. A. Baker, BRS11686, The Batch, Tickenham, Nr. Clevedon, Somerset, is anxious to obtain the circuit diagram of the American Airborne Communications Receiver R5/ARN7.

Mr. D. Wardman, BRS13600, 579 Wakefield Road, Waterloo, Huddersfield, requires the circuit diagram of the old Ekco Receiver Model RS3.

Mr. R. Thurlow, G3WW, North House, Wimblington, Cambs., seeks details of the R.A.F. 1147A Receiver.

Mr. A. Taylor, Associate, 53 Alexandra Road, Reading, Berks., having obtained an R1116A receiver and a A1134 amplifier, asks if it is possible to run a pick-up through either of these components?

Mr. J. F. Waldegrave, BERS8637, P.O. Box 25, Kilindini, Kenya Colony, requires details of the Italian Marconi MT31 and MT69, type valves.

Mr. S. G. Burrage, BRS14643, 47 St. Paul's Avenue, London, N.W.2., seeks information regarding the R.A.F. Wavemeter Type 1642.

Regional Representation

Corrections to list published in the July issue:—

REGION 7 *London West* (Ealing)

W. L. Rimmington (G2DVD), 34, Greystoke Lodge, Hanger Lane, Ealing, W.5.

REGION 12

Regional Representative: A. G. Anderson (GM3BCL), 38, Abergeldie Terrace, Aberdeen.

Our Front Cover

THIS month's picture, which is reproduced by courtesy of Messrs. Radiocraft Ltd., of Upper Norwood, S.E.19, shows a Model 7 AvoMeter being used on a small Transmitter to check the anode voltage of the first valve, a 6L6, which was being adjusted to run at 325 volts. The H.T. anode and screen feed to the transmitter are supplied by the bleeder resistor. The Model 7 AvoMeter is a multi-range A.C./D.C. instrument which is particularly suitable for radio testing by virtue of its comprehensive range of readings and small power consumption. Fully descriptive pamphlet available on application to The Automatic Coil Winder & Electrical Equipment Co., Ltd., Winder House, Douglas Street, London, S.W.1.

NEWS FROM HEADQUARTERS

COUNCIL, 1947

President :
STANLEY K. LEWER, B.Sc., G6LJ.

Executive Vice-President : V. M. Desmond, G5VM.
Hon. Secretary : H. A. M. Clark, B.Sc.(Eng.), G6OT.
Hon. Treasurer : A. J. H. Watson, F.S.A.A., G2YD.
Hon. Editor : Arthur O. Milne, G2MI.
Immediate Past President : E. L. Gardiner, B.Sc., G6GR.

Members : I. D. Auchterlonie, G6OM, G. F. Bloomfield, Ph.D., A.R.I.C., G2NR, C. H. L. Edwards, A.M.I.E.E., G8TL, K. Morton Evans, O.B.E., G5KJ, R. H. Hammans, G2IG, J. W. Mathews, G6LL, W. A. Scarr, M.A., G2WS.

G.P.O. Liaison Officer: Arthur E. Watts, G6UN.
General Secretary : John Clarricoats, G6CL.

June Council Meeting

Resume of the Minutes of a Meeting of the Council of the Inc. Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on Monday, 9th June, 1947, *at* 5.45 *p.m.*

Present.—The Vice President (Mr. V. M. Desmond), in the Chair, Messrs. I. D. Auchterlonie, G. Bloomfield, H. A. M. Clark, C. H. L. Edwards, K. Morton Evans, E. L. Gardiner, J. W. Mathews, A. O. Milne, W. A. Scarr, A. J. H. Watson, A. E. Watts, Miss M. Gadsden (Assistant Secretary) and Mr. S. A. Howard (Chairman, Social Committee), by invitation.

Apology.—An apology was submitted for the absence of Mr. Hammans.

Committee Reports.
The Reports of Committees were presented.

Finance.
Resolved to accept the balance sheet and cash accounts for the month of May as presented by the Treasurer.

Membership.
Resolved to elect 245 Corporate Members, 32 Associates and 9 Junior Associates.

One Corporate Member applied for, and was granted, Life Membership. Seven Associates applied for and were granted Corporate Membership.

Resolved to grant affiliation to the C.I.E.M.E. Technical Society.

International Telecommunications Conference, Atlantic City.
Mr. Watts reported on the progress at the Conference as recounted in communications received by him from the President and General Secretary.

Assistant Secretary's Report.
Two letters were submitted from members regarding amateur radio examinations. It was agreed to ask Messrs. Watts and Scarr to seek an interview with the Director of the City and Guilds Institute in order to make representations for the examination to be held every six months instead of annually.

A letter was received regarding a monitoring service. It was agreed to ask the sender to make more concrete proposals for the setting up of this service.

Services to Non-Members.
It was decided with regret that answers to technical correspondence and other services could not be given to non-members of the Society, except in reference to the Society's publication.

Radio Exhibition and Convention.
Mr. S. A. Howard, G8TY (Chairman, Social Committee), joined the meeting at this point.

After a discussion on the prospects of holding a Dinner on the last day of the Exhibition, it was resolved to instruct the Social Committee to continue the Exhibition until 10 p.m. on the Saturday, and to make no arrangements for a Dinner at the Royal Hotel as this would necessitate closing the Exhibition on the Friday night.

It was agreed to ask the Social Committee to investigate the possibilities of organising film shows and a function for Exhibitors.

London Members' Ladies Night.
It was agreed to hold the event on 20th September as advertised and to run such events in future as London Region Ladies' Nights.

The meeting terminated at 10 p.m.

Around the Trade

M.O.S., 24, New Road, London, E.1, have just issued a new catalogue of electronic products which is available free of charge to members.

FORTHCOMING EVENTS

REGION 2.

Aug.	20	**Hull**, 7.30 p.m., Imperial Hotel, Paragon Street.
,,	22	**Barnsley**, King George Hotel, Peel Street.
,,	22	**South Shields**, 7 p.m., St. Paul's School, Westoe.
,,	25	**Bradford** (Short Wave Club), 7 p.m., Temperance Hall, Harewood Street.
,,	25	**Halifax**, 7.30 p.m., 32 Clare Road.
,,	26	**Catterick**, 7 p.m., S.T.C., H.Q. Block, Vimy Lines.
,,	27	**Doncaster**, 7.30 p.m., 73 Hexthorpe Road.
,,	27	**Sheffield**, 8 p.m., "Dog and Partridge," Trippet Lane.
,,	27	**Sunderland**, 7.30 p.m., 16, North Bridge Street.
,,	27	**York**, 8 p.m., 29 Victor Street.
,,	29	**Sunderland**, 7.30 p.m., St. Paul's School, Westoe.
Sept.	2	**Catterick**, 7 p.m., S.T.C., H.Q. Block, Vimy Lines.
,,	3	**Harrogate**, 7.30 p.m., Y.M.C.A., Victoria Avenue.
,,	3	**York**, 8 p.m., 29 Victor Street.
,,	5	**South Shields**, 7 p.m., St. Paul's School, Westoe.
,,	8	**Halifax**, 7.30 p.m., 32 Clare Road.
,,	9	**Catterick**, 7 p.m., S.T.C., H.Q. Block, Vimy Lines.
,,	10	**Doncaster**, 7.30 p.m., 73 Hexthorpe Road.
,,	10	**Sunderland**, 7.30 p.m., 16 North Bridge Street.
,,	10	**York**, 8 p.m., 29 Victor Street.
,,	12	**Barnsley**, King George Hotel, Peel Street.
,,	12	**South Shields**, 7 p.m., St. Paul's School, Westoe.
,,	16	**Catterick**, 7 p.m., S.T.C., H.Q. Block, Vimy Lines.
,,	17	**Harrogate**, 7.30 p.m., Y.M.C.A., Victoria Avenue.
,,	17	**York**, 8 p.m., 29 Victor Street.
,,	19	**South Shields**, 7 p.m., St. Paul's School, Westoe.
,,	24	**Hull**, 7.30 p.m., Imperial Hotel, Paragon Street.

REGION 5.

Sept.	2	**Chelmsford**, 7.30 p.m., 184 Moulsham Street.

REGION 7.

Aug.	17	**Enfield**, 3 p.m., A. & B. Cafe, Southbury Road (Junction with Ladysmith Road).
,,	19	**Slough**, 7.30 p.m., Congregational Church Hall, Church Street.
,,	22	**Hampstead**, 14B Belsize Lane, N.W.3. (Station—Belsize Park, Northern Line.)
,,	22	**West Norwood**, 7.30 p.m., Brotherhood Hall, West Norwood. Junk Sale.
Sept.	2	**Welwyn Garden City**, 8 p.m., Council Offices, Welwyn Garden City.
,,	4	**Ruislip**, 7.30 p.m., Oddfellows Hall, Waxwell Lane, Pinner.
,,	5	**Southgate**, 7.30 p.m., Merryhills Hotel (near Oakwood Station).
,,	6	**Barnet**, 7.45 p.m., Millicent Cafe.
,,	11	**Ruislip**, 7.30 p.m., Oddfellows Hall, Waxwell Lane, Pinner.
,,	18	**Slough**, 7.30 p.m., Congregational Church Hall, Church Street.
,,	21	**Ilford**, 3 p.m., Ilford Town Hall.

REGION 8.

Aug.	25	**Brighton and Hove**, 7.30 p.m., "Golden Cross" Hotel, Western Road, Brighton.
Sept.	8	**Brighton and Hove**, 7.30 p.m., "Golden Cross," Hotel, Western Road, Brighton.
,,	22	**Brighton and Hove**, 7.30 p.m., "Golden Cross" Hotel, Western Road, Brighton.

REGION 9.

Aug.	16	**Plymouth**, Scouts' H.Q., Buckland Terrace, Millbay Road.
,,	18	**Stroud**, Clubroom, Cainscross Road.
,,	20	**Exeter**, 95 Sidwell Street.
,,	25	**Stroud**, Clubroom, Cainscross Road.
Sept.	1	**Stroud**, Clubroom, Cainscross Road.
,,	8	**Stroud**, Clubroom, Cainscross Road.
,,	15	**Stroud**, Clubroom, Cainscross Road.
,,	17	**Exeter**, 95 Sidwell Street.
,,	19	**Bristol**, 7 p.m., Keen's Cafe, Park Row.

REGION 10.

Sept.	8	**Cardiff**, 7 p.m., Park Hotel.

REGION 11.

Aug.	17	**Rhyl, Crown Hotel. Official Regional Meeting.**

REGION 12

Sept.	7	**Aberdeen Official Regional Meeting.**

REGION 14.

Aug.	27	**Glasgow**, 7 p.m., Institute of Engineers and Shipbuilders, 39 Elmbank Crescent, Glasgow.
Sept.	11	**Stirling (including Alloa, Larbert and Falkirk)**, 7.30 p.m., Plough Hotel, Stenhousemuir, Larbert.

NORTH EASTERN REGIONAL — MEETING —

COUNTY HOTEL : : NEWCASTLE

SUNDAY, AUGUST 24th,

Assemble	2 p.m.
Meeting	3 p.m.
High Tea	5 p.m.

Inclusive charge, 5/–

Tickets from County Representatives.

NORTH WESTERN REGIONAL — MEETING —

WINTER GARDENS : : BLACKPOOL

SUNDAY, SEPTEMBER 14th, 1947

Assemble	12 noon
Lunch	1.30 p.m.
Meeting	3 p.m.
Tea	5 p.m.

Inclusive charge, 10/6

Tickets from Regional, County and Town Representatives.

NORTHERN IRELAND REGIONAL — MEETING —

LANGFORD ROOM
20, WELLINGTON PLACE, BELFAST

SATURDAY, AUGUST 30th, 1947

Assemble	2.30 p.m.
Meeting	3 p.m.
High Tea	5.30 p.m.

Inclusive charge, 6/–

Tickets from F. A. ROBB, GI6TK, 60 Victoria Avenue, Sydenham, Belfast (Telephone 55494), or R. BARR, GI5UR, 4 Dunkeld Gardens, Oldpark, Belfast.

SOUTH WALES & MONMOUTHSHIRE — REGIONAL MEETING —

PARK HOTEL : : : CARDIFF

SATURDAY, SEPTEMBER 20th, 1947

Assemble	2 p.m.
Meeting	2.30 p.m.
High Tea	5 p.m.
Station Visits	7 p.m.

Inclusive charge, 7/6
(Lunch 5/– extra)

Tickets not later than September 12th from Mr. P. IENKINS, GW3VL, 100A, Manor Way, Whitchurch, Cardiff.

NORTH OF SCOTLAND REGIONAL — MEETING —

ROYAL HOTEL : : ABERDEEN

SUNDAY, SEPTEMBER 7th, 1947

Assemble	12 noon
Lunch	12.30 p.m.
Meeting	1.30 p.m.
Discussion	3.30 p.m.

Inclusive charge, 5/6

Further details from local County Representatives.

LONDON REGIONAL — MEETING —

ROYAL HOTEL, WOBURN PLACE, W.C.1

SATURDAY, SEPTEMBER 27th, 1947

Assemble	2.30 p.m.
Meeting	3 p.m.
Buffet Tea	5 p.m.

Inclusive charge, 4/– (payable at door).

SOUTH EASTERN REGIONAL — MEETING —

R.A.E. : FARNBOROUGH : HANTS

SATURDAY, SEPTEMBER 13th, 1947

Assemble	2.30 p.m.
Tea	4.30 p.m.

Inclusive charge, 2/6

Tickets from Mr. J. St. C. RUDDOCK, G8TS, "Stoneyford," Tor Road, Crondale Lane, Farnham, Surrey.

SOUTH EASTERN REGIONAL — MEETING —

TOLLARD ROYAL HOTEL, BOURNEMOUTH

SATURDAY, OCTOBER 25th, 1947

Lunch	1 p.m.
Meeting	2.30 p.m.
Tea	4.30 p.m.

Inclusive charge, 10/6

Tickets from Mr. F. WHITE, Chester House, Chine Crescent, Bournemouth, or Headquarters. (Overnight accommodation can be arranged. Terms: 13/6 bed and breakfast at hotel, also includes admission to dance in the evening.)

EXCHANGE AND MART SECTION

Due to paper restrictions advertisements are only accepted "for insertion when space is available." No advertisement must exceed 50 words. RATES: Members Private Advertisements 2d. per word, minimum charge 3/-. Trade, 6d. per word, minimum charge 9/-. Use of Box number 1/6 extra. Send copy and payment to Parrs Advertising Ltd., 121 Kingsway, London, W.C.2.

A BARGAIN.—58-60 Mc/s Receiver: 955-6K7-6C5-6C5, complete with valves, £9. 0-2 milliameter DC M/C, 17s. 6d. Smoothing choke 20HY, 120 mA, 10s. Premier multi-ratio output transformer, 30 watts, 25s. 2 PX25's matched, unused, 30s. pr.—BRUNDRET, Bennington Dean Row, Wilmslow, Cheshire. [*395*

A LIMITED number of meter-rectifiers by Westinghouse. New Midget, tubular ⅜ in. × ⅞ in., tag ends, half wave, 3s. each.—G2CDN, 87 Brixton Hill, S.W.2. [*149*

AR88D Receiver, 445 kc. to 31 Mc/s. Latest model in mint condition, £55. Seen working London, S.E.12.—Box 390, PARRS, 121 Kingsway, London, W.C.2. [*390*

ATTENTION.—Chassis, Racks, Panels to your own specification. Black, Grey or Plain finish. Drilled or undrilled. Equiries welcomed. SAE please.—RADIO CONSTRUCTION AND MAINTENANCE LIMITED, Barracks Lane, Cardiff. [*393*

BRAND Spanking New.—1155 Receiver, 803, 813's, 829B, 807, 6L6's, 6SN7, RK34, 954's, 955's, 6AC7's, 394A and lots of others. Yanki throat mike, 110v AC. Relays, Mallory Synchronous Vibropack. Used, HRO Senior, complete, VHF Commercial Pipe Oscillator, 1000v/250 mills. power pack complete; also other transformers. Reasonable offers accepted; S.A.E.—BRS7475, Box 422, PARRS, 121 Kingsway, London, W.C.2. [*422*

BRS has for disposal, unused Transmitter valves, meters, short wave components, test equipment, general radio components, all at bargain prices. S.A.E. to F. J. GRANT, 46 Milton Street, Sutton Manor, St. Helens, Lancs. [*401*

COMMUNICATION Receiver. Eddystone 504. Condition as new, delivered about five months ago. With Eddystone Die-Cast speaker, £40.—FAIRBAIRN, 57 Monument Road, Ayr. [*306*

COMPLETE STATION.—Bargain 150-250 watts. First class. Photo circuits, etc. AR88. Excellent condition. Offers over £85 or will separate. Also Taylor Meter 48c.—Offers.—HOLMES, 126 Brownshill Green Road, Coventry. [*384*

C.R. 100, perfect. S.27 working on 5 metres: requires attention on other bands, also three valves. Offers for above. Wanted: AR88.—G5KX, 1 Balmoral Drive, Southport. [*420*

EXCHANGE.—"Masteradio" AC/DC model 3 waveband, only used a few months, for AC/DC communication receiver in good condition; S38 preferred, or AC/DC short-wave convertor, 5-10-20 meters.—GORMAN, 15 Northburn Street, Glasgow, C.4. [*413*

EVRIZONE single signal superhet 10 to 160 metres, bandspread, power pack £20.—G2DHV, 63 Lewisham Hill, London, S.E.13. [*372*

FOR SALE.—5U4G, 5Y3GT, 5Z3, KT44 (2), 6L7, 6SA7, 12SA7, 6K8, 12A6 (2), 6SG7, 12SK7 (2), 717A (2), 6K7, 12SG7, 6SJ7, all 10s. each. 6J5 (5) at 5s. each. 6AK5, 956, 955, 9002 (2), 9003 (4) at 12s. each. All guaranteed equal to new, though unboxed.—BRS6445, Room 7, 36 Chislehurst Road, Bromley, Kent. [*412*

FOR SALE.—Large quantity of equipment, includes Frequency Meter, AC/DC Avominor, Diversity Adaptor, C.R.T. Loudspeakers, 120 valves (most unused) includes: 211c's, 832's, 6AJ5's, 6J6's, 955's, 954's, 1625's. Hundreds of components £50 or consider exchanges for good engagement ring (medium large) or good diamond, or separate offers.—Box 376, PARRS, 121 Kingsway, London, W.C.2. [*376*

FOR SALE or exchange.—Army 19 set, Receiver Transmitter covers, both 40 and 80 meter band. 12v supply. Complete. Also petrol generator. Enquiries R. A. HAM, 12 St. Elmo Road, Worthing, Sussex. [*387*

FOR SALE.—Oscilloscope, complete with Mullard 6 in. electrostatic cathode ray tube, amplifier, hard valve time base frequency from 10 c.p.s.–200 kc/s., 12 controls, steel chassis and case, plated and cellulose finish. Excellent condition, very little used, £45, or near offer.—SPINNER, 209 High Street, Walthamstow, London, E.17. [386

FOR SALE.—Transmitter, 6V6/807 as described January *Short-Wave Magazine*, power and key, new accessories, £20. Receiver, Sky Champion, nearest £25.—DEVANEY, 12 Colville Street, Derby. [398

G6DN's 6 valve superhet communication Receiver for sale, with pre-selector, £14 ; also 12in. moving coil loud speaker, £5 DENNY, 18 Willoughby Avenue, Fog Lane, Didsbury, Manchester. 20. [399

HALLICRAFTERS.—S11 super Skyrider, Crystal filter, new valves, perfect condition, also Raymart 2 stage preselector. Best offer over £45. 3½in. Oscilloscope, complete 4-valve time base, power pack, two 807 amplifiers, £16 10s.—G2FZ, 9 Antons Road, Pensby, Wirral. [396

HALLICRAFTER Sky Champion with S meter and instruction book. Recently re-aligned. Condition as new, £22 10s.—G4QF, 50 Addington Road, West Wickham, Kent. [406

H.R.O. R107, Transmitters, other gear and valves for sale.—S.A.E., MANSELL, Deer Park, Tenby. [407

H.R.O. Senior with National noise limiter, 9 coils, very good condition. Offers—79 Allesley Old Road, Coventry. [411

H.R.O. National Receiver for sale with coils for all bands up to 30 Mc/s. New condition, £50.—57 Ravensworth Road, Doncaster. [424

LARGE, Rotary wave-change switches, Yaxley type, oak pattern. Stand high voltage, ideal for transmitters. New, unused 3-pole, 4-position, 3-bank, plus 1-bank of miscellaneous contacts. Complete with knob. Real bargain, buy now for future use. 5s. post 6d. 54s. dozen, post 1s. 6d.—R.T.S. LTD, 8 Gladstone Road, Wimbledon, S.W.19. [261

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NEW VALVES.—35T pair, £3. TZ40 pair, 50s. 6L6 metal, 10s. D104 crystal mike, £3. 100/1000 kc. Crystal, £2.—Box 377, PARRS, 121 Kingsway, London, W.C.2. [377

NUMEROUS unwanted valves. All unused. 813's, £3. 805's, £3. 830B, 50s. 807's, 12s. 6d. PT15's, 15s., and various ex-service receiving values. Stamp for list.—G3ALY, Dalby Keyingham, Nr. Hull. [374

OFFERS wanted Taylor Model 83A Meter, one each. H.V. Power Pack, L.V. Power Pack, 500v. Power Pack and meter, half-inch Power Drill, Osram U23 Rectifier 5c/100A, R.K.20, three 813's, two Osram DA41's, four Vols. Newnes *Practical Wireless*. Enquiries for all or single items, REGAL CINEMA, Bonnyrigg. Phone Lasswade 2274. [299

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QSL's and log books (P.M.G. approved). Samples free ; state whether G or BRS.—ATKINSON BROS., Printers, Elland.

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R.C.A. Ribbon Microphone (new) with built in transformer and grip switch on desk stand with cable, £7 10s. 0d.—BRS 12959, STROUDS, Bradfield, Berks. [332A

R.C.A. Communication Receiver AR77E, 10 valve 540 kc. to 31 Mc., crystal filter, noise limiter, S meter, excellent condition, £35. Hallicrafter SX24, less transformer and valves, £10. Tobe 7 valve communication receiver, 4-band, with speaker, £15, 1000 kc. crystal octal base, 30s.—E. WILLIS, 67A Southern Road. Basingstoke. [416

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RECEIVERS for Sale.—R.C.A. AR.77 in excellent condition. Best offer over £40. British equivalent of S.27, 27–130 Mc/s. acorns, 5 Mc/s. IF power unit, etc., £20. Brand new 6L6's, 12s. each.—12B Uxbridge Road, Kingston, Surrey. [423

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R1132A UHF Receiver, modified 50/60 Mc/s, 12 valves, including noise limiter, tuning meter, built in power pack, high and low resistance output ; beautiful set, worth £40, sell £20, carriage extra ; 1000–0–1000, 200 mA transformer, new 70s. Mc 0–15 Voltmeter, 10s.—MARTIN, Castlemount, Worksop. [397

R1155.—New Black crackle rack panel. New instrument knobs. New AVC switch. D.F. components removed. 6V6 output. Phone jack. Speaker sockets. Tone control. Aerial circuits redesigned. Self-contained power pack with socket for V.H.F. converter. Re-calibrated. Super job. £25 or offer.—WALSBY, 16 Wharncliffe Road, Boscombe, Hants. [380

R1132 Modified to cover 28/200 Mc. 10 valves, LS. phone output, perfect order, £11. Pair DET14 (T55) brand new in crates, £5 each. New Rothermel crystal mike, £4.—G8DT, Redcroft, Eldon Avenue, Cheltenham. [382

R1155 Receiver for sale. Modified 6L6 output stage in perfect working order, £18 or offers.—BRS6898, 11 Gallipoli Terrace, Talbach, Port Talbot, Glamorgan. [410

SALE.—Collins Transmitters, Types 30J and 45A. Harvey Transmitters, types U.H.X.35 and 80T, together with Hallicrafter and National Receivers. Stamp for full details to BRS7982, 9 Kingsway East, Newcastle, Staffs. [324

SALE.—V.H.F. Convertor, 4 Mc/s. I.F. 58 or 112 Mc/s. EF50, EF50, EF54. Also quantity of radio gear, crystals, transformers, etc.—G3SN, 7 Sidwell Terrace, Exeter. [383

SALE.—Special National Receiver rack mounted, with twin speakers, spare set of valves and instruction manual. Also many unused valves. S.A.E. for list.—WHARMBY, 535 Oldham Road, Middleton, Nr. Manchester. [373

SALE.—50W Rack Transmitter, complete with crystal mike. Line up 6J7, 6L6, pair 6L6's PP.RF. 6L6 Tritet, 6L6 doubler. pair PT15's, £40.—G8JF, 4 Queen's Road, Wallington, Surrey, Wallington 3256. [400

SALE.—CW Transmitter, 25 watts 6L6 Co. link coupled to 807, P.A. Covers 10, 20, 40 metres. One set ten metres Coils (Eddystone) 7 Mc/s. crystal, Ferranti meter, complete, £10.—G2ATD, 101 Hurst Road, Erith, Kent. [404

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SALE.—1155, 656 output, R.F. and audio gain. Perfect condition. Owner QRT.—G2A1X, 87 York Road, West Hartlepool. [414

SALE.—Hammarlund HQ120X communication receiver, recently overhauled 110/230 AC, complete with 8in. PM speaker, £45. New and unused valves, 1A7GT, E1.2, 7C5(3), X41C, 6N7G, EF8, EK2, ECH3, 35Z5GT (3), 10s. each. 220 HPT, 6C6, 56, 24A, 7s. 6d. each.—G4QG, " High View," Upperton, Nr. Petworth, Sussex. [421

SALE.—Trophy Communication Receiver (45Mc–550 kc). Condition as new, complete with speaker, £22, or nearest offers.—W. MACDONALD, Fodderty Cottages, Dingwall, Rosshire.

SIG-GEN, 6 bands 30 Mc/s.–120 kc/s., 400 cycle mod., for AC mains, as new, £7 10s. New RCA 9001–2–3–6, 6AK5, 6AG5, 6J6, 6C4, 10s. each. Laboratory built VTVM black crackle case, 0–1, 0–10, 0–100, 0–500v AC/DC RF–AF for AC mains, 3½in. 0–500 microampmeter, £7 10s.—Box 392, PARRS, 121 Kingsway, London, W.C.2. [392

SKY Buddy 0·55–46 Mc. May be seen S.E. London ; Offers ? HRO coils wanted, 1·7–4, 7–1·44 Mc.—Box 370 PARRS, 121 Kingsway, London, W.C.2. [370

TOBE 7 valve Communication Receiver, speaker and 5 spare valves. Offers to 10 Moor Park Road, Northwood, Middlesex.

TRANSMITTER.—VFO, 20–80 Mc/s., 807 output, power pack, £7. TR9 Transmitter Receiver, £3. Two Denco 1600 kc/s. I.F. transformers and BFO unit, new, 15s. Field strength meter, diode operated, £2. All carriage paid.—DUNCAN, 23 Noran Avenue, Dundee. [415

URGENTLY required.—866 Jnr. Pair or single. Sale Crystal 7118 kc/s., 15s., mounted. 56 and 28 Mc/s. convertor, complete. Details, stamp. Pair TY1–50 new, 35s.—G3HS, Faringdon, Berks. [402

VALVES 813, £3 10s. 829, 47s. 6d. CV6's, 5s. All brand new. Also 8 uf condenser, 1,500 v.w. 25s. ; converter 12V to 550V 14a D.C., £2. Crystal 3554·4 kc/s., hardly used, 27s. 6d — WHITHAM, 86 Providence Road, Sheffield 6. [371

VALVES unused.—35T, 35s. ; 832, 30s. ; 830B, 20s. ; 815, 30s. ; -A2, 10s. ; Pr.TZ40's, 50s. ; Pr. 807's, 30s. ; Pr. RK34's, 30s. ; DC to DC Rotary Converter, 25v. input, 550v. 450mA output, with starter relay, £4. Mod. Transformer 75 watts, P.P. 6L6's into P.P. 807's R.F., 30s. —G2HKF, 25 Alfred Street, Rushden, Northants. [381

WANTED.—RF preselector Type RME DB20 in good condition and appearance. State lowest price required.—Box 239, PARRS, 121 Kingsway, London, W.C.2. [239

WANTED.—B.C.342 N. Manual (Purchase or loan.)—BRS 13898, 35 Sea View Avenue, Plymouth, Devon. [378

WANTED.—Receiver AR88. Ham use only. Not resale. Price, condition, etc.—Box 379, PARRS, 121 Kingsway, London, W.C.2. [379

WANTED.—Circuit diagram of power pack and data for winding P.A. tank coils for Type B.2. Trans-Receiver. Buy, borrow or hire. Offers to N.PETTIFOR, 23 Willis Avenue, Sutton, Surrey. [426

WANTED.—BC348 Receiver, converted for AC or otherwise. Particulars and price to G2CDB, 36 Greenbank Road, Hoole, Chester. [405

WANTED.—R.A.F. T.1333 Dingy H.T. hand generator with voltage regulator or Mortley Sprague 800v 30 mA–6v–2 amp. ditto.—SMITH, 11 Llewellyn Street, Barry. [408

WANTED.—Communication Receiver, CR100 or similar, in good condition.—Box 417, PARRS, 121 Kingsway, London, W.C.2. [417

WANTED urgently.—Loan or purchase : Text books in Heat, Light and Sound, Inter. B.Sc. standard or beyond.—BRS 13896, 45 Mount Road, Canterbury, Kent. [388

WANTED.—Valves, 808, 2A3, 83, 956, VR150/30, 866 Jr. 3 gang 50 PF.—Box 389, PARRS, 121 Kingsway, London, W.C.2.

WIRELESS WORLD.—47 copies, Feb. 1943—Dec. 1946. Complete, £3 ; 20 assorted Penguins, 10s. ; 38 odd Miniature Camera Magazines, 1937–42, 10s. ; 2v 1/2 amp. trickle charger, 15s.—K. OLIVER, 5 Ennismore Avenue, Guildford. [419

400-watt G.E.C. Hotplate 10s. ; 1200-watt Belling ring, £1. 3-kw. immersion heater, tank gland and washers new, £3 10s. 700-watt kettle immersion heater, £1. 230-volt aluminium kettle, £2. 700-watt Eltron portable immersion heater, £1.—G8NB, 7 Herondale Avenue, Wandsworth, S.W.18. [303

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