

THE T&R

# BULLETIN

A JOURNAL FOR  
**RADIO EXPERIMENTERS**

Vol. 17 No. 8

FEBRUARY 1942 (Copyright)

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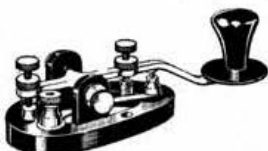
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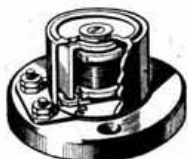
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AND ADVANCEMENT  
OF AMATEUR RADIO

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Vol. XVII. No. 8

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## GOOD COMPANIONS

IMMEDIATELY facing this page appears an announcement which should interest every member. We have not attempted to tell a fancy tale about this new R.S.G.B. publication because we believe "the contents speak for themselves."

When the idea of a Supplement to the Handbook was first mooted, way back last summer, our ideas centred around a small booklet containing a reprint of the popular Maths. articles. As time went on it became increasingly clear that something bigger had to be produced if we were to appease the demands which showered upon us. "Please can we have some dope on C.R. Tubes?" "How about an up-to-date chapter on Radio Direction Finding?" "Can I have the full series of Vade Mecum articles?" These and many similar queries poured in to Headquarters, with the inevitable result that all our original plans had to be reconsidered.

It is not an easy task even in peace time, for members of the Society's Brains Trust to produce a few thousand words for a new "Handbook" chapter (ask G5CD, 6CJ, 6GR, 6LJ, 6LL, 6OT, and all the others who have had experience!); but with the country at war, the Handbook Committee "up to their eyes" in work, advertisers with little to sell, to say nothing of a little thing called "paper," the assignment appeared to be just about the toughest, Council has ever tackled.

Autumn came, and greatly daring, we began to talk about the Supplement, in fact, we even wrote an Editorial about it.

Then snags arose. That Maths. chapter which we had scheduled to run to about 15 pages suddenly began to grow larger. Our printers, faced with a vast amount of mathematical data which required the employment of their most skilled operators, found themselves victims to "call up" demands from the Services.

Then began the nightmare quest for a draughtsman—over 100 new blocks were required. Like a ray of sunshine G8DD turned up with an offer to help.

With everything nicely planned, there arose a cry "how about revising 'Fundamentals'?" Whew! "Let's ask G5RV," said someone, "he'd love to do it." And so he would, but there were heavy demands on his time. Nevertheless Louis Varney *did* write a new Fundamentals chapter—and we think you will like it.

(Continued page 304)

# AMATEUR CONSTRUCTION IN WAR TIME

By L. W. SMITH (2FSI).

*Here is the story of what one amateur has been doing with his spare time during the great "Close Down." He is to be congratulated for applying his leisure moments to such good effect.*

WITH the outbreak of hostilities in that gloomy September of 1939, and the closing down of all transmitting activities, interest in amateur radio at 2FSI suffered a paralysing blow, which subsequent visits from the G.P.O. authorities, and wholesale removal of gear, did little to alleviate.

When, however, interest *did* begin to revive, during the early part of 1940, it was accompanied by an ever deepening conviction that here, perhaps, was a golden opportunity for replanning and rebuilding the entire station. Looking back now through the station log-book to those pre-war days, we never cease to be amazed at the un-co-ordinated planning with which we used to be satisfied. In fact, to put it bluntly, the whole station was no more than a rather untidy hook-up.

Interest having fully recovered, stock was taken of what resources were left, after those predatory official invasions of the previous year. A general layout was devised, which, except for a few subsequent additions and alterations, was substantially as shown in the block schematic (Fig. 1). Then came the recommencement of activity.

## The Transmitter Cabinet Remodelled

The transmitter cabinet (all that was left) was

stripped down and remodelled, ready to house the treasured transmitter when it returned from its long exile in the G.P.O. Stores. When this was completed, it was decided that the variety of finishes with which each unit had been adorned could, with advantage, be dispensed with. The cabinet was accordingly finished in silver grey (which colour has since become predominant throughout the station).

## Reconstruction of Receiving Equipment

Having brought this phase to a successful conclusion the next step was the complete reconstruction of all receiving apparatus, and here the first real difficulty arose. Where was all this apparatus to be housed?

It was quite evident that to attain any degree of efficiency and neatness, the old system had to go, although it was very easy to slip back into the idea that a mains unit on the floor, short-wave receiver on the table, and a broadcast receiver on the bookcase was well, not too good perhaps, but it would do for now.

The rack system of mounting did not appeal, so the only alternative was some form of cabinet, and the problem of where to get one large enough

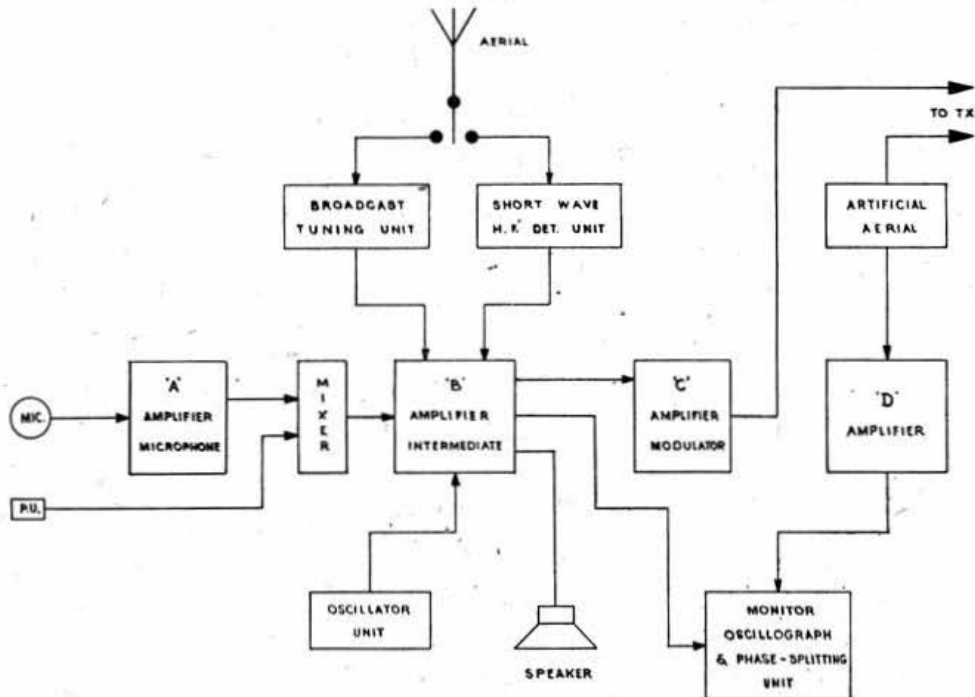


Fig. 1.

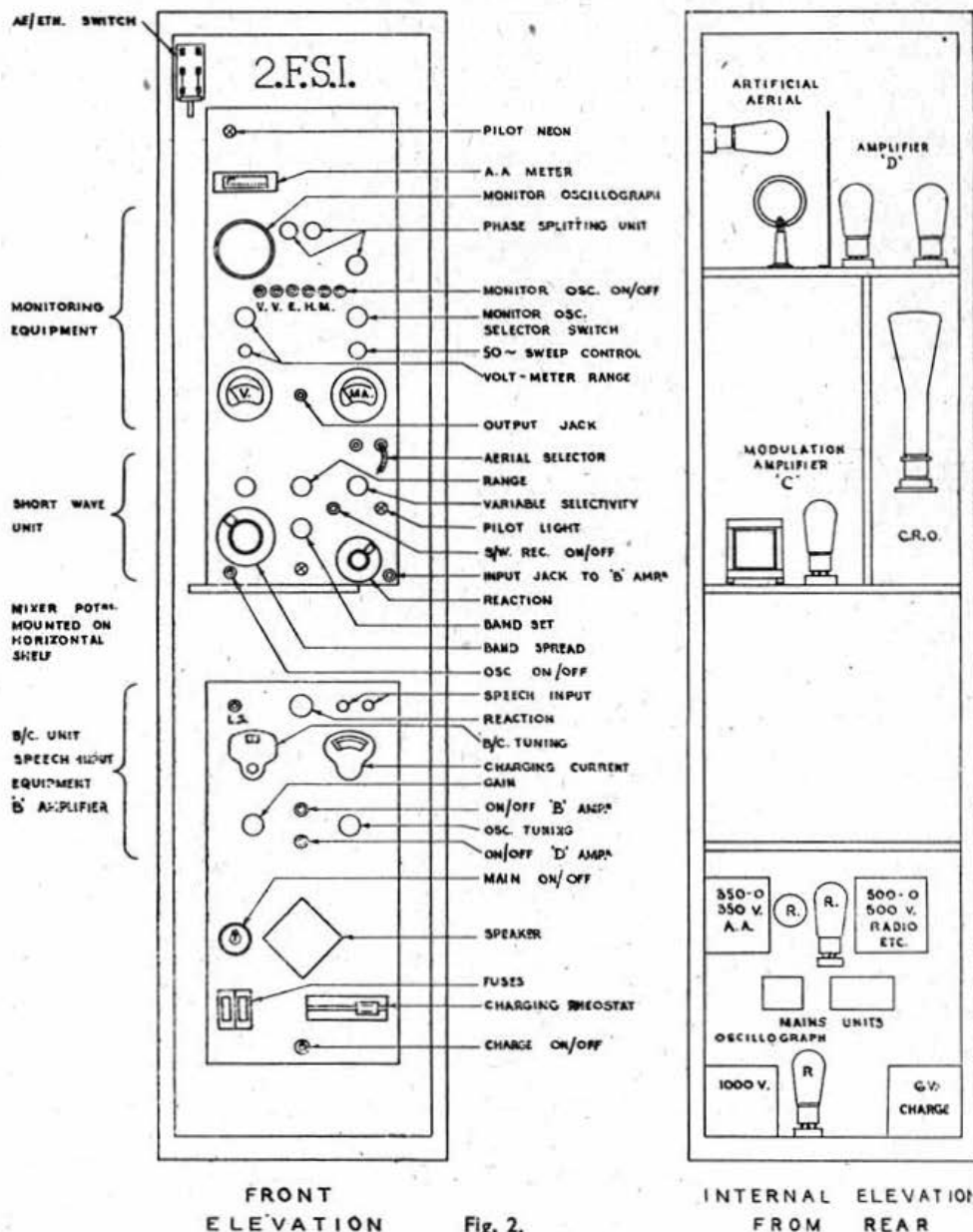
Lay-out of the equipment installed by the author.

caused much thought and head scratching, until at last it was decided to put into active commission, a cupboard which had been performing the duties of a junk store. This brought to the fore the problem of mounting the apparatus.

It was finally decided that as the cupboard contained three shelves, all the mains supply equipment should be housed in the bottom compartment. Accordingly the first mains unit and the

charging unit were installed. The next step was to cover the inside of the door with metal foil for screening, after which the radio receiver (comprising "B" amplifier and tuning unit) was mounted near the top of the lower panel with all controls brought through to the front. Flex leads were taken down to the mains unit, and the speaker mounted immediately below the amplifier chassis.

Tests proved quite satisfactory except for



The very comprehensive range of equipment constructed by the author can be judged from these two elevations of his cupboard lay-out.

resonances in the cupboard, but it was felt that at last a reasonably good form of construction had been evolved which provided neatness with instant accessibility, as well as being almost completely dustproof. All controls could be brought out to the front for convenient operation, and by opening the door, the apparatus was immediately accessible for inspection, alteration, extension, etc.

The next step was to hunt down the resonance troubles; this proved a rather lengthy job, but eventually the last spurious vibration was located and damped out.

With the successful conclusion of this phase of operations, the next job was to mount the short-wave receiver in a similar manner. This proved to be a rather more intricate job owing to the necessity for adequate screening, but eventually the unit was successfully mounted on the lower part of the top panel.

### Auxiliary Equipment

From now on, things progressed steadily. First an oscillograph tube was mounted in the third compartment up and suitably screened. The power supply was installed in the bottom compartment. This tube having a 3-in. screen is now used for general test-purposes. An oscillator coil/condenser unit was added to the "B" amplifier to provide a test frequency of 900-1000 cycles. Lastly, a diode rectifier with tuned circuit was installed as an artificial aerial and the meter brought out to the front panel. A two-valve amplifier was added later to amplify the rectified signal for application to the oscillograph.

Space having been left for building the actual modulation amplifier alongside the C.R.O., the line up was finally completed by a 1½-in. monitor tube mounted near the top of the top panel, together with a phase splitting unit, for calibrating oscillators from the mains frequency.

### Record Playing Table

Then came a vindication of that old proverb, "It's an ill wind," etc. The house next to that belonging to a friend of the family was destroyed by enemy action, and as a result, the said friend decided to sell what was left of his furniture and move out.

To cut a long story short, among the furniture was a small sideboard, rather old-fashioned, but quite serviceable, with ornate carved back and side pieces. These decorations were ruthlessly culled from the main body, and with some slight difficulty (thanks to the thickness of the wood) a gramophone motor and pick-up were installed on top, thus turning the whole into a very serviceable playing desk. The interior was converted into a record file.

A neon lamp for checking motor speed with stroboscopic disc, and a small filament lamp were also installed, together with a telephone hand-set at the other end. Space is also provided for the future installation of a second turntable and pick-up.

### The Microphone

The only item then left outstanding (apart from testing apparatus) was the microphone. This was mounted on a wooden stand which in turn was placed on a metal box which houses the pre-amplifier. This amplifier was thus provided with

complete screening and enabled it to be placed well away from any mains wiring, thereby removing the possibility of extraneous pick-up. It was also provided with its own on/off switch and gain control, the output feeding to a mixer panel with the pick-up, and then to the input of the "B" amplifier.

### Frequency Measuring Gear

Having completed, in effect, the main features of the station, attention was turned to testing apparatus. As the monitor tube is arranged to take care of all modulation measurements, and the artificial aerial looks after the transmitter output, the next essential was some form of frequency measuring device.

Following a suggestion in *The T. & R. Bulletin*, two biscuit tins were procured, and with the help of the venerable Handbook, a frequency meter and 100 kc/s crystal oscillator, were put on schedule. These are not yet completed as the audio equipment has just been undergoing further purges and revision.

The general layout will be gathered from the diagrams.

So much then for the activities of one ham during war-time. Let us hope that many others, whose stations were perhaps not quite all they could be, have taken this respite from transmitting work to clean up their gear.

## Down Zummerzet Way

By "GRANFER."

*(The scene is set in the bar-parlour of "The Blue Ball" where all the villagers have gathered to spend the evening. In reply to a suggestion, Granfer has consented to spin a yarn or two concerning the good old days).*

"Zince 'ee ax I to tell 'ee er tale of them gude ole days when I ztartet thiz yur hammerter radio, I wull. Us didn't 'ave no valvz like 'ee 'ave ti-day an' none er they noo-fangld things. I wull remember me fust zpark zet, purty lil zpark it gived too an' zuch er zwate zmiell. Wun day I was er fixin' zummat when thur tip er me beard got a catched in zpark—proper vlare-up thur wure an' I 'adn't vace to zhow mezelf in village 'till 'ee groo agen.

"Then oor receiveez wadn't zo gude neither, an' us 'adn't vury gude aerials zo us tried wun er them kite aerials. I wure up over in Varmer James's vield—Longacre, I mean—a tryin' to vly thickee kite when un wunt an' got 'eezelf all a muxed up with church steeple. Proper mazed I wure 'ow to get 'ee down. An' Recter wadn't 'alf vexed coz 'ee 'ad to ztay thur over Zunday 'till vire enjin' arrived an' viremen cude get 'ee down.

"Foo yur ago us 'ad 'igh wind, proper gale 'ee wure, lufted roof orf Varmer's linhay up Moor End and blew Zquire's aerial pole down right on top er 'is coocumbering vrames. Zuch a muss I never did zee afore an' I cassan't zay as 'ow I wude want to zee it agen. Ee wure proper badgered an didn't zpake to no one abowt nort ver over a wake—not like 'un, it wadn't neither.

"Wull, az tiz gettin' nur taime I worn't tell 'ee any more ver ti-night, but I'll 'ave another glaz ee zyder afore I goez an' thun I'll wish 'ee all gudr night."



# THE OSCILLOSCOPE: ITS PRINCIPLES AND USES

## PART II

By J. D. MORRIS (2DRR).

**B**EFORE proceeding with the uses of the oscilloscope, it seems advisable to consider the application of "Y" plate amplifiers. These are necessary when the input voltage is very small, such as when examining the waveform in the early stages of a receiver. The primary aim in the design of such an amplifier is that it shall have as near a straight-line response as possible. If the response curve is poor any results obtained will only be a pretence to accuracy. Secondly, the input resistance must be very high (at least 1 megohm), otherwise the circuit under test will be heavily damped with consequent decrease in amplitude and in most cases distortion of the waveform. Either one or two stages of amplification may be employed, although a voltage gain of 100 is usually sufficient for most purposes. The average Cathode Ray Tube has a deflection sensitivity of 25 volts R.M.S./inch and 20 volts R.M.S./inch on the Y and X plates respectively.

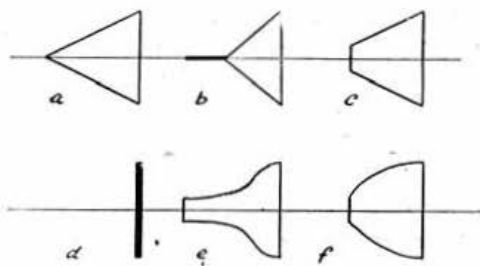


Fig. 3.  
Lissajous' Figures.

### Telephony Transmissions

The Cathode Ray Oscilloscope is invaluable when setting up a telephony transmitter as it will readily indicate distortion, percentage modulation, etcetera. There are two ways in which connection to a transmitter (assuming it is plate modulated) may be made. One eliminates the necessity of using a time-base and gives trapezoidal or Lissajous' figures as shown in Fig. 3. This method is very suited to amateur work as a small tube is sufficient to give accurate results; also the figure on the screen remains constant during speech of a constant level, hence monitoring is facilitated. Fig. 4 shows the necessary connections, from which it will be seen that the X plates are tapped across part of the modulator output, the Y plates being coupled to the transmitter tank coil by a small link of two or three turns. The position of the X plate tap should be adjusted so as to give nearly full deflection horizontally and the coupling to the tank coil set to give a similar deflection vertically so that the picture will nearly fill the screen. When in operation the trans-

mitter should, after proper adjustment, give almost a perfect triangle (Fig. 3a). If over-modulation is present the triangle will be followed by a line (Fig. 3b), and if modulated less than 100 per cent. the triangle will have its apex cut off (Fig. 3c). From the ratio between the length of the triangle, measured horizontally, and the length when completed, the percentage modulation can be judged. If the carrier is unmodulated the trace will appear as a vertical line (Fig. 3d).

Distortion is manifested by curvature of the "triangle" sides. Fig. 3e and 3f indicate some of the most common forms of distortion as observed on a Cathode Ray Oscilloscope. When checking for distortion it is essential to feed a signal of constant amplitude into the modulator so that the percentage modulation will not vary. This can be obtained from an audio oscillator, constant frequency records or if no other means is available, by whistling into the microphone.

### Receiver Fault Finding

The Oscilloscope, in conjunction with an R.F. oscillator, is used extensively for receiver fault finding. The oscillator should be of the type whose output can be modulated by an audio oscillator or "wobulated" at will. The term "wobulated" means that the output frequency is continuously being varied about its mean value, so that the signal generated will resemble a normal transmission having a definite bandwidth. Thus, if the oscillator frequency is varied by 25 kc/s. either side of its mean value, it will be possible to measure the amplification afforded to signals which are off-tune up to that extent.

"Wobulation" may be effected either mechanically or electronically: in the mechanical system a small motor is arranged to drive a condenser whose capacity variation is sufficient to vary the oscillator coil over the required range. This method has many disadvantages, the chief being due to wear of the condenser bearings. Most modern oscillators

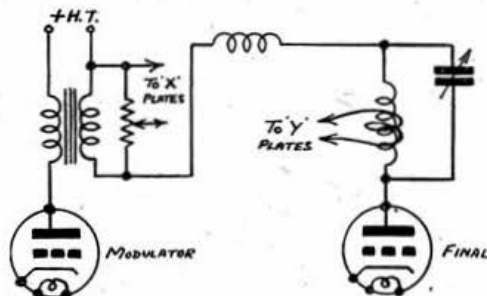


Fig. 4.  
Showing X and Y plate connections for obtaining Lissajous' figures with plate-modulated final.

use electronic "wobulation" which has the advantage of a constant range of variation: also the variations can be triggered by means of the 50 cycle mains, ensuring complete regularity in this respect.

In order to make tests with the Oscilloscope and "Wobulated" Oscillator it is necessary to connect the output of the latter to the receiver input, and the receiver output to the Y plates of the oscilloscope. The time base should then be switched in and synchronised with the mains; the mains will then control both the wobulating and the time base, ensuring a steady trace. The curve thus obtained will represent a graph of receiver gain, plotted against frequency, and will show the overall response of the R.F. and I.F. stages. In many cases it is required to set up the I.F. stages of a receiver to give either maximum output or to have a given bandpass characteristic. In this case the output of the signal generator is connected to the signal grid of the mixer, the oscillator grid being either disconnected or earthed. The mixer then functions (rather inefficiently perhaps) as a straight amplifier and provides the necessary buffer action, thus preventing damping of the first I.F. transformer. It is then a simple matter to trim the I.F.'s for either maximum gain (*i.e.* greatest vertical amplitude) or a flat topped response, obtained by staggering the trimmers.

In all cases where a response curve is to be investigated, the Y plate lead of the oscilloscope must be fed with a D.C. voltage whose magnitude is proportional to the amplitude of the oscillations applied to the detector, and a convenient point to make this connection is on the detector load resistance itself.

When it is not desired to examine the selectivity curves of the receiver the "wobulated" feature of the oscillator is not required. The oscillator should then be modulated by a normal L.F. oscillator which is included in most instruments and can be switched in or out at will. The test lead of the oscilloscope is then connected to the anode of one of the output valves *via* a condenser: since the time base is not used, the trace will appear as a straight line which will lengthen as the trimmers are brought into step.

### Conclusion

The hope is again expressed that Cathode Ray Oscilloscopes, may, after the war, play a more important part in the hands of the amateur. If as a result of these articles there are any who have decided to adopt the Cathode Ray Oscilloscope as standard equipment then their purpose has been fulfilled. The author would like to thank Mr. K. Bowes, without whose valuable criticism these notes would have been even more imperfect.

## VALE, OM!

*In Tribute to a Silent Key*

**W**E stood looking round his shack. Already the dust had gathered a little on the odd collection of gear that remained as a symbol of his passionate interest in "the game."

There was the dynamic mike that for some strange reason had been so hard to get going properly; and beside it the carbon job which had been his end of many a midnight gossip after the DX had faded out.

Here, occupying a couple of shelves, was the receiver—a monument to his gift (a real ham's gift) for improvisation. A home-built preselector coupled to a modified commercial tuning unit, and this fed in turn into the output stage of a B.C. set. Perhaps nobody else could work that job properly; we never could. But *he* could, and with it he "pulled 'em in."

And here on other shelves the multifarious boxes out of which he was always ready to fish the resistor, the condenser, the valve you happened to be short of. "Take it, old man," he would say, "there's plenty there."

And, hanging on the wall, that vast brass aerial ammeter on which he was wont to report, in his precise way, ".035 increase" after certain adjustments in the rig.

That .035 was typical. For he was no rule-of-thumb merchant, this departed amateur. Many's the time when in our rough-and-ready way we would say, "Oh, stick in a half meg. and try it." To which he would invariably respond: "Half a sec.; might as well think why first . . ."

And always he would insist on that fundamental rule of scientific approach. Do one thing at a time and see the effect of that before you try the next thing.

Well, he's gone. The key and the mike will not respond to his touch, his voice, again. QRT . . .

We catch ourselves wondering what all his enthusiasm, all his absorbed "fiddling about" (as he used to call it), amounts to in this final account. He discovered nothing new. He broke no records, won no trophies, worked no miraculous DX. So what?

Let us say this: He was a good amateur.

He had been in the game these many years, but no young squirt ever suffered an inferiority complex in his company. He was always more ready to hear what *you* had done than tell you what *he* had done. He was licensed for 25 watts but rarely put more than 10 into his final. A score of B.C. sets in his neighbourhood are perking because he knew where to put his finger on the trouble.

He pursued knowledge and not fame, was kind and helpful to other seekers. He kept the amateur law—written and unwritten. And he was happy.

All in all, our troubled world being what it is, that is no bad epitaph to earn.

73, old timer!

G8QH.

### News from Kenya

Our old friend Bill Lane, VQ4CRH, writing under date of October 18 from Kilindini, where he is Acting Port Accountant, reports several contacts with G's on active service. He invites any member who finds himself near Kilindini to communicate with him at P.O. Box 9. Normally his home is in Nairobi (P.O. Box 570), so those passing through the capital may like to make enquiries with a view to ascertaining whether he is back home.

# MATHEMATICS FOR THE RADIO AMATEUR

By T. R. THEAKSTON, B.Sc. (2DBK).

## SECOND SERIES—PART VII. GRAPHS—continued.

### The Parabola, $y = x^2$

Problem 22 (Part V) was concerned with the graph of the equation  $y = x^2$ .

This equation is of the second degree in  $x$ , and therefore is not a linear function.

[It is actually a special type of quadratic function, where the general type is  $y = ax^2 + bx + c$ . In the case now under consideration, in the general form  $b = 0$ ,  $c = 0$ ,  $a = 1$ .]

Let the graph of  $y = x^2$  be plotted for values of  $x$  from  $-4$  to  $+4$ .

The following values are obtained:—

$x =$	-4	-3	-2	-1	0	1	2	3	4
$y = x^2 =$	16	9	4	1	0	1	4	9	16

The corresponding points  $(-4, 16)$ ,  $(-3, 9)$ , ...,  $(4, 16)$  are plotted on a convenient scale, and since this graph is of a pure algebraic function, the units for  $x$  and  $y$  are numbers only. In order to obtain the true proportionate shape of the curve, the units for the values of  $x$  and  $y$  should be equal. For convenience in presenting the graph, this practice has not been adopted in Fig. 11.

The resulting curve as shown in Fig. 11 is called a *parabola*; and it presents several points that must be emphasised.

#### (1) The Symmetry of the Curve

This curve is clearly symmetrical about the axis of  $y$ .

The tabulated values for  $x$  and  $y$  indicate this, since, for any value of  $y$  there must be two values of  $x$  which are equal numerically but opposite in sign.

E.g.,  $x = +4$ , and  $x = -4$  give the value 16 for  $y$  because  $(+4)^2 = 16 = (-4)^2$ .

Expressing this in a different way it can be said

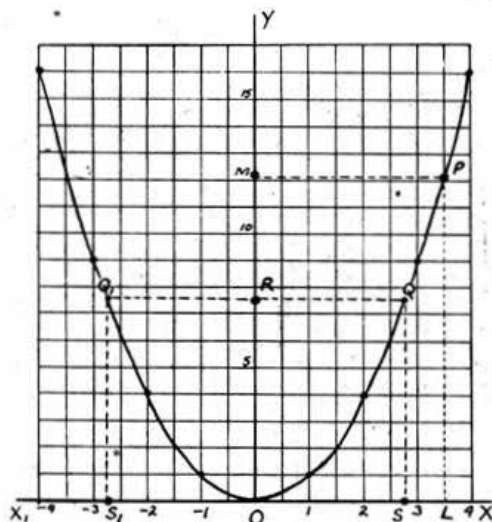


Fig. 11.

The graph of  $y = x^2$ .  $OM = OL^2$ ;  $OS$  and  $OS_1 = \sqrt{OM}$ .

that any value for  $y$  gives two values for its square root.

Thus,  $\sqrt{9} = +3$  or  $-3$ ,  
hence when  $y = 9$ ,  $x = +3$  or  $-3$ .

#### (2) Evaluating Squares and Square Roots

The parabola representing the equation  $y = x^2$  can be used to give the values of squares and square roots. Thus:—

(a) To evaluate  $(3.5)^2$ .

PL is drawn perpendicular to the axis of  $x$  at the point L where  $OL = 3.5$  (Fig. 11).

PM is drawn perpendicular to the axis of  $y$ .

Hence OM gives the value of  $y$  corresponding to the value of 3.5 for  $x$ .

Since the curve is of  $y = x^2$ , every point on it, is such that

$$(\text{ordinate}) = (\text{abscissa})^2.$$

$\therefore OM = (3.5)^2$ , and is seen to be 12.25.

I.e.  $(3.5)^2 = 12.25$ .

(b) To evaluate  $\sqrt{7.5}$ .

At R, the point such that  $OR = 7.5$ , i.e.  $y = 7.5$ , a line is drawn perpendicular to the axis of  $y$  to cut the parabola at Q and  $Q_1$ .

Hence  $QS = Q_1S_1 = 7.5$

and OS and  $OS_1$  are the two values of  $x$  corresponding to the value  $y = 7.5$ .

Since Q and  $Q_1$  are on the curve these values are connected by the relationship

$$y = x^2$$

$$\text{or } \sqrt{y} = x$$

i.e. OS and  $OS_1$  are the values of  $\sqrt{7.5}$

i.e.  $\sqrt{7.5} = \pm 2.75$  approx.

#### (3) The General Equation, $y = ax^2$ .

Let the equation be of the form

$$y = ax^2$$

where  $a$  is a constant.

When  $x = 0$ ,  $y = a \times 0^2 = 0$ , and therefore the curve passes through the origin  $(0, 0)$ .

When  $x = 1$ ,  $y = a \times 1^2$

$$x = 2, y = a \times 2^2$$

i.e. each ordinate will be a times as large as the ordinate for the equivalent value of  $x$  in the curve  $y = x^2$  of Fig. 11.

In other words the curve will be "steeper" [see Fig. 15, Part VIII].

This particular curve is of some importance because it is, when inverted, the path of flight of a projectile in vacuo.

#### (4) The Graph of $y = ax^2 + b$ .

If an equation of this type is represented graphically, with for example,  $a = 3$  and  $b = -1$  giving the equation  $y = 3x^2 - 1$ , the graph will be of just the same form. It will be symmetrical about the axis of  $y$ , but it will be of different proportions and will be in a different position.

With the curve  $y = x^2$ , when  $x = 0$ ,  $y = 0$ , and so the curve passes through the origin.

If  $y = 3x^2 - 1$  when  $x = 0$ ,  $y = -1$ , i.e. the curve has its lowest point at  $(0, -1)$ .

Also the value of  $y$  will increase quickly as compared with the increase of  $x$ . Thus, taking a few values of  $x$  and tabulating the corresponding values of  $y$

$x =$	-3	-2	-1	0	1	2	3
$y = 3x^2 - 1 =$	26	11	2	-1	2	11	26

Plotting these points will give a parabola which is "narrower" than that of Fig. 11. This is shown in Fig. 12.

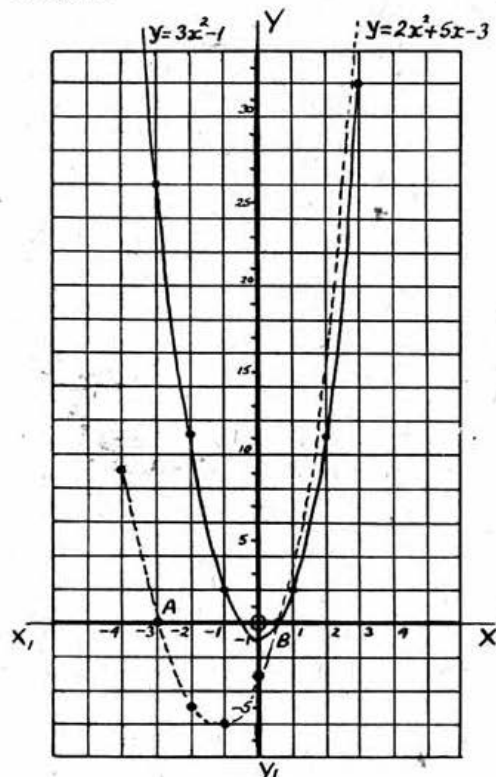


Fig. 12.

The graphs of  $y = 3x^2 - 1$ , and  $y = 2x^2 + 5x - 3$ . AO and OB give the solutions of the equation  $2x^2 + 5x - 3 = 0$ .

### The General Quadratic Function,

$$y = ax^2 + bx + c$$

An example of an equation of this type would be when  $a = 2$ ,  $b = 5$  and  $c = -3$ , giving the equation

$$y = 2x^2 + 5x - 3$$

For this curve, when  $x = 0$ ,  $y = -3$ , therefore the curve passes through the point  $(0, -3)$

Tabulating some values

$x =$	-4	-3	-2	-1	0	1	2	3
$y =$	9	0	-5	-6	-3	4	15	30

Plotting these values, as in the dotted outline in Fig. 12, the curve is not found to be symmetrical

about the axis of  $y$ , neither is its lowest point on the axis. [This fact is clear too from a study of the tabulated values.]

### The Circle, $x^2 + y^2 = a^2$

The equation  $x^2 + y^2 = 16$  of Problem 22 is of the second degree, but it has one further property which the equations previously considered did not possess. It is of the second degree both in  $x$  and  $y$ , and the coefficients of  $x^2$  and  $y^2$  are perfect squares and equal.

[The coefficients are the numbers by which the algebraic terms are multiplied.

In the case of  $x^2$  and  $y^2$  in the equation  $x^2 + y^2 = 16$ , the coefficients are 1; the coefficient of  $x$  in  $7x + 3 = y$  is 7; the coefficient of  $a^2$  in  $b^2 + 3a^2 = 6$  is 3; the coefficient of  $y$  in  $4ay = 3x$  is  $4a$ ; etc.]

$$x^2 + y^2 = 16$$

$$\therefore y^2 = 16 - x^2$$

$$\therefore y = \pm \sqrt{16 - x^2}$$

Giving  $x$  values from  $-4$  to  $+4$ , each value will give two values for  $y$ .

Tabulated values are:—

$x =$	-4	-3	-2	-1	0
$y =$	0	$\pm \sqrt{5}$	$\pm \sqrt{12}$	$\pm \sqrt{15}$	$\pm 4$
$x =$	1	2	3	4	
$y =$	$\pm \sqrt{15}$	$\pm \sqrt{12}$	$\pm \sqrt{5}$	0	

Studying these values, since

$$x = -2 \text{ gives } y = +\sqrt{12} \text{ and } -\sqrt{12}$$

$$\text{and, } x = +2 \text{ gives } y = +\sqrt{12} \text{ and } -\sqrt{12}$$

it appears that the curve must be symmetrical about both the axes of reference.

The points are plotted, and the curve of Fig. 13 is obtained.

It is a circle with the origin as centre and with the radius equal to 4 units.

In fact, generally

$$x^2 + y^2 = R^2$$

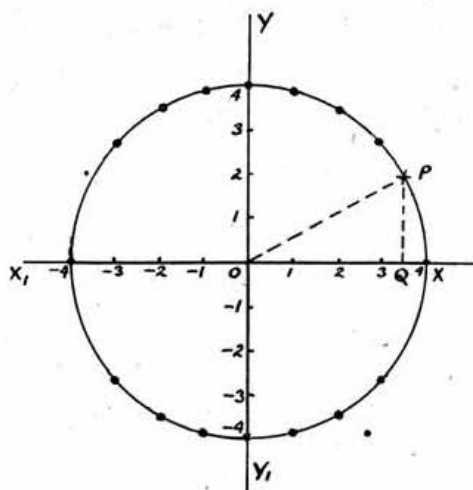


Fig. 13.

The graph of  $x^2 + y^2 = 16$ .



is the equation of a circle, with its centre at the origin, and with radius  $R$ .

As a further verification of this, let  $P$  be a point  $(x, y)$  on the curve.

Draw  $PQ$  and  $OP$  (Fig. 13).

Then  $PQ = y$ , and  $OQ = x$

By Pythagoras' Theorem

$$PQ^2 + OQ^2 = OP^2$$

$$\text{i.e. } x^2 + y^2 = OP^2$$

Comparing this with the equation of the curve

$$x^2 + y^2 = 16$$

$$OP^2 = 16$$

i.e.  $P$  is always 4 units away from  $O$ , and is therefore on a circle with centre  $O$  and radius 4 units.

Plotting these values, Fig. 14 is obtained. This is called a Sine Curve, and it will be seen that in a complete variation of  $\theta$  from  $0$  to  $360^\circ$ , the value of  $\sin \theta$  increases from zero to a maximum positive value, decreases through zero to a maximum negative value, then increasing to zero.

$$y = K \sin \theta$$

If the equation is of this form where  $K$  is a constant, the plotted curve will be of the same general shape, but will have a different maximum ordinate, or amplitude.

$$\text{For } y = K \sin \theta$$

$\theta = 90^\circ$  gives the maximum value of  $y$

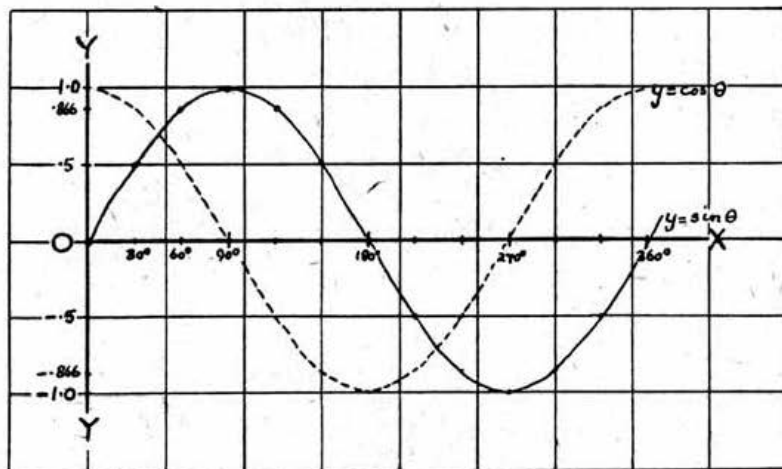


Fig. 14.

The graphs of  $y = \sin \theta$ , and  $y = \cos \theta$ .

### The Sine Curve, $y = \sin \theta$

To plot this curve, which is of great importance in electrical theory,  $\theta$  is given values from  $0^\circ$  to  $360^\circ$ , rising by increments of  $30^\circ$ .

It must be remembered that

$$\sin (180 - \theta) = \sin \theta$$

$$\sin (-\theta) = -\sin \theta$$

The following values are obtained :-

$\theta$	$y = \sin \theta$
$0^\circ$	0
$30^\circ$	0.5
$60^\circ$	0.866
$90^\circ$	1.0
$120^\circ$	[= $\sin 60^\circ$ ] 0.866
$150^\circ$	[= $\sin 30^\circ$ ] 0.5
$180^\circ$	[= $\sin 0^\circ$ ] 0
$210^\circ$	[= $-\sin 150^\circ$ ] -0.5
$240^\circ$	[= $-\sin 120^\circ$ ] -0.866
$270^\circ$	[= $-\sin 90^\circ$ ] -1.0
$300^\circ$	[= $-\sin 60^\circ$ ] -0.866
$330^\circ$	[= $-\sin 30^\circ$ ] -0.5
$360^\circ$	0

$$\begin{aligned} \text{hence } y (\text{max.}) &= K \sin 90^\circ \\ &= K \times 1 \\ &= K \end{aligned}$$

i.e. the amplitude of the curve equals the constant in the equation.

This fact should be noted as it will be referred to later in the series.

$$y = \cos \theta$$

If it is remembered that  $\cos 0 = 1$ ,  $\cos 30^\circ = 0.866$ ,  $\cos 60^\circ = 0.5$  and  $\cos 90^\circ = 0$ , it will be realised that the graph of this equation will be very similar to that of  $y = \sin \theta$ . The difference is that the maximum, minimum and zero values occur  $90^\circ$  before they do in  $y = \sin \theta$ .

The result is that the curve is the dotted one in Fig. 14.

### Solution to Problems

(26) (a) QW/WL ; QL/LW ; WL/LQ.

(b) 20 ; 4 ; 2 4 ; 1 8.

(27) (a) 2, -10. (b)  $1\frac{1}{2}$ , 6. (c) 3,  $-1\frac{1}{2}$ .

(d) None—the line passes through the origin.

(e)  $-\frac{3}{4}$ , 3.

(Continued on page 303).

## WAR COMES TO THE U.S.A.

**J**UST before this issue went to press we received from Mr. K. B. Warner, Managing Secretary A.R.R.L., a copy of a special notice which was included in the January issue of *QST*. In view of the numerous enquiries which have been received at Headquarters in regard to the status of U.S. amateur stations now that the U.S. is at war: we feel justified in reproducing Mr. Warner's statement *verbatim*.

v v v

"In time of emergency, amateur radio steps forward and applies its specialised knowledge to the task of replacing and restoring and supplementing the normal communications system. That is our traditional responsibility—a tradition we have ourselves built and a responsibility we have ourselves sought. War is the gravest emergency of all, and it is now our duty to discharge that traditional responsibility in the war emergency, with discipline and patriotic devotion.

Since December 7, amateur radio has been operating under wartime controls. Eight hours after the first bomb fell in Pearl Harbour, amateur radio as we have known it in peacetime was suspended for the duration. In its place, in the past five days, the volunteer communication system upon which the civilian defence of these shores will be built, has begun to take form.

*FCC's order suspending normal amateur radio, with its hamming and chewing, should be examined simultaneously with its announcement of a mechanism under which amateur stations whose operation is essential to national defence are being returned to the air:*

ORDER NO. 87.

At a session of the Federal Communications Commission held at its offices in Washington, D.C., on the 8th day of December, 1941;

Whereas a state of war exists between the United States and the Imperial Japanese Government, and the withdrawal from private use of all amateur frequencies is required for the purpose of the National Defence;

It is ORDERED, that except as may hereafter be specifically authorised by the Commission, no person shall engage in any amateur radio operation in the continental United States, its territories and possessions, and that all frequencies heretofore allocated to amateur radio stations under Part 12 of the Rules and Regulations BE, AND THEY ARE HEREBY, WITHDRAWN from use by any person except as may hereafter be authorised by the Commission.

By order of the Commission:

—T. J. Slowie,  
Secretary.

FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C.

December 8, 1941.

NOTICE TO ALL AMATEUR LICENSEES.

All amateur licensees are hereby notified that the Commission has ordered the immediate suspension of all amateur radio operation in the continental United States, its territories and possessions. Under this action all amateur radio operation in the

continental United States, its territories and possessions is prohibited until further notice. In any instances where amateur radio operation is deemed to be required in connection with the national defence, appropriate authorisation to engage in such operation will be issued but only upon application by a duly authorised federal, state, or local official made to the Defence Communications Board.

Pay particular attention to the language in the latter portion of the notice: *The way is open for every amateur whose services are desired by proper officials to get back on the air and help.* We should perhaps say 'desired and needed,' because hams aren't going to be able to get back on the air simply because they want to or because they are 'willing to help' or even because they can get some small-fry or 'unofficial' official to certify them. Chiseling is definitely discouraged and there must be a bona-fide defence need to be served. But once there is, the route is open. Our situation, then, is that rather than being off the air we are being resited in what amounts to a species of relicensing under DCB whenever it is apparent that a competent official needs our help. Already, as we write, numerous amateur groups and nets have been activated and returned to the air for a purely defence purpose. It's a new kind of amateur radio but it is still the familiar picture of amateurs and their gear and their traditional skill and loyalty.

### Special Authorisation

Here is some practical information on the mechanism that is permitting defence activities to retain the services of amateur radio—although we should emphasise that in a rapidly-changing situation the information we have to-day may not be entirely reliable by the time this is in print. (Suggestion: Check official broadcasts from WIAW.)

When an authorised public official, such as a governor or a mayor, wires or writes DCB or FCC a description of his proposed communication plan and a statement of why he has to have it, together with the names, calls and addresses of the amateurs he desires to serve in it, he may reasonably expect to receive a prompt response to the effect that the named amateurs are authorised to work in his system until further notice, as an exception to Order 87, for communications directly connected with national defence activities primarily relating to the defence work in his charge. A copy of that authorisation will be sent to each individual amateur concerned and will be his operating credentials.

Note carefully that no authorisations are issued direct to an amateur or simply because an amateur wishes to offer his services. Application for the activation of amateurs may be made only by a duly-authorised federal, state or local official, and must spring from a need. Moreover, that official cannot be given a blanket authorisation to permit operation by any amateurs he wishes. He must first explain his plan and show that the requested operation is necessary to perform a special national-defence function, and then he must name the individual amateurs concerned—not only their calls but their names and addresses as well. One reason for this is that Washington and the monitoring services must have a record of who has been authorised; another

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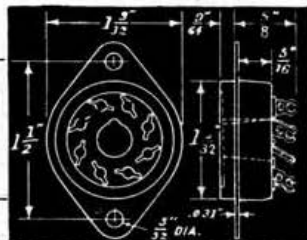
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is that authorisation from DCB must be sent to each individual amateur.

It will be noted that no stipulations of frequencies are required. The thought at the moment is that it is proper and desirable to permit the use of any band needed by an authorised official. Therefore when operation is authorised it is subject to all the usual FCC regulations and the special orders that have recently governed us, but all the usual amateur bands are made available. Most of the nets that have been authorised these last few days have been voice systems on 2½ and 5 metres but some are 80-metre c.w. operation and some are 160-metre and 75-metre 'phone nets, with or without connecting u.h.f. networks at each city.

While it is not permitted the individual amateur to get back on the air solely under his own auspices, there is of course no objection to amateurs, groups, nets and clubs explaining the present mechanism to competent officials who have need of amateur assistance; or to their doing some of the manual work of typing the requests for the signature and certification of the official. Certification, by the way, is not confined to any stated language: when a proper official asks authorisation and asserts that he needs a certain amateur arrangement for a specified defence purpose, that is sufficient certification. There is no standard form, and requests may be telegraphic or by mail. The state defence systems are better known and better organised than many of the local ones and in some states OCD organisation is not very far advanced. If there is room for any doubt about the recognition that DCB would give some particular local co-ordinator of civilian defence, it would be better if the request came from the mayor of the town, or from the chief of police if that is a proper function of the latter in the local plans.

A word here about DCB. Under an Executive Order recently signed by the President, all the latter wartime powers over communications are lodged with DCB. It is at the very top of the wartime communications picture. But DCB is a board, not a commission with extensive personnel, and much of its work will be done for it by FCC personnel. Net result is that the applications we are talking about may be filed with either the Defence Communications Board or the Federal Communications Commission at Washington.

Headquarters urges that all League officials who have contact with authorities who are using amateurs, or who ought to be using them, bring to their attention the mechanism whereby amateur stations may be reactivated and assist them in making requests in proper form. We urge all amateurs to develop an association with a defence activity that will permit them to be returned to the air for that purpose, and then to do their best in the discharge of such duties. Radio amateurs are needed—in some places desperately. We believe we can count upon the amateurs of the country to see their duty, to devote themselves to patriotic service, and willingly to get back on the air for that purpose in large numbers.

### Some Cautions

The nation is at war. Complete Naval censorship of outgoing international correspondence was instituted December 7. Amateurs in defence work are on their honour to censor themselves similarly. *The permits now given amateurs rigidly confine them*

*to defence operation.* No ragchewing will be tolerated and the fellows who engage in it will fare much worse than simply to lose their permits. The NDO monitoring service daily receives lists of the amateurs whose return to the air has been authorised and it is a safe bet that FBI will walk in pretty promptly on any gatecrasher who is not specifically certified for defence operations. As we value our return to the air, let there be no monkey business about this. If we are undisciplined or just playing around, or are incautious in our remarks, the War Department is practically certain to wash us up promptly and permanently and we would thereby forfeit our one chance to be on the air. They can't take chances with us if we don't show ourselves to be absolutely trustworthy. We'll all have a serious purpose but we mustn't even be careless, not even for a moment.

It is also emphatically worthy of notice that the suddenness of the emergency has given us tasks that were not originally contemplated for us, so that we are in the presence of our one big chance to make good. Let no careless amateur spoil this.

There are no specified details on what a net or group may or may not do. The agency for whom the group is authorised is in charge of its operation. If that agency says there may be no closing of switches until there is traffic of that agency to be handled, then there is no closing of switches. If that agency orders daily or hourly testing of the net, that testing is proper. If mayors or other proper local officials handling civilian protection work say that u.h.f. rigs must be installed and tested, that makes it proper for authorised amateurs to do so. But testing means disciplined testing and there must be *no idle gossiping and chewing the fat.*

Let it also be clearly understood that the amateur regulations are in full effect on those who are put back on the air. That means, among other things, that only licensed amateur operators may control the equipment; that the required log must be kept; and that great care must be taken to prevent unauthorised persons from having access to the apparatus.

### Civilian Protection

When war came, OCD's planning for civilian protection in air raids was still incomplete. Naturally this work is now being accelerated tremendously, particularly on the seaboard. Within a few weeks it may be expected that every vulnerable community will have its organisation well in hand. We learn that each local co-ordinator of civilian defence is being called upon to appoint a competent communications administrator with the duty of creating and managing the community communications plan. It is under this official that we amateurs will participate in the ARP work. Thinking over the communications facilities that exist in cities with which we are familiar, it seems to us that the only systems that satisfy the need for the primary network are the wire telephones and the municipal signalling systems. Other facilities inevitably will be pretty random and catch-as-catch-can. It is imperative that the community possess a secondary system to go into operation whenever the primary one is interrupted—or, for that matter, whenever it begins to near its capacity, so that there may be retained in it some elasticity for the traffic of higher priorities. The backbone of this secondary system necessarily is amateur radio with its u.h.f. Thousands of us are needed with our home-built low-powered gear, to aid

the communities in which we have lived and worked. Our job will be to bridge the gaps that occur in the primary system, to deal with critical overloads, and to provide portable or mobile service for incident officers, wardens and so on.

OCD is according definite recognition to amateurs. Instructions are being sent the local volunteer enrollment centres that will soon make it possible for all radio amateurs reporting locally for registration to be "earmarked" exclusively for communications work. In the meanwhile, we repeat that all amateurs interested in the protection work in their community should register themselves with the local ARRL Emergency Co-ordinator, which is our only way to have a group spokesman to represent us until the time the communities open amateur enrollment and appoint the local communication aide to the CD chief. Our Emergency Co-ordinators have now been instructed by the League to report at once to the local co-ordinators of civilian defence to arrange *something* to serve during the critical period until organisation can be perfected, or to lay the facilities of our gang before the mayor or chief of police in cities where OCD work is not yet sufficiently advanced.

In the current situation no city in America can feel itself entirely safe and some are definitely anything but immune. We can see our job: if trouble comes to our home town, we'll be needed, for we are the only ones who can help when the wires go dead. We must build movable self-powered u.h.f. sets after the general prescriptions of *QST*—build them by the thousands! We must enroll for operating work with our gear—temporarily with our own ECs, later through the volunteer centres. We must help our communities in the actual job of organising and lend them aid in securing the required special authorisation for amateur communication assistance.

#### Disaster Relief

All the foregoing arrangements relate to defence communications in the *military* emergency. At the moment of writing, no provision exists for the usual amateur aid in the event of interruption of communications by *natural* disasters such as floods, hurricanes or earthquakes. The activation of a defence net for this purpose would seem to be unauthorised unless the agency for whom the net was organised could establish that the disaster was also imperiling national defence.

Officials of the League are urgently endeavouring to obtain government approval of a formal plan whereunder amateurs may maintain their time-honoured duties in this field, in the knowledge that Nature is no respecter of military emergencies. Should a disaster occur before such a plan is put into effect, the League will urge FCC to broadcast special authority to *all* hams in the affected area to get on the air and help. If this occurs, we can do the usual job, but it will be no excuse for a clambake and again we must confine ourselves strictly to the job in hand. Meanwhile all amateurs must distinctly understand that unless they do receive some such authority they may not come on to the air for this purpose, even though communities are suffering.

#### Watch for WIAW

The regulatory situation is likely to change from day to day, hour to hour. New rules may come out at any time. By special federal authority, our headquarters station WIAW is remaining indefinitely on

the air conveying Government announcements to amateurs and watching over our bands. Whenever there are new needs or new rules affecting the amateur in defence work or disaster work, it may be expected that WIAW will bring you the news faster than any other means. Keep an ear out for it.

#### Tears and Cheers

If we had the time, in our rush to get these special pages to press, we'd pause to shed a tear over the fact that for the first time in over twenty-two years the fun and camaraderie and rough-house of the amateur bands are stilled. Instead, we have a call to arms. If we could afford the luxury of a more leisurely mood, there are some deep-down-in-the-heart remarks we might make about that situation, and some pointed ones we'd like to get off on the cause of it all. But *QST* is basically the medium of our particular art and we are already a group of people schooled in industry, patience and conscientious application to our responsibilities. In the position of America to-day, Headquarters sees no need for flag-waving when it addresses the membership of the American Radio Relay League. We are a mature group and our emotions toward our country need no artificial stimulus. The field of the League is amateur radio and we have here confined ourselves to practical considerations in the application of that skill to the nation's needs. The dear glad days are necessarily gone for a while and there is no time or place for tears. Instead of the old kind of amateur radio, our actions are now directed solely to the assistance of the defence of the nation, at the urgent request of competent officials. Our stations, our operating ability, our devotion are being summoned for innumerable communications tasks of the sort that only we are prepared to discharge. We are now engaged—all of us—in the traditional duty of amateurs: supplying all-essential communication in an emergency. Let it be our high resolve that we shall never be found wanting!

December 12, 1941,

K. B. W."

## KILOCYCLES TO METRES CONVERSION TABLES . .

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## EXPERIMENTAL SECTION

### Transformer Design

**F**OLLOWING up the general notes published last month dealing with the design of small power transformers, an actual example is worked out below to show the application of the information which has so far been given.

Assume that an old transformer has been dismantled leaving a core of the dimensions shown in the diagram, and that the core is 2 in. wide. It is required to design a transformer which will give an output of 400 volts at 100 m/A from 230-volt A.C. mains and in addition supply two filament lines with 4-volt 2-amp and 6-volt 2-amp respectively.

Data.	Explanations.
<p><b>Secondary.</b></p> <p>Watts.</p> $\begin{aligned} \text{H.T.} &= 400 \times 0.10 = 40 \\ \text{L.T.}_1 &= 4 \times 2 = 8 \\ \text{L.T.}_2 &= 6 \times 2 = 12 \\ &\text{Total } 60 \text{ watts.} \end{aligned}$ <p>Core area (middle leg).</p> $\begin{aligned} 1\frac{1}{2}'' \times 2'' &= 2.5 \text{ sq. in.} \\ \text{Less 10 per cent.} &= 2.25 \text{ sq. in.} \end{aligned}$ <p>Flux density. (B).</p> <p>60000</p> <p>Volts per turn.</p> <p>0.3 volts.</p> <p>Turns required.</p> $\begin{aligned} \text{H.T.} &= 400/0.3 = 1333 \text{ turns.} \\ \text{L.T.}_1 &= 4/0.3 = 13.3 \text{ turns.} \\ \text{L.T.}_2 &= 6/0.3 = 20 \text{ turns.} \end{aligned}$ <p>Size of wire (sectional area).</p> $\begin{aligned} \text{H.T.} &= \frac{0.1}{1200} = 0.00008333 \text{ sq. in.} \\ \text{L.T.}_2 &= \text{L.T.}_1 = \frac{2}{1200} = 0.001667 \text{ sq. in.} \end{aligned}$ <p>Size of wire (gauge).</p> $\begin{aligned} \text{H.T.} &= 30 \text{ gauge.} \\ \text{L.T.'s} &= 18 \text{ gauge.} \end{aligned}$	<p>From the required outputs given above.</p> <p>From the measured core 10 per cent. deducted for stacking. From the curve given in the December issue it will be seen that the wattage required of the transformer is well within the rating of the core.</p> <p>A good value to choose for a start.</p> <p>Read from the chart published in the January issue, given flux density and core area.</p> <p>Voltage divided by volts per turn.</p> <p>Amps divided by 1200 (being the suggested current density per sq. in.).</p> <p>Amps divided by 1200.</p> <p>These can be obtained from Wire Tables. Actually 32 guage is the nearest to the calculated sectional area but as there appears plenty of room 30 gauge is chosen and this will be easier to wind and will run cooler.</p>
<p><b>Primary.</b></p> <p>Watts.</p> $\frac{60}{0.9} = 67 \text{ watts.}$ <p>Current.</p> $\frac{60}{0.81 \times 230} = 0.322 \text{ amps.}$ <p>Wire size (area).</p> $\frac{0.322}{1200} = .00027 \text{ in.} = 24 \text{ gauge.}$ <p>Turns required.</p> $\frac{230}{0.3} = 766 \text{ turns.}$	<p>From formula : Primary watts = <math>\frac{\text{sec'y. watts.}}{0.9}</math></p> <p>Secondary watts divided by 0.81 times primary voltage. (Assuming power factor approx. 90 per cent.)</p> <p>Amps divided by 1200. Nearest larger size in wire tables.</p> <p>Volts divided by volts per turn.</p>

With the first part of the design calculations finished we can summarise as follows:—

Winding.	Wire.	Turns.
Primary	24 gauge	766
H.T. sec'y.	30 "	1333
4-volt sec'y.	18 "	13.3
6-volt sec'y.	18 "	20

The next calculation is to determine whether the designed turns will fit on to the transformer core, and this is carried out with the aid of Wire Tables.

The space available for the windings is  $2\frac{3}{8}$  in.  $\times$   $\frac{3}{4}$  in. although not all of this can be used for the actual wire as allowance must be made for the bobbin, inter-turn and interlayer insulation. Further the theoretical width ( $2\frac{3}{8}$  in.) cannot be realised as this would result in a short circuit occurring between the windings and the core at the edges.

Assuming D.C.C. wire to be used:—

Primary (24 gauge) dia. of wire = .022 in. (plus .009 in. for covering) = .031 in. total.

If  $2\frac{3}{8}$  in. out of the  $2\frac{3}{8}$  in. available is utilised, the number of turns which can be accommodated into one layer is equal to:—

$$\frac{2.5}{.031} = 80 \text{ turns (approx.)}$$

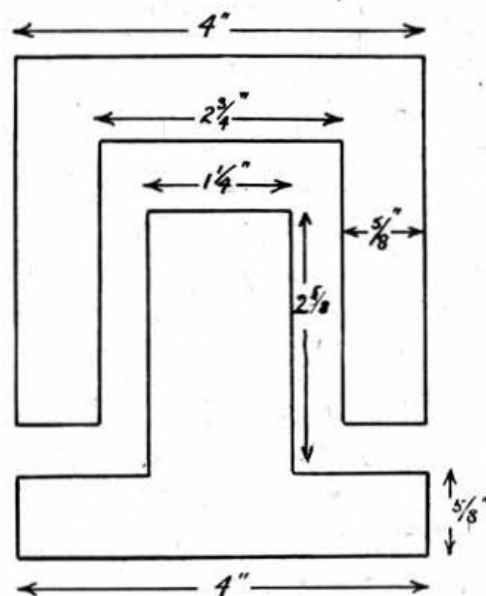
$$\text{Therefore the number of layers} = \frac{766}{80} = 10 \text{ approx.}$$

This means that the primary winding will take up  $10 \times .031 = .31$  in. of the available .75 in.

Secondary (30 gauge wire) = .0125 dia. of wire = .0125 in. (plus .009 for covering) = .0215 in. total.

$$\text{Turns per layer} = \frac{2.5}{.0215} = 116.$$

$$\text{Number of layers} = \frac{1333}{116} = 12 \text{ approx.}$$



Core dimensions used as an example for the design of a 60-watt transformer.

Thickness of secondary H.T. winding =  $12 \times .0215 = 0.26$  in. approx.

Allowing .05 in. for insulation between primary and secondary the total thickness of the two windings is .31 in. + .26 in. + .05 in. = .62 in.

This leaves .75 in. — .62 in. = .13 in. for the bobbin and both low tension secondaries, which is quite impossible. In order therefore to make the design possible one or more of the following steps will have to be taken:—

1. Increase the flux, and therefore the volts per turn. This will result in a reduction of the number of turns for each winding.

2. Use smaller gauge wire.

3. Use same gauge of wire with thinner insulation (e.g. only single cotton covered wire or enamelled wire).

In our example let us redesign both primary and secondary windings with enamelled and single paper covered wire instead of double cotton covered wire. This will amend the total diameter of the primary wire from .031 in. to .0255 in. and the secondary from .0215 in. to .015 in. which will mean an increase in the number of turns per layer to 98 and 160 respectively. The number of layers now required for each winding will be: primary 8 and secondary 9. The thickness of each winding will be  $8 \times .0255$  in. = .204 in. for the primary and  $9 \times .015$  in. = .135 in. for the secondary. Adding .05 in. for inter-winding insulation the total thickness of the two windings will now be .204 in. + .135 in. + .05 in. = .39 in. approx., as against .62 in. in the original design.

If the thickness of the bobbin is .1 in., and .05 in. is allowed for insulation between high and low tension secondaries, then the space left for the low tension windings and the final outer taping is:—

$$.75 \text{ in. less } (.39 \text{ in.} + .1 \text{ in.} + .05 \text{ in.}) = .21 \text{ in.}$$

This provides ample room for the few turns required and will enable the final winding to fit easily on to the core without having to force it on. The design is now completed and it remains to calculate the efficiency, which will be considered next month. G5HF.

### Thames Valley Amateur Radio Transmitters Society

Mr. L. Cooper, G5LC, one-time Hon. Secretary of the T.V.A.R.T.S. is anxious to hear from ex-members with the idea of opening up the society on a war time basis.

The T.V.A.R.T.S. is still affiliated to the R.S.G.B. and has a small cash balance left from the close-down. Mr. Cooper's idea is not so much the starting of an active Radio Society, but rather to provide some means of keeping everyone in touch. To that end he suggests circularising Service and evacuated members with a news-sheet of addresses and activities. All who are interested in this suggestion are asked to communicate with Mr. Cooper at 3 Summer Avenue, East Molesey, Surrey, sending him some news of what they are doing, providing it is not a secret! G5LC is particularly anxious to hear from G2NN, 2LA, 2KI, 2DOK, 5VB, 6PK, 6GB, and 6MK.

### P. of W.

Mr. A. E. Richardson, father of 2CXT, informs us that his son's new address is L.A.C. A. R. Richardson, B.P. of W. No. 24437, Stalag VIII B, Germany.



## BOOK REVIEWS

**THE RADIO AMATEUR'S HANDBOOK.** (19th edition, 1942.) By the H.Q. Staff of the A.R.R.L. 552 pages, approximately 680 illustrations, and over 100 charts and tables. Published by the American Radio Relay League, Inc., West Hartford, Conn. Obtainable through R.S.G.B.; Price 10s. (8-12 weeks delivery).

Every edition of the A.R.R.L. Handbook has had many new features, and this edition is similar to its 18 predecessors in that respect. One of the major improvements in this edition is that the book has been divided into two main sections: the first deals with theory and design, and the second with construction of equipment. This change has been made, one understands, mainly with "defense" needs in mind, and it would seem clear that in its present form the Handbook will be "serving" most efficiently in the training of radio personnel for the U.S. Services, just as its British counterpart has done for some time with our own forces.

Both sections of the book have been cross-referenced quite adequately, and references in the text direct the reader to relevant QST articles, quoted in a bibliography at the end of each chapter.

There will be little need, after three-quarters of a million copies have already been distributed, to say what this book covers and how well it does its job; that is well-known. So the writer will confine himself to the changes and new material now appearing.

A short treatment of the theory of frequency modulation is introduced in the radio-telephony and receiver chapters, and descriptions of F.M. apparatus appear later in the constructional section.

The chapter on receiver construction includes some very simple and inexpensive receivers designed for the beginner, as well as a seven valve S.S. receiver of the regenerative type.

Twenty transmitter units and eleven power-supply units are described in the chapter on transmitter construction—a 50 per cent. increase. Units which may be combined to form complete transmitters, from power supply to aerial tuner, are described in sequence.

The V.H.F. section has been enlarged. There are V.H.F. converters for use with communication receivers or with a special F.M. amplifier. The transmitter equipment has a very special interest at the present time, though a number of our readers may, silently, find it a little incomplete.

The chapter on measurements has also been completely revised and rewritten. About one-third is concerned with frequency measurement.

The tables of valve data include 50 new types, and much new data of various sorts are given.

There is practically no indication in this book, save a slight reference to "the current international situation," that the greatest struggle in history is raging; but the amateurs of democracy are making history which may be told in future editions, and one can look with every confidence to the worthy part which the American "ham" will play—he has got "what it takes."

This edition is a most worthy successor in the long line; more particularly so as it will probably perform a real national service. As ever, it is "up-

to-the-minute," and the writer had difficulty in keeping his copy out of borrowing hands long enough to do this short review. T.P.A.

**ACCUMULATOR CHARGING.** (7th edition.) By W. S. Ibbetson, B.Sc. A.M.I.E.E., M.I.Mar.E. Pitman, 165 pages; Price 6s.

Among the infinity of subjects which must be understood by electrical and radio tradesmen is that of Accumulator Charging. Mr. Ibbetson's book (now in its Seventh Edition) has, for long been regarded as a "minor classic," because it is one of the very few authentic treatise on accumulator charging available at a reasonable price. An excellent introductory chapter, which explains the electrical circuit in some detail, is followed by chapters on Electrical Power, the Production of Electrical Energy, the Effects of Charge and Discharge, Capacity, Modern Accumulators, Battery Charging on D.C. Supply Circuits, Generator Methods of Charging, Accumulator Diseases and their Treatment, Repairs, Alkaline Cells, Country House and Private Plants. An appendix contains the City and Guilds Examination Questions for the years 1935-1940, covering the Motor Vehicle Electricians' Course.

The treatment of the subject is very comprehensive whilst the 40 odd diagrams and photographs assist the reader in following the text. The section dealing with the use of Westinghouse Metal Rectifiers could perhaps be amplified in future editions in view of the extensive use of these devices for charging purposes both in and out of the Services.

We can confidently recommend this book to all who have occasion to study Accumulator Charging methods. J.C.

**THE NATIONAL STANDARDS OF MEASUREMENT.** By Lyman Briggs, National Bureau of Standards, Washington, D.C.

The purpose of this publication (No. 3610)—which is an extract from The Smithsonian Report for 1940,—is to present a brief historical account of the present status of U.S. National Standards of Measurement. Details are given of the National Standard of Frequency which is maintained by means of seven quartz oscillators with natural frequencies of 100 or 200 kc/s. These oscillators are carefully protected from external vibration and the temperature and pressure are closely controlled. The oscillators are intercompared constantly and are also compared daily with time signals from the Naval Observatory. This group of oscillators serve to control the precision of the standard frequencies of 5,000 kc/s, 10,000 kc/s, and 15,000 kc/s which are broadcast several days each week from the Bureau Station WWV, at Beltsville, Maryland. These frequencies do not deviate more than one part in five million from the assigned value.

Other subjects dealt with in the publication are the Standard of Resistance, the Standard of Electromotive Force, and the Absolute Determination of the Ampere.

Copies of the publication can be obtained from the Smithsonian Institution, Washington, D.C. J.C.

# KHAKI AND BLUE

In an Air mail letter from the M.E., dated December 10, Sig. V. Bartlett, GW5BI, reports having met SU1SG and 1RL at the home of the former. An R.S.G.B. sign hanging on the wall in an Alexandria Club brought about the contacts.

GW5BI wishes to be remembered to all old friends in District 10, especially those who "burnt midnight oil" with him on 1.7 Mc.!

▼ ▼ ▼

Congrats to our newly-elected member of Council, G. M. R. Scott Farnie, GW5FI, who has recently been promoted Wing Commander, and to old timer C. W. Andrews, G2TP, on his promotion to Major in the Royal Corps of Signals. G2TP is at present stationed near Trowbridge.

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A.C.2 Cyril Turner, G8NL, on a radio course at G.R.T.U. in Scotland, wishes to be remembered to old friends in Bury, Bolton, Blackburn and Manchester. Cyril hopes that all members on the course will make a point of contacting him *via* GM6ZV.

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Sigm. Joe Raby, G8RF, who is serving with the Royal Signals, tells us he is an instructor at 3rd G.T.T.B. Others with him are L./Cpl. J. Etherington G5UG, and L./Cpl. J. Judson, G4CD, whilst many other hams, including G8KV, GW2GV, 2AMY, 2DMZ have passed through the school at different times.

Joe, who is anxious to hear from old friends in the Wolverhampton area, laments the absence of local news in District 3 notes. Letters should be sent *via* his home address, 20 Lord Street, Wolverhampton.

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Apocryphal the paragraph published on page 208, December issue, Mr. J. Dickson (W. Tel., R.N.V.(W)R.) G2HV, asks us to point out that the person referred to as G2HV was not the pre-war licensed holder of that call. BRS4098 please note!

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L.A. C. G. Cousins, BRS4371, who is training as a pilot in Canada, states that his wireless instructor is VE4AJJ of Edmonton. They have enjoyed many interesting chats.

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Congrats to Tel. J. A. T. Bousfield, 2FQQ, on his recent marriage. He is now in South Wales, where he is in touch with G2UL, 4GL and 5FN. Whilst at Portsmouth he met G2QM, 3XV, 4JN, GM3UM and 2HDC. 2FQQ hopes that it will be possible to arrange a meeting in Cardiff at an early date.

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A.C.2 J. D. Lambert, G3TA, now on his way to an overseas destination, wishes to be remembered to old and new friends. He hopes to meet the SU gang and

maybe ZD4AB, whom he has not heard from for many months. His address is R.A.F. Headquarters A.P.O. 1545.

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Sgt. R. Bullock, 2HHX (R.A.), who is stationed near Sidcup, Kent, reports that G2CH, 3BG, VE4AAB and 4DV are with him on a course. They hope to attend future London meetings.

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From F. H. Trowell, 2HKU, of Sheppey, we learn that F. H. Lane, G3GW is now in Ontario, Canada, with the R.A.F.

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F./Lt. G. A. Houghton, G3RG, informs us that 2nd Lt. Earle Smith, W4DSG, was recently at his station "gathering gen" but unfortunately he was called back to the U.S. before a proper farewell party could be arranged. G3RG who is somewhere in Kent sends 73 to old friends, especially to P./O. Brian Terry, G3PW who has recently gone overseas.

▼ ▼ ▼

G. V. Haylock, 2DHV, whose home address is 28 Longlands Road, Sidcup, is now stationed near



An Early Bird is Caught

The bridegroom is Cpl. Leslie Coupland, 2BQC, the best man is Cpl. Bedwell, G8DT, the parson is Len Hodge, G6LH. Arthur Gee, G2UK, was the photographer

Ipswich, and is looking for contacts with the local hams.

R. F. Nicholson, 2DOH, serving with the R.A.F. in Egypt wishes to be remembered to his friends in the Gravesend and Medway area.

F./Lt. G. L. Woollatt, G3ZI, before leaving for an overseas destination asked that his 73 be conveyed via THE BULLETIN to old friends everywhere.

D. Carr, G2XU, in announcing his promotion to Sergeant mentions that he has been in touch with the Bolton T.R. with a view to arranging meetings between the locals and R.A.F. personnel in and around that town. We learn that Jim Davies, G2OA, who was recently married is now at No. 6 S.S. G2XU can be reached at 63 Manchester Road, Bolton.



Sgm. J. B. Kay, G3CO, of Blackpool, now a prisoner of war in Italy, took part in the Greece and Crete campaigns.

In an Airgraph letter to Sam Jeffs, G3PR Cpl. Ernie Lawden, G3SS who is serving with W./T. Fitting Parties, R.A.F., H.Q.M.E., mentions that G2LF, 2PA, 2PS, 3NX, 8BA, 2DQI and 2FQZ, are associated with him. Letters for any of these members may be sent via G3SS whose R.A.F. number is 760910.

Sgt. N. Owen, G4KS, writing from Northern Ireland where he is serving with the R.A.F., expresses the hope that he will contact some GI's during his stay in the Emerald Isle. Having recently passed out as wireless operator-air gunner he is now with an operational squadron.

Mr. A. Rayner Jones, holder of the call G4GL, advises us that A.C.2 Derek Bamber, whose accidental death was referred to last month, was a pupil of Park Hill School, Birkenhead, at which school Mr. Jones Physics Master. Mr. Bamber assisted in the erection of the station which was operated from Mr. Jones' home.

Cpl. P. E. Taylor, G4RX, whose home address is 134 High Street, Barnet, wishes to be remembered

to his friends in District 12, especially G3GX and 3MS. Although G4RX missed going to France with "The Early Birds" he soon found plenty of ham company at Balloon Command Signals where he stayed for two years. During that period he met G4PY, 5GS, 8UL, 2BOI, 2FUC, 2FVM, VE4VP and ZL3FX.

He is at present the only W./Mech. at an R.A.F. station in Worcestershire where he is working on American aircraft fitted with "wizard" equipment.

P.O./Tel. R. A. Collins, BRS4250, writing from No. 8 Mess, H.M.S. *Duke of York*, reports upon an interesting visit he made recently to an A.R.R.L. meeting where the defence scheme outlined in this issue was discussed. We gather from Collins that licences are still being issued in America, the idea being presumably to get newcomers trained in amateur technique.

Friends of Larry Richards, G3YM, whose home address by the way is The Cricketers, Epsom Common, will be interested to hear of his promotion to Captain. He is doing some especially important work but hopes to look in at a few meetings before the "sound of the willow" falls again on our ears. Incidentally, the above information reached us from his mother, Mrs. Reina Richards, whose interest in ham radio is no less than that shown by her son.

Under date of November 23 (two weeks before the "balloon went up" in the Pacific) Pat Fraser, G8ST, wrote from Kelantan to report "all well." Before moving into Malaya, Pat was in VU but by bad luck did not meet a single ham.

One paragraph from his letter makes strange reading in light of recent events: "As far as I have been able to make out there has never been a ham up here. What the prefix would be I don't know, but, if possible, I should like to get going from here after the war for a short time and give fellows a 'new country.'"

Pat's QRA, at the time of writing, was described as "lousy, with antenna rods as high as anyone



A.C.2 A. W. Ryley, G4NX, of Birmingham, seeks contacts at No. 3 S.S.

could desire. This part of Malaya is all jungle and it is raining continuously." To help cheer him up mosquitoes appeared in thousands every evening.

After saying some nice things about the BULL, 8ST concluded his letter by asking us to pass on his 73 to all old friends.

Wherever you are when this issue arrives we hope you are still retaining your cheerfulness. Good luck, Pat.

▼ ▼ ▼

Heading his letter "Hail District 2 notes," L.A.C. Reg Farr, G8IJ, whose home was near Barnsley before the war, laments the lack of news from the county of broad acres. He would like to hear from G5IV via his mother's address "Helvellyn," Hookfield Lane, Bridgnorth, Shropshire.

Mrs. 8IJ is now in the W.A.A.F. and as they were both on leave in Nottingham during the early part of January, we imagine there were high jinks at one or two places.

Ham activity is at a low ebb at Reg's station but he occasionally has a surprise QSO, such as one with G8KI whom he met whilst at a night fighter squadron in the area.

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Cpl. H. S. Chadwick, G8ON, tells an amusing story against himself. As the attendance was a bit thin on the occasion of a recent No. 1 S.S. meeting, he decided to try to whip up the numbers by going out into the darkness and signalling "Test" on his torch. From the depths of the black-out came the high pitched voice of a W.A.A.F.: "Put that torch out, what d'you think you're doing—your homework?" Poor old "Chaddy," fancy being mistaken for a U/T Wop!

▼ ▼ ▼

L.A.C. S. L. Jacobs who submitted his application for membership from Asmara, M.E.F., where he was stationed early in December, was fortunate in finding plenty of ham company on the troopship that took him abroad. Among those he met were G2FC, 3CR (also at Asmara), 4DF, 4IV, GW2WG, 2CIB, and 2FXS. He would like to hear from Harry Larter, G3AB, who is believed to be in the M.E.

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Cpl. P. G. Skane, BRS4059, of Beckenham, the first member to write from No. 4 S.S. mentions that several other hams are with him, so perhaps we shall soon have the pleasure of attending a meeting at yet another R.A.F. school. New arrivals are urged to get in touch with Cpl. Skane at Hut 2, No. 2 Wing.

▼ ▼ ▼

From an R.A.F. station in Lincolnshire, F./Lt. H. W. Simpson, G8DI, reports that his latest supernumerary officer is Harry Boakes, G8SB. A further surprise occurred when "the Air Ministry bloke who came to help with my D/F gear" turned out to be G8WI.

One of G8DI's latest jobs is to give a series of practical lectures at No. 2 S.S. to U/T W/Op A/G's. We wager every class will be asked one question, "any hams present?"

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Congrats. to H. Punch (G6UR) upon his promotion to Chief P./O. Telegraphist. Hedley's efforts to arrange a meeting in the Isle of Man have so far

proved abortive because the "ham" population is of a roving nature. Ft./Lt. L. Blundell (G5LB), who was until recently stationed in the Island, is now somewhere in Scotland, whilst Chief P./O. Tel. Len Deadman (ZB1X) had a short stay there before going south. The latter is now in the Merseyside area. W/Tel. Dickson (G2HV) is in the Island, but expects to leave for Scotland this month.

▼ ▼ ▼

## Welcome back to G

After two and a half years of excitement, sufficient we warrant to fill many books, Wing Commander Viscount Carlow, G6XX, has at last arrived back in London. For many months he was an Air Attache at Helsingfors but when things began to happen in Finland he was transported "secretly," according to the National press, to an unknown destination. Actually Lord Carlow has been in Lisbon for the past year.

He wishes to be remembered to old friends on and off Council (he was Hon. Treasurer at the outbreak of war).

▼ ▼ ▼

Another traveller, in the person of Sub-Lt. Taber, G3GU, has just returned to London after training as a F.A.A. observer in the place where Minnie came from! By this time he may be starting fresh adventures. He too asked, when at Headquarters, that his greetings be sent to all old friends.

▼ ▼ ▼

## Queer World

The many friends of D. J. Shaw, GM3RL, will learn with surprise and possibly consternation that after being discharged as unfit from the M.N. he was called up within a week for a Services "medical," and in spite of the loss of his left eye and a permanently stiff right leg at the knee (both due to enemy action) he was passed as Grade III!

It's a queer world and no mistake.

GM3RL whose home is at 46 St. Swithin Street Aberdeen, cordially invites any ham in that area to get in touch by letter or phone (Aberdeen 6095).

## Are you at No. 1 S. S. ?

If so you are invited to attend a

## HAM FEST

at

The Queens Head, Kirby la Thorpe

SUNDAY, FEBRUARY 22nd, 1942

At 3 p.m.

Tickets 2/6 each

from G6TV (57, North Parade, Sleaford), or  
from G8ON (H.Q. Wing)

EARLY RESERVATION ESSENTIAL



### News from No. 1 S.S.

The January meeting held in Hut 2 was supported by five U.S. amateurs (W3IMH, 4GWW, 6QNS, 7DCZ, 8TKA), in addition to some twenty others from Jamaica, Canada and Great Britain.

It was unanimously agreed to hold a Hamfest at The Queens Head, Kirby La Thorpe, on Sunday, February 22, at 3 p.m. Tickets, price 2s. 6d. each, can be obtained in advance from G8ON, VE5AAG (both attached H.Q. Wing), or from G6TV (Hon. Secretary, R.A.F.A.R.S., 57 North Parade, Sleaford).

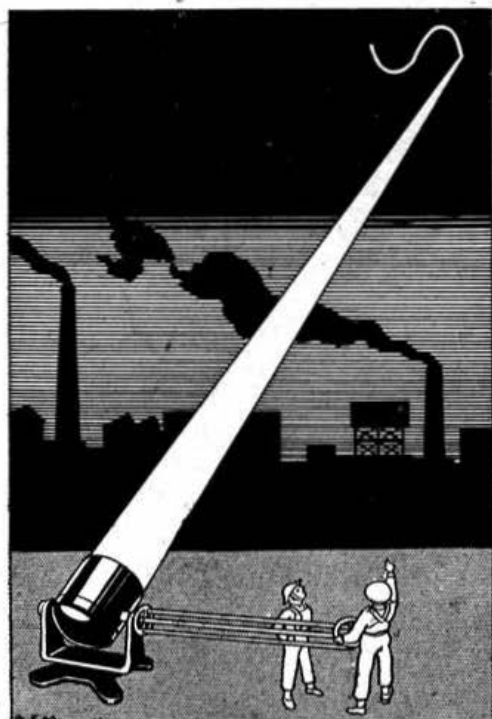
Following the business meeting, a discussion took place on the best method of approaching the problem of standardising RST reports and how the human element can be eliminated.

To demonstrate the need for some foolproof system a signal was tuned in on a receiver in the shack, and members were asked, each in turn, to listen and note down their report. Comparison of reports revealed a startling discrepancy and many helpful suggestions came forward. (We should welcome views from members on this interesting topic.—Ed.).

N. D.

### Have You Read This Book?

Members who like their light reading flavoured with crime will be interested in the novel "For Murder Will Speak," by J. J. Connington (published by Hodder & Stoughton). It is unusual to find a reference to Amateur Radio in fiction and here it not only plays quite a prominent part but, also, happily, is described very accurately. In the book,



Submitted by K. Beauchamp, BR54167.

"... and if you insert a 50 cycle wave on the X plates you will get a wave-form like this."

Jim Telford, GM3EB, is Suspect No. 1 and his alibi is a QSO with another amateur. It would spoil another's reading to say whether we have a murderer in our ranks!

Those who like mystery novels will find this a very well thought-out novel with the added attractions of Amateur Radio included. The way in which our hobby is described is so well done that the writer wonders whether the author is himself an amateur. L.H.

### The Wireless Operator

(Dedicated to those who wear headphones)

*If you can keep your nerve when all about you  
Are jamming stations and are blaming you ;  
If you can hold the air though others flout you  
Until you get the longest message through ;  
If you can send and not grow weary, sending  
Or overtire the man who has to read ;  
If your mistakes are few and prompt their mending  
If you believe that haste is never speed ;  
If you can calmly contemplate the chatter  
Of greenhorn operators fresh from school ;  
If you can sit with messages that matter  
And wait until they're finished and be cool ;  
If you can read through half a dozen stations  
The weaker stations meant for you ;  
If you can pick 'em out with few interrogations  
And never feel ashamed to ask those few ;  
If you are just a jack of all the trades  
And there's scarce a blooming thing you cannot do ;  
If you're propelled by energy that's tireless ;  
If you don't fear the job that's never done ;  
Then take my word you're fit to work at wireless,  
And anything you get you'll earn my son.  
(With apologies to Rudyard Kipling.)*

## AMERICAN PUBLICATIONS

THE following American publications are obtainable through the Society :

The Radio Amateurs Handbook ... 10s. 0d.  
The Antenna Handbook ... 4s. 0d.  
The "Radio" Handbook (1942) ... 11s. 0d.

Orders, which must be accompanied by cash, are sent direct to America for execution. Delivery 8 to 12 weeks.

Subscriptions to American journals are accepted at the following rates :

"QST" (A.R.R.L.) ... per annum 17s. 6d.  
"Radio" (Radio Ltd.) ... 21s. 0d.

Radio Society of Great Britain  
16 ASHRIDGE GARDENS - LONDON, N.13

73.

**G2IK** (42 Norton Road, Bristol, 4) to G2VK, 3TL, 4LZ, 4ON, 4OP, 5PU, 6VK, 8SI, 2AJW, 2BSU, E13P, W2BXA.

**G2RD** (R.C. of S.), to G2AW, 2BB, 2DP, 2KI, 2UJ, 3FP, 3YY, 5HF, 5OX, 6QB, 6VA, 8KI.

**G2XU** (R.A.F.), to G2IN, 2XC, 5ZI, 6TV, 6YR, 8GG, VE3ADN and all old friends at No. 1 S.S.

**G2YL** (Walton-on-the-Hill, Surrey), to G6GS, 6LK, VP4TO, VP5PZ, VP6MR, VP6YB, VU2AN, VU2AU, VU2DC, VU2JG, VU2LJ, and W3CDQ.

**G3BR** (R.A.F.), to G2MI, 3JO, 5BX, 6HM, 6YG, 8DI, 8DY, 8HX, 2MI, G16YM, 2AMW, 2FQH, E18N.

**G3CJ** (Farnborough, Hants—formerly Bolton, Lancs), to G2GA, 3ZN, 5XM, 6PO, 8GG, 8NF, 8NL, 8QS, 2BDA, 2ABT, 2BTO and all 1.7 and 3.5 Mc friends.

**G3DH** (Bramhall, Ches.), to G2WQ, 2LK, 3BN, 3SP, 5CP, 5LR, 5YV, GW6AA, G6CX, 8KP, 8KS, and BERS195.

**G3OA** (Thundersley, Essex), to G2LC, 2SO, 2WG, 2YI, 3JW, 4AK and 2CIW.

**G3TA** (R.A.F.), to G2DL, 2RC, 3AD, 5OX, 6NH, 8NB, 8QV, 2FFM, 2FRM, ZD2AB, SU5KW.

**G3VI** (R.A.F.), to G2FX, 3HM, 3OW, 3PV, 5ZJ, 8MX, G15ZY, GM3LO, GW8SO, and all Hitchin and District friends.

**G3YW** (R.A.F., Aden), to G2IM, 2QY, 2VK, 3HT, 3LT, 4AY, 4CG, 4KD, 5FG, 6PM, 8TR, BRS3871, and all old friends in the Edgware Short-wave Society.

**G3ZI** to G3GS, 3NA, 3OT, 3UY, 3YK, 4BO, 4CI, GM3JC, 3UA, 8KQ, E17M.

**G4DC** (Hertford), to G2WI, 3BR, 3ST, 3OV, 3WX, 3ZS, 4DD, 4KY, 5PY, 5WG, 8GP, 8IL.

**G4LQ** (R.A.S.C.), to G3SP, 3RY, 5PX, 8PW, GM8JW, and all Manchester members.

**G5UD** (R.E.), to G2XS, 2MN, 5IX, 5UF, 6FB, 8DI, G13IP, VU2FO, VU2AN, VU2HB.

**G8CK** (R.C. of S.), to G2AW, 3KP, 3NR, 3OJ, 5UA, 6GR, 6ZN, 8IJ, 8QR, 8TK, 8TL, GM6JJ.

**G8JI** (Ex-XX2G, 1928-1932) (R.C. of S.), to G2AW, 2NF, 5BJ, 5OH, 5QG, 5ZR, 6KI, VO8Z, W1BSK, 1LZ.

**G8OM** (Leicester), to G3XA, 4DS, 5KG, 8MR, 8NS, 8SA, 8ON, 8PO, 8IZ.

**G8PP** (R.C. of S.), to G2AW, 2KI, All Cable and Wireless gang at LN., G2XG, 6BK, All the "Rats," GM3LG, W5GOL.

**GM3RL** (ex M.N.), to G2YK, 6ZR, GM3QH, 6IW, 6SJ, VK2DQ, VE1YL, 1FL, 2EE, and District members wherever they may be!

**GM8MQ** (R.C. of S.), to G2AW, 5DW, 5LW, 6QF, GM3BA, 3LG, 3ND, 3SW, 6JJ, 8KQ, ZLIY, VE2OL.

**2BVD** (R.A.F.), to G3RQ, 3YT, 4CM, 6GN, 5JU, 6VF, 2BAR, 2BSU and all Bristol members.

**2CQI** (R.C. of S.), to G2AW, GM4JO, W1BHD, 2IXY.

**2DJV** (R.C. of S.), to G2AW, 2BK, 3JB, 3JT, 3PD, 4GS, 5XF, 5XJ, 6WH, 6GX, 6QA, 8BI.

**BRS3605** (M.N.), to G2UM, 3OZ, 3TH, 5SR, and all other old friends.

**BRS4371** (R.A.F., Canada), to G8CQ, 3FT, 4MP, 4BO, 2DXI, 2HGZ, 2HLY, and members of Romford Radio Society.

**VQ4CRH** (Kenya), to G2AT, 2MI, 2NH, 2OP, 2YL, 6NF, 6UN, and GM2IA.

### Webbs Spin a Yarn

Webbs Radio send us the following extract from a letter recently received at their Soho Street offices:

"Please forward one of your Radio Globes provided you can answer the following question satisfactorily: Can the globe be placed on top of the radio receiver without causing harm to the latter—that is, will there be magnetic attraction between the components and the globe?" Without wishing to appear presumptuous we would recommend to our advertisers that in future advertisements they make it quite clear that no possible harm will be occasioned to a receiver by placing the globe on top of the cabinet. They could perhaps point out that it should not be placed too close to the receiver as the electro-magnetic waves

may cause the globe to spin on its axis. Even this effect, however, may be usefully employed whilst studying the political changes in the Pacific!

### Silent Key

Andreas Bertnes, LA6R, was arrested early in the spring of last year by the Germans and accused of espionage and of illegally using a radio transmitter. The German Field Kriegsgericht recently sentenced him to death, and he was shot a few weeks ago. Andreas was 25 years of age and a medical student who lived in Sendefjord with his father—a doctor.

Our sympathies are extended to his Norwegian friends in Great Britain. J. C.

# ON ACTIVE SERVICE

## TWENTY-NINTH LIST

**W**E publish below our twenty-ninth list of radio amateurs on active service. Additional details and corrections should be advised to headquarters as early as possible. The present list contains information received up to February 2, 1942.

Rank and Name	Regiment or Branch	Pre-war Call or B.R.S.
Sig. W. A. T. Allen ...	R.C. of S. ...	G6GT
Cpl. D. A. Appleby ...	R.A.F. ...	4706
Sgt./T.I. I. L. Banks ...	R.A. ...	4701
Dvr. H. J. Barlow ...	R.A.S.C. ...	G4LQ
Ord./Tel. H. S. Bennell*	R.N. ...	G2ND
Sig. S. L. Biggs ...	R.C. of S. ...	2FWZ
A.C.2 N. R. Bowtell ...	R.A.F. ...	4668
L./Cpl. W. Brookman ...	R.C. of S. ...	BERS 497
A.C.1 E. Butler ...	R.A.F. ...	2BUQ
Ft./Lt. G. S. Charles ...	" ...	1963
A.C.2 R. E. Dodd ...	" ...	G3LY
A.C.2 P. Drewett ...	" ...	G4GQ
Sig. R. H. Draper ...	R.C. of S. ...	G4BU
Capt. D. A. L. Dwyer ...	R.A. ...	4654
Sig. C. T. Fairchild ...	R.C. of S. ...	G3YY
Lt. J. C. Field ...	R.N.V.R. ...	4012
L./Cpl. W. J. Gibbons ...	R.C. of S. ...	4699
A.C.2 R. H. Hall ...	R.A.F. ...	4661
Cpl. R. H. J. Haywood ...	" ...	4688
A.C.2 W. Hewitt ...	" ...	4172
A.C.2 J. B. Hodgetts ...	" ...	2FXZ
W./O. J. Hoey ...	" ...	4651
A.C.2 M. S. Holman ...	" ...	4669
A.C.2 A. J. Latham ...	" ...	4675

Rank and Name	Regiment or Branch	Pre-war Call or B.R.S.
Ft./Sgt. E. F. Legg ...	R.A.F. ...	4693
A./Cpl. E. Leonard ...	" ...	4691
A.C.2 A. R. Line ...	" ...	4678
L.A.C. J. L. Meddemman ...	" ...	2CKW
Col. C. S. Metcalfe ...	" ...	4704
A.C.1 G. Miles ...	" ...	2CXO
2nd/Lt. R. W. McCall ...	R.C. of S. ...	4658
P./O. F. H. North ...	R.A.F. ...	2FPP
Sig. B. W. Oliver ...	R.C. of S. ...	G3XT
L.A.C. A. W. Osborne ...	R.A.F. ...	2FSF
Sgt. C. O. Parvis ...	R.A. ...	4677
F./O. B. J. Reichman ...	R.A.F. ...	G6RM
L./Sgt. H. Richardson ...	R.A.O.C. ...	4652
Sig. N. F. J. Schembri ...	R.A. ...	4695
L./Cpl. C. P. Self ...	R.C. of S. ...	4656
F./O. G. F. Shute ...	R.A.F. ...	2CBD
L./Cpl. T. R. Smith ...	R.A.O.C. ...	4653
Sgt. C. W. B. Stimpson ...	Royal Marines	4657
Cpl. F. Tillotson ...	R.A.F. ...	G6XT
Sig. F. H. Watts ...	R.C. of S. ...	G5BM
A.C.2 A. J. Williams ...	R.A.F. ...	2DOS

\* Non-Member.

### CORRECTIONS.

P./O. T. N. Nesbitt, recorded as Royal Navy in the January issue should read, P./O. T. N. Nesbitt, Royal Air Force.

Cpl. J. A. Hunt, recorded in the January issue as R.A.F., should read, Royal Corps of Signals.

Spr. T. C. Williamson, formerly attached R.A.F., now serving with Royal Army Ordnance Corps.

### Our American Visitors

Now that large numbers of U.S.A. amateurs are in this country and more are arriving every month, we feel the time is opportune to suggest that QST and other American Radio publications should, from time to time, publish the address of R.S.G.B. Headquarters for the benefit of their members. By so doing they will be able to establish contact, through the Society, with home members, many of whom have already offered to extend hospitality to visiting amateurs.

Headquarters would appreciate advice concerning the arrival in Great Britain of any overseas amateur, so that a letter of welcome may be forwarded. Already several U.S. amateurs have made contact with Service members as a result of notices published in this Journal, but we should like to feel that every visitor to these shores is given the opportunity of meeting fellow amateurs.

In this connection, Mr. W. E. D. Parker, G6BY, "Kaygor," Worlebury Park, Weston-super-Mare, Somerset, kindly offers to extend hospitality to any American amateur who visits his part of the country. He will also be glad to exchange correspondence.

Members in a position to offer hospitality are invited to forward details of their facilities for publication in our next issue.

### Silent Keys

It is with much regret we record the names of the following members who have been officially posted as missing, presumed killed, on Active Service.

Lt.-Com. D. Grove-White, G5GW, H.M.S. *Barham*.

Ord. Art. G. W. Peel, 2AGL, Royal Navy.  
L.A.C. J. C. Croome, 2CXP, Royal Air Force.

L.A.C. N. H. Meanwell, 2BIC, Royal Air Force.

\* \* \*

We also record with regret, the deaths of J. L. C. Stone, G2ZL, of East Dulwich, London.

W. R. Emery, G6LW, of Twickenham, Middlesex.

R. G. Bain, 2FND, of Peterculter, Aberdeen.

# PRISONERS OF WAR FUND

## Parcels

We have pleasure in announcing that parcels to an average value of £1 each were forwarded last month to the following seventeen members who are prisoners of war:—Messrs. Babcock, Barry, Blair, Carr, Cunningham, Deane-Drummond, Flower, Frost, Garrett, Kay, Lister, Marshall, Quartermaine, Richardson, Shackleton, Spink and Webb. Books, games and tobacco were included in the parcels which were despatched by the Army & Navy Stores.

## Donations

The General-Secretary acknowledges with grateful thanks the following additional contributions to the Fund:

	£	s.	d.
Coventry Amateur Radio Society (per C. Taylor) ...	1	10	0
Capt. A. Cattanch, GM2TQ ...	2	2	0
Anon ...	5	0	0
D. J. Robinson, G3IF ...	10	0	0
E. F. Dimmack, BRS3491 ...	15	0	0
P. G. Hester, G5HS ...	1	1	0
"A G6" ...	1	1	0
T. W. Homewood, BRS3623 ...	10	0	0
F. Marshall (Father of G2XQ who is a prisoner of war), 2nd donation ...	10	0	0
F./O. J. M. S. Watson, G6CT ...	10	0	0
E. Beckwith, BRS3430 ...	5	0	0
W. V. Champion, G8CY ...	2	6	0
Mrs. Barry (Mother of BRS3745 who is a prisoner of war) ...	10	0	0
J. W. Paddon, G2IS ...	7	10	0
Mrs. G. Leith (Wife of GM4HX who is abroad) ...	10	0	0
P. Bevan, GW8HI ...	2	2	6
R. A. Beaumont, G3CS ...	10	0	0
V. Plascott, G5PT ...	1	0	0
J. Wilson, GM6XI ...	10	6	0
N. Routledge, BRS2731 ...	1	1	0
West Somerset Group (per G3SB) ...	15	6	0
K. L. W. Cook, BRS2006 ...	5	0	0
R. F. Maidment, G5MM ...	5	0	0
W. Jones, GW8OK ...	1	0	0
W. G. Johnson, G4MS ...	1	1	0
N. Brandon, 2BZN ...	6	0	0

District 13 (per G2GZ), 2nd donation ...	£	s.	d.
C. R. Beavan, 2BVD ...	14	0	0
Anon ...	5	0	0
T. Cadell on behalf of 3SK, BRS4160, VU2EB and YIIMDZ (ex AQIMDZ) ...	10	0	0
Cheltenham Group (per A.C.) ...	10	0	0
District 7 (per G2DP), 3rd donation ...	10	0	0
J. Hilton, BERS490 ...	5	0	0
J. A. Collins, BRS4617 ...	10	6	0
P. C. W. Green, BRS3753 ...	5	0	0
P. Skane, BRS4059 ...	2	0	0
T. F. Crowther, G5TH ...	2	2	6
R. T. Hewson, G3RH ...	5	0	0
S. T. Hall, G3BR ...	5	0	0
A. O. Milne, G2MI ...	10	0	0
C. R. Beavan, 2BVD (2nd donation) ...	1	13	6
J. R. Petty, G4JW ...	1	1	0
Anon ...	5	6	0
G. R. Sanderson, 2AYK ...	7	6	0
Anon ...	5	0	0
Previously acknowledged ...	120	16	3

Total to date **£158 9 9**

Further donations should be addressed to the General Secretary at 16, Ashridge Gardens, London, N.13.

## Books

Mr. C. H. Lamborn Edwards, G8TL, "Speedway" St. Bartholomews Lane, Sudbury, Suffolk, who is administering the Fund states that only one member Mr. G. Shackle, 2DVQ, has answered the appeal for books made in our last issue.

Books on General Electrical Engineering, Aerodynamics, Economics, as well as novels (especially "thrillers") will be warmly welcomed by G8TL who will arrange for their despatch to members who are prisoners of war.

## General

Headquarters solicits assistance in the task of obtaining details of other members who have been taken prisoner and whose names have not been recorded in this Journal.

## Bachelors All

From a QRA which bids fair to compete with the home of the Farm Hams, insofar as ham population is concerned, comes news of many old timers, including our scribe G8PP, 2KI, 2RD, 8JI, 8CK, GM8MQ, 2CQI, 2DJV, and 2FWX. The call G8JI conceals the identity of the operator of XX2G (1928-1932 vintage). Apparently some of his QSL's confirming contacts made during that period have been the rounds, just to whet the appetites of those who struggled hard for DX in the years immediately before the war.

G8CK, ever with an eye to the future has been engaged in "bug shooting" in a four valve job. We understand that when all snags have been cleared a BULL article will be forthcoming.

G2RD has constructed a universal measuring set which goes up to 1,000 volts or 1 ampere in stages, and registers from 5 ohms to 3 megohms. Looks like another BULL article.

As nearly all the other hams at the station are engaged on constructional work in their spare time, some useful gear should emerge at the end of the war.

Socially the gang do well, having found a brew so potent that the landlord will not serve anybody with more than two halves during one visit to his house.

G8PP is anxious to hear from W5GOL if he gets over here with the U.S. forces (QST, please copy).

## Ham Hospitality

The following members have offered hospitality to members located in this area.

**Brighouse (Yorks.)**.—H. Binns (G8TF), 119 Rastrick Common, Phone: 97 Office.

**Clacton (Essex)**.—D. Heightman (G6DH), 234 Burrs Road, Phone: 770 Home, 151 Office.

**Falkirk (Scotland)**.—N. E. Holden, B.Sc. (GM4MF), c/o 3 Hodge Street, Phone: 1252.

**Grantham (Lincs.)**.—H. E. Drew (BRS4183), The Bungalow, High Street, Caythorpe.



# THE MONTH "OFF" THE AIR—January

By A. O. MILNE, G2MI.

## Here and There

**W**ELL, we were a little too hasty last month, for it seems that there are still a few genuine hams left on the air after all. G8JR submits the following list of calls heard during the six weeks ending January 26:—CM2BI, BU, DB, DO, LE, PP, 5UL, 8BB, CO2CE, DB, CL, HH1QG, LU3EL, FC, 6EL, 7HE, PY1BP, DL, JM, KJ, KR, KZ, KT, LK, LM, OS, OW, QL, QZ, 3KE, W1AW. Also a few doubtfuls: HV1J, CT1B, EA1AM, OB and OK3EJ.

W6QVY tells us that quite a number of Americans are back on the air again with the A.A.R.S. or in connection with Civilian Defence. There is no rag-chewing, but just net tests and message handling.

From AC2 Beane comes the latest dope on Broadcasting: "Radio Brazzaville" on 11970 kc/s., comes in well at 21.25 B.S.T. and usually closes down around 22.15. "Radio Congo Belge" on 6140 is another good signal about the same time. Chungking with news in English is an excellent signal on 49.5 metres approx. at 22.30. PLP, Bandoeng Java is fair on 11 Mc/s. at 17.00 B.S.T. Another strong signal is "Radio Andovia" on about 47.5 metres with frequent announcements: "Aqui Radio Andovia," made by a lady. The above are also mentioned by BRS2947, who draws attention to what should be a very interesting station; "Radio Malta" on 21 metres, which gives a news bulletin at 14.45 B.S.T. We do not know if this station is genuine, but would be glad to have some information; it was particularly consistent last June.

Many have asked for the publication of the list of short-wave broadcasters, mentioned last month. We hope to publish it in March, but before doing so we would like to have authoritative information on the jumble of South American stations between 36 and 60 metres. Any offers?

G6ZT asks if anyone can give him news of 5JD of Hull and 6PB of South Shields. He would like to hear from both if they happen to see this enquiry. He also mentions that there is a rather shy R.S.G.B. member in Whitehaven who never comes to the local meetings, but would be very welcome. 3BW, who is a cinema operator at a naval school in the south, asks for news of 4PO who, he believes, is in the R.A.S.C.

2CGL reports that 2CCB, when last heard of, was in Cyprus, having gone there from Egypt where he met ZS2BW. 2FZY (2CCB's brother) is now in the R.A.F. and hopes shortly to contact 8DI who is on the same station. 2CCB sends 73 to 2AGN and other District 18 friends. 2CGL is in the south, and recently discovered he was working with VE3VY, who has his call on his gas-mask case.

BERS195, whose tropic paradise seems to have been turned into a tropic hell by the little "Brown Devils" sent us news of amateur activity prior to December 7 in his letter, ref. AOM/1 of November 3,

but unfortunately it was rather too out of date to be of interest by the time it reached here on January 1. As we do not know his present whereabouts, we take this opportunity of wishing him good luck.

## News from Overseas—Australia

The W.I.A. carries on, and their magazine, *Amateur Radio* which, although reduced in size, continues to keep Aussie amateurs together. We are glad to note therein that Don Knocke, VK2NO, has been discharged from hospital and hopes shortly to re-join his unit. Whilst in hospital Don considers he has designed the ultimate in 56 Mc/s. rigs, both transmitter and receiver, but won't hazard a guess as to when he will be able to try it out!

## South Africa

*Ham Chatter* comes through regularly and tells in unsensational words, the story of a great effort to keep South African amateurs together. Left to their own devices and saddled with debt, this small band of enthusiasts has performed little short of a miracle. They now have a comfortable bank balance and a live magazine. We can only hope that after the war it will be these courageous lads who will guide the destinies of South African hamdom. We rather wish they would refer to people by their calls instead of their surnames, in the pages of *Ham Chatter*. We often scent a good story, spoiled by the difficulty of identification. ZS6DF comments on the excellence of Italian field radio gear, and says he was lucky enough to find an H.M.V. receiver in Addis which, when repaired, provided music and news, to everyone's delight. ZS4A has done a bit of travelling, having covered Sudan and Uganda. He also spent eleven weeks in Kismaya. *Ham Chatter* is full of instances of South African amateurs meeting pals in all sorts of queer places.

## QSL Bureau

Cards, but no envelopes, are in file for the following G2's:—2AY, CC, O, P, FH, J, K, L, O, P, T, Z, GH, M, P, U, V, W, HB, D, K, L, O, V, W, X, Y, IA, J, O, T, JA, F, N, KG, H, M, U, LA, D, F, Q, R, S, X, MA, Y, NA, G, J, M, O, P, W, OB, T, PY, QA, G, S, U, RA, G, J, K, N, SD, G, K, P, X, TA, F, J, K, UC, G, N, Q, S, VG, O, S, T, W, X, WB, H, K, M, N, S, Y, XA, C, D, F, G, L, M, S, V, Z, YM, P, Y, Z, ZD, J. One envelope only please to G2MI. Not to headquarters.

## Conclusion

In order to create a little diversion, I announce with pleasure, an invitation to all members to enter a little competition. For the best description, in approximately 250 words of "My most Thrilling QSO," I offer a 5/- book token as a small incentive. So now you bushels with lights under 'em, now is your chance. Please send your stories to G2MI, A. O. Milne, 1, Kent Drive, Harrogate, Yorks. Closing date is March 31, 1942.—73.

## Advertisers' Announcements

The fact that goods made of raw materials in short supply, owing to war conditions, are advertised in this Journal, should not be taken as an indication that they are necessarily available for export.

## The 28 Mc. Band

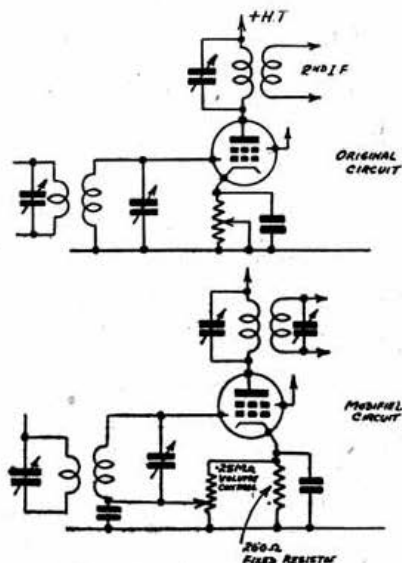
WE must first correct a statement made in last month's notes to the effect that no amateur signals were heard on the band during December. A report received from BRS3893 just after going to Press shows that a few W's were audible early in the month, just before they were closed down. On December 2 eight stations were identified, namely:—W1BLQ, 1KFS, 1LW, 1MJE, 2FGB, 3BDV, 5JIF and 5RY, whilst on December 7, W3IZ, 3PVC and another W 'phone were heard.

Going still further back into the past, a letter from BERS195, British New Guinea, written in November referred to increased 28 Mc. activity in the Philippines. KAIAK, 1CM, 1JH and 1SJ had been finding conditions fairly good, and 1CM had reported hearing 57 different calls on the band in the week ending October 25. Here's wishing the best of luck to them all including BERS195.

A detailed report from G4MR for the period December 28 to January 25 shows that there was very little to be heard above 24 Mc/s., except U.S.A. commercials. The best day was December 30, when an unidentified carrier was heard on 29.1 Mc/s., WIK on 28 Mc/s. and WKC and WEJ on 27 Mc/s. The following day, and on January 23 and 24, signals included WEX 27 Mc/s., and WAR 26.3 Mc/s. and on ten days W5XAU was audible in the 26 Mc.-broadcast band. The highest frequencies heard from Europe and South America were IGB 24.9 Mc/s. and LQE 24.5 Mc/s. N. C.

## A Useful Receiver Tip

The writer recently purchased an old A.C. mains superhet comprising S.G. frequency changer, I.F. amplifier, S.G. detector and pentode output. After giving it a good clean up it was found that the volume control (a wire wound potentiometer in the cathode circuit of the 1st I.F. amplifier) was defective and beyond repair.



The original circuit and the modified arrangement.

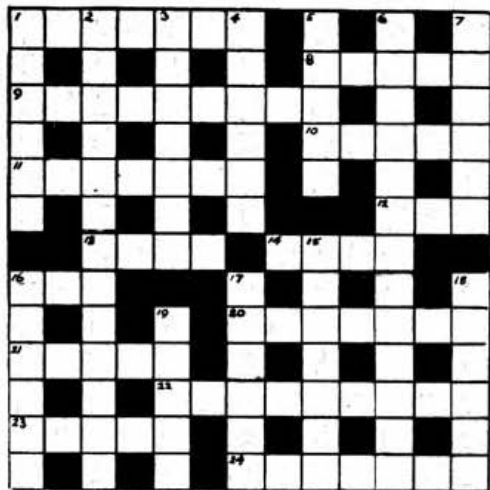
No replacement was to hand and the only volume control available was a 250,000 ohm carbon track which was unsuitable for use in the cathode circuit for several reasons.

By re-arranging the circuit as shown, the set was made quite serviceable and is now working well. Perhaps this tip may be of use to others who may find themselves in a similar position.

G8HX.

## "HAM-RADIO" CROSSWORD No. 10

Compiled by R. J. BRADLEY, (G2FO)



### CLUES

#### ACROSS.

1. Swain goes back to Canada to turn round (7).
8. The long and short of radio (5).
9. Racial bet (anag) (9).
10. Are removed from most valves (5).
11. Dip into me miser I (7).
12. Animal in a glass (3).
13. It's not surprising that the earthy end of a coil is this (4).
14. 56 Mc/s. gear is often on top of one (4).
16. Also part of a tool (3).
20. Is noses a period of time? (9).
21. 56 Mc/s. is this H.F. (5).
22. We depend on this wave for DX contacts (9).
23. This can make a rod up (5).
24. Earth these—keep them short I (7).

#### DOWN.

1. Spring back about the inductance (6).
2. Usually a potentiometer (2 words 6, 7).
3. Be this with your grid bias for high harmonic output (7).
4. Avoided a dead VE I (6).
5. Resistance—the Greeks had a word for it I (5).
6. Found in the I.F. circuit in modern communications receivers (2 words 7, 6).
7. Stops as between Chile and Estonia (6).
15. Examine a set in CP (7).
16. Key these—but not with a filter (6).
17. You can make sure of having a this for anything (2 words 3, 3).
18. They positively attract electrons I (6).
19. Amateurs are probably the only people who look forward to getting their these (5).

### SOLUTION NEXT MONTH

**Changes of Permanent Address  
should be notified to  
Headquarters immediately.**

# BRITISH ISLES NOTES AND NEWS

## District Representatives and Deputies.

**DISTRICT 1 (North-Western).** (Cheshire, Cumberland, Lancashire, Westmorland.) MR. H. W. STACEY (G6CX), "Sandleas," Edisbury Road, West Kirby, Wirral, Cheshire.

**DISTRICT 2 (North-Eastern).** Yorkshire (West Riding, and part of North Riding.) Acting: MR. A. O. MILNE (G2MI), 1 Kent Drive, Harrogate, Yorks. Telephone: Harrogate 2161.

**DISTRICT 3 (West Midlands).** (Shropshire, Staffordshire, Warwick, Worcester.) MR. V. M. DESMOND (G5VM), The Chestnuts, Hanley Castle, Worcs. Telephone: Hanley Swan 41.

**DISTRICT 4 (East Midlands).** (Derby, Leicester, Northants, Notts.) Deputy: MR. W. M. VENDY, (G6VD), 9 Cecilia Road, Leicester.

**DISTRICT 5 (Western).** (Gloucester, Hereford, Wiltshire.) MR. R. A. BARTLETT (G6RB), 31 King's Drive, Bishopston, Bristol. Telephone: Bristol 46960.

**DISTRICT 6 (South-Western).** (Cornwall, Devon, Dorset, Somerset.) MR. W. B. SYDENHAM (G5SY), "Sherrington," Cleveland Road, Torquay. Telephone: Torquay 2097.

**DISTRICT 7 (Southern).** (Berkshire, Hampshire, Oxfordshire, Surrey.) MR. W. E. RUSSELL (G5WP), "Milestones," Westfield Road, Mayford, Woking, Surrey. Telephone: Woking 1589.

**DISTRICT 8 (Home Counties).** (Beds., Cambs., Hunts., and the towns of Peterborough and Newmarket.) MR. S. J. GRANFIELD (G5BQ), 47 Warren Road, Milton Road, Cambridge. Telephone: Cambridge 54644.

**DISTRICT 9 (East Anglia).** (Norfolk and Suffolk.) MR. H. W. SADLER (G2XS), "The Warren Farm," South Wootton, King's Lynn, Norfolk. Telephone: Castle Rising 233.

**DISTRICT 10 (South Wales and Monmouth).** Scribe: MR. S. HOWELL (G5FN), 90 Coleridge Avenue, Penarth, Glam.

**DISTRICT 11 (North Wales).** (Anglesey, Carnarvon, Denbighshire, Flintshire, Merioneth, Montgomery, Radnorshire, and parts of Shropshire not in District 3.) Deputy: MR. C. SPILLANE (BRS 1060), "Woodside," Meliden Road, Prestatyn.

**DISTRICT 12 (London North and Herts.).** (North London Postal Districts and Herts., together with the area known as North Middlesex.) MR. S. BUCKINGHAM (G5QF), 41 Brunswick Park Road, New Southgate, N.11. Telephone: Enterprise 3112. Scribe: MR. P. R. SOLDER, (G5FA), 35 Torrington Gardens, New Southgate, N.11. Telephone: Enterprise 4347.

**DISTRICT 13 (London South).** To be appointed.

**DISTRICT 14 (Eastern).** (East London and Essex.) MR. R. L. VARNEY (G5RV), "Arvika," 184 Galleywood Road, Chelmsford, Essex. Telephone: Chelmsford 3394.

**DISTRICT 15 (London West).** (West London Postal Districts, Bucks., and that part of Middlesex not included in District 12.) MR. H. V. WILKINS (G6WN), 539 Oldfield Lane, Sudbury Hill, Greenford, Middlesex. Telephone: Byron 3369.

**DISTRICT 16 (South Eastern).** (Kent and Sussex.) Deputy: MR. W. A. SCARR, M.A. (G2WS), 8 Beckenham Grove, Shortlands, Kent. Telephone: Beckenham 1131.

**DISTRICT 17 (Mid-East).** (Lincolnshire and Rutland.) DR. A. GEE (G2UK), "Stonehaven," Horncastle Road, Boston, Lincs.

**DISTRICT 18 (North and East Yorkshire).** (East Riding and part of North Riding.) MR. E. MITCHELL (G5MV), 40 North Marine Road, Scarborough.

**DISTRICT 19 (Northern).** (Northumberland, Durham, and North Yorks.) MR. R. J. BRADLEY (G2FO), 36 Raby Road, Stockton-on-Tees.

**SCOTLAND.** MR. JAMES HUNTER (GM6ZV), Scottish Records Officer: 51 Camphill Avenue, Langside, Glasgow. Telephone: Langside 237.

**NORTHERN IRELAND.** MR. J. N. SMITH (G15QX), 19 Hawthornden Drive, Belfast. Telephone: Belfast 6323.

New Members are cordially invited to write to their local Representative, enclosing a stamp if a reply is required.

## DISTRICT 1 (North Western)

THE D.R. has received a letter from 2FSR (District 14), who is a Corporal with the R. C. of S., and now stationed about three miles from Altrincham. He will be glad to attend meetings held in that locality and his address can be obtained from G6CX. G8NS (District 4), is still convalescent, but continues to make good progress.

A fair number of reports have come in but there is still no news from Manchester—what about the appeal by G2OI, you Mancunians?

**Blackburn.**—There was a very good attendance at a meeting held on January 11, when G2TM was elected T.R. for the ensuing year to fill the vacancy caused by the sudden death of Jim Bolton. Appreciation of the services rendered by G4KT to R.S.G.B., and in particular to the Blackburn group was expressed by members present. It was agreed to hold informal monthly meetings on the "Sunday

before the 20th" at the T.R.'s address, 111 Roe Lee Park, Blackburn, at 10.45 a.m.

Home-based members send greetings to all members in the Forces or absent from home on other forms of National Service. The T.R. would like them to keep him informed of their movements, so what about it 4CT, 2FUC and others?

Activity is limited, but G2HW is still considering a "communications effort," 6BH is building a valve voltmeter, 6WH is working with 8FK on a superhet, 8FI has built a preselector for his Sky Champion and also a "sideswiper," 2BZB is improving his amplifier and BRS3627 is still looking for a 6SQ7 for his Howard; can anyone help him. 3VV has moved to a new address. Other activities range from Hornby trains to "Tiddleewinks."

(via G2TM).

**Bolton.**—The meeting held at 2DVQ on January 11 resulted in a record attendance of twelve. The

visitors, which outnumbered the locals on this occasion, included G6SC, 6XG and 8SC, who made the trip from a neighbouring town.

At the invitation of Capt. Chapple (G6SC), 2BDA and 2DVQ subsequently paid a visit to the meeting organised by him at "Ye Olde Boar's Head" where they had the pleasure of meeting about a dozen members.

2BTO has now joined the R. C. of S. and is stationed "somewhere in the Home Counties."

Greetings to Cpl. Bernard Tootell (2CKC) who has recently joined the Society. 2BDA, a civilian instructor with the Bolton A.T.C., recently spent a few days at No. 1 S.S. He says that it must have been a closed season for hams in those parts as those he met were few and far between.

In collaboration with Sgt. D. Carr (G2XU), who is stationed in the town, 2BDA and 2DVQ are endeavouring to organise weekly or fortnightly meetings, but the project is in a state of suspended animation pending the acquisition of a suitable meeting place.

The next, Sunday afternoon meeting will be at 2DVQ, 32 Bromwich Street, Bolton, on March 1, at 2.30 p.m. (via 2DVQ).

**Stockport.**—At the meeting held at G3IR on, January 25, only a small attendance was recorded but some very interesting informal discussions took place on various subjects ranging from Frequency Modulation to 112 and 56 Mc. reception.

Another meeting has been arranged for Sunday, March 1, at 2.45 p.m., at G3IR, "Alasdair" Chester Road, Poynton (two minutes walk from Poynton Station, on the main road on the opposite side of the bridge from the Church), and it is hoped that local members will give it their full support. Service members stationed in the area are especially welcome at these meetings, or at any time they care to call on G3IR (Phone: Poynton 2087). (via G3IR).

**Whitehaven.**—Seven members attended a meeting held at G6WR on December 27. Those present were G4NS, 4PS, 6WR, 6ZT, 2AYH, BRS4541 and 4547. 4NS and BRS4547 came down from Workington and 2AYH all the way from Carlisle.

There is no further news of 3HJ, whose last letter was posted from "somewhere at sea. Cpl. Hushman (GM6HZ), appears to have hibernated for the winter. A letter from 3BW asks the T.R. to QSP 73 to 4CB (who was very kind to 3BW when he was on the East Coast) and reports that he is taking a course and looking forward to going to a civilian college in the North. He has heard that 2AUM has been ill in the Middle East and has lost a couple of stones in weight. 3BW suggests that it will be a little easier on the camel! Well, it might have been but there is news that 2AUM is now in East Africa and tigers live there! Before leaving Egypt 2AUM had seven days' sick leave in Cairo which led to a further meeting with 8HQ. (via 6ZT). GC6X.

#### DISTRICT 2 (North Eastern)

BRS4349, writing from an R.A.F. station in Yorkshire has contacted BRS4645, 3897 and 4239. He sends 73 to G2PC, 5VD and all Bradford members. 6BR has recently left the district to take up work of national importance near London. 4DP of Doncaster is in the R.A.F. with 2DF and BRS4602. He recently spent an afternoon with 3NJ who is back from the Navy. 2VO has been on holiday.

G3HA is now at No. 6 S.S. and would be pleased to meet any other members who may be there. 3KF is in the R.A.F. but his present whereabouts are unknown. BRS4412 has also been home and 4MC is back for a short spell from America and has visited 8UO bringing a very welcome present in the shape of the new A.R.R.L. Handbook. 6HF has his new 10-valve super working but is getting second channel interference. Have to look to those R.F. stages, o.m. 3UV expects to be in uniform shortly. 8UO issues a general invitation to Service members who find themselves in or near Keighley to look him up. G2MI.

#### Forthcoming Events

- Feb. 21 District 15, 7 p.m., at 2ADL, 106 Cavendish Avenue, West Ealing (see District Notes).
- " 22 District 12, 3 p.m., at G5FA, 35 Torrington Gardens, New Southgate, N.11.
- " 22 District 13 (South, Central and South-East London), 3 p.m., at BRS4324, 3 Englewood Road, Balham, S.W.12.
- " 22 District 5, 3 p.m., at 17 Colston Avenue, Centre, Bristol.
- " 22 Scotland "A" District, 2.45 p.m. in the Coffee Room, Y.M.C.A. Residential Club, 100 Bothwell Street, Glasgow. All visitors welcome.

#### DISTRICT 3 (West Midlands)

Prior to the war District 3 had a reputation for whole-hearted co-operation in every sphere of Society endeavour. Meetings were well supported, and the healthy state of the District was reflected in these columns. During recent months, however, activity appears to have fallen to practically nothing, the only indication of life being an occasional report from the Midland Amateur Radio Society, Birmingham.

Whilst other Districts have enjoyed well attended meetings and interest has been well maintained, District 3 has faded to but a shadow of its former self. Many an active Service member, whose home town lies in the West Midlands, has complained of the lack of news, but nothing ever seems to happen.

Wake up, ye men of Birmingham, Coventry and Rugby, wake up, and let the world know that the ham spirit still reigns in your town. Let your scribe, Eric Wilson, 2FDR (48 Westbourne Road, Olton), have a few lines each month, and begin thinking about regular meetings. G6CL.

**Birmingham.**—At a meeting of M.A.R.S., held on January 11th, 1942, Mr. E. C. Naylor-Strong (President), gave more details of special 2-valve receivers, dealing in particular with voltage maintenance and various other snags which had been met with. 2FDR.

#### DISTRICT 4 (East Midlands)

**Leicester.**—G5UQ, still in "civvy street," has been posted to yet another station within easy reach of



home. He appears to like his new QRA and sends 73 to all old friends. Congratulations to 5MY (Derby and Leicester) on his recent marriage, and who wasn't surprised? Anyway, here's the best of luck to them both. 3BU has lost touch with 3AY of Birmingham and would like to know his present QRA. 2RI is back at his old station once again, and judging by his letter is getting plenty of hard work. BRS4431 was home for a few days at Xmas, but had no time to go visiting. He hopes to make up for this lapse, however, during his next leave.

**Nottingham.**—No notes have been received from the T.R., but this may be due to the fact that the writer had to make up this report on January 26, owing to being away from home, and therefore did not receive mail after that date.

BRS4251, who has been transferred to the R.A.O.C. as a Radio Mechanic, has plenty of Radio enthusiasts in his section, some of whom look like being R.S.G.B. members very soon.

**Derby.**—Yet another Derby member has been stung into action and has written giving some interesting details of his activities since the war. This is BRS3605 who has been at sea as a Radio Officer most of this time. He promises to keep us posted regarding his future activities, which we hope will be "plain sailing."

**Mansfield.**—G8OM, writing from the "Country Farmyard," mentions (for the benefit of R.A.F. stations) that there are 60 hams in the "Gang" and that over 40 had full licences pre-war. He sends 73 to the locals and asks that they note his new home QRA: New Inn Cottages, Kinoulton, Notts.

**Northampton.**—BRS4330, who has been moved to a town in the North East for further training as a Radio Mechanic, is now busy trying to get in touch with the locals.

▼ ▼ ▼

Will Service members please note that it will save the Deputy D.R. a lot of work if they send notes direct to their respective T.R.'s, instead of to him. T.R.'s should also note that their reports should be compiled in a form fit for publication and *not* in the form of a personal letter, which means many hours of work for yours truly. Thanks, O. M.'s.

G6VD.

### DISTRICT 5 (Western)

**Bristol.**—The attendance at the January meeting was rather small, only the usual handful of regulars putting in an appearance. We were glad, however, to welcome a visitor in Mr. Johns. Now that meetings are held regularly, how about making the next a record attendance for war-time? It will again be held at 17 Colston Avenue, right in the centre of the city and easy of access for everybody.

The D.R. was pleased to have a phone chat with G6BY now residing at Weston-super-Mare. (Hope to see you at one of our local meetings, O.M.)

Nothing heard from any other part of the District. "WAKE UP!"

G6RB.

### DISTRICT 6 (South Western)

**Torquay.**—The chief items of interest to record this month are that G5SY has received welcome and interesting visits from G6RF (on leave), 21D (on leave), 2DYM and 2CAA. The D.R. is also pleased

and grateful for the number of reports that have been sent in.

**Taunton.**—The scribe, G5AK, reports that 6LQ and 3VA are now on Active Service, the latter in the R.C.S. Others, including 5GT and 8JF, are busy in various ways.

**Plymouth.**—The local Czech amateur spent Xmas and a lot of his spare time with the T.R., G3TX, who reports that BRS464 has been home on leave. An unknown ham called at the QRA of 3TX when the latter was away, but omitted to leave his call. 3TX is anxious to know who it was.

**North Devon.**—Many North Devon members were delighted to receive the special "G3AM Airmail" Xmas card which was reproduced and commented upon in the January issue. The original is in colour and the limitations of a reproduction do not do justice to what is a skilful and beautiful piece of work.

Local amateurs often wonder whether the R.A.F. have adopted the famous (local) 8US coupler!

G8PF and 3BO visited 6GM recently and spent several happy hours in reminiscence, enjoying the genial hospitality which is always on tap at "Featherlands." 8PF is leaving us to take up duty in a noted "hot spot" in District 16. This departure is especially regretted by the T.R., who will miss the periodical rag-chews. We all wish him good luck and good hunting.

**Exeter.**—The only news of importance is that G6JN has come to reside at Southbrook Garage, Rockbeare, near Exeter. Will local members please keep a look out for him.

G5SY.

### DISTRICT 7 (Southern)

**Bournemouth.**—We are now able to report that 8BR is one of the hands at the Country Farmyard. Country life also appeals to 41J who is leaving us soon to join 8BR. Best of luck, Dick. 4KV still in high spirits hopes to be home on leave shortly. 4MY has been spending his time calibrating receivers. 2HNO is busy swotting for his exam. (via 2HNO).

**Coulsdon.**—Two letters recently arrived from 2ANR in Malta inform us that he has been in hospital with tonsil trouble but the offending organs have now been removed. He has been joined at his station by P./O. Ted Laker, 6LK, and Cpl. Peter Malvern, 8DA, who was until recently 28 Mc. Propagation Group Manager. 3003 has been busy calibrating his receiver with a newly constructed frequency meter. (via BRS3003.)

**Croydon.**—In spite of the bad weather 14 members attended the January meeting at 2DP. They included 2LW, 2VB, 3DF, 4NI, 6OD, 2HHD, 2HNV, 1543, 3766, 4150, 4314, and 4324. We were pleased to welcome 3766 from District 9 and hope to see more of him during his stay in London. 4NI held a losing argument with the doctor and as a result spent a few days in bed. He is now back at work. 4584 and 2DP also went down with colds and whilst 4584 had dreams of a beautiful receiver 2DP read through back numbers of the BULL. and was surprised at the number of articles he had previously missed.

4150 has pulled his receiver to pieces and has now started another one; we hope this time it is to his satisfaction. 6OD had an interview in London and

is awaiting results. We are glad to welcome 5BT back to Croydon, he has been away in the north for the last year or so. 4314, driven frantic by him in his receiver, discovered the trouble in the mains circuits under the floor, all is calm once more. 4NI has started on a quality amplifier. 2DP has contacted 5RR at one of the local movies. Others who would like to meet him should ask for Mr. Prior on Croydon 0486.

The next meeting has been arranged for March 8, at 4150's QRA, 42 Oakfield Road, West Croydon, at 3 p.m. In the event of 4150 receiving his call up, 2DP will inform all members who usually attend these meetings. (Via 2DP).

*Oxford.*—Owing to the bad weather the January meeting was cancelled but we hope there will be good attendance at the February meeting to be held on the 22nd. Write 8PX for details.

Welcome to 5RL and 8KL of the R.A.F. who are new to the district. 8PX had a Christmas card from Ted Wake, 5RP, who is in Singapore.

(Via 8PX.)

*Guildford.*—G5CM loses his "Pathfinder" badge by unanimous decision of the small band of explorers he led in a circuitous route to the meeting at 2ZC on January 4. Those who were able to solve the puzzle of finding the QRA were further agonised by a Krazy Kwizz devised by 2ZC. However, it was a most enjoyable get-together for which many thanks, O.M.

The next meeting will be held on Sunday, March 1, at 2.45 p.m. This time we meet in The Cinema, Woodbridge Road, Guildford, just a few yards from North Street where cars may be parked. Don't stand on the end of the cinema queue—come upstairs to the café. G5WP.

### DISTRICT 8 (Home Counties)

This month we make no apology for appealing for financial assistance, not towards paying the D.R.'s income tax, or for District funds, but for the Society's Prisoners of War Fund. Most districts have rallied to this truly magnificent cause, and as it is not in the nature of things that No. 8 should be behind, let's have a really good response.

Your contributions, sent to 47 Warren Road, Cambridge, will be forwarded to H.Q. in the name of District 8.

*Cambridge.*—Please note: G5BQ's telephone number is 54644, and not as printed in last month's issue. (Sorry Stan. Blame the Printers!) A recent arrival to the town is G8MK, who is on a G.P.O. course. There is no other news to hand this month.

*Peterborough.*—G2NJ, now living in S.W. England, has been ill with bronchitis. (Speedy recovery, O.M.) He would like news of 2UQ, and was pleased to see a reference in the BULL. to 8ON, formerly of Peterborough, and later T.R. for Workshop.

*Huntingdon.*—G5RL who has been on leave from the R.A.F., rang up from St. Ives to report "All well." 4AZ also phoned for a rag-chew. Going one better in the "Dig for Victory" campaign, he is ploughing up large lumps of the county with his tractors.

*Bedford.*—BRS3585 expects to join the Forces during February, and a most enthusiastic scribe will be lost to us. 2FFG was recently on leave. His friends understand why he is on the ground staff, if height and weight count for anything! 2DPQ had

the bad luck to break a wrist while hitch-hiking, and spent Xmas in hospital. What has happened to 2CFV, of whom no news has been received since he left for Norfolk? 3JU had the misfortune to have his motor-cycle "borrowed." It's a New Imperial—CPW146—so maybe one of our "ham-sleuths" may see it in his travels. Would any ham passing through No. 11 O.T.U. call in at the "Met" office, and ask for 3JU? Finally, he is a brass-band enthusiast, and would like to contact any other member, similarly interested.

*Luton.*—BRS3376, who is in the R.A.O.C. and stationed in Bonnie Scotland, has discovered with pleasure that his C.O. is a well-known GM.

As a postscript may we suggest that when you are sending that P.O. or cheque for the P. of W. Fund, you send an item of news for next month's notes? G5BQ.

### DISTRICT 9 (East Anglia)

*Great Yarmouth.*—2HFK, at present in Warwickshire, is enjoying his radio work. He recently met 2DAK of Peterborough. 2CWO, who has moved to Beccles, was glad to meet 5QO whilst in Lowestoft.

*Norwich.*—BRS4589 has now been posted to No. 1 S. S., where he hopes to meet the "Gang." At long last a note has been received from 5UF, of Cromer, who reports that he has been busy for a long time with his receiver. He has now moved to another location to carry on the good work.

*Ipswich.*—After an interval of many months, a letter has come to hand from 3OJ, of Felixstowe, who gives news of Ipswich members. He mentions that 2AN, 2JD and 6TI are still about, and that the two latter are busy with the A.T.C. 3IN and 3QJ, who are in the R.O.C., have had the pleasure of a visit from 2YS and 8KU. 2YS wishes to be remembered to all old friends. 4RL and his YL spent Xmas with 3OJ. 8TL is living at Sudbury most of the week.

*King's Lynn.*—As 2BUD is now stationed locally, G2XS is hoping for a meeting in the near future. G2XS.

### DISTRICT II (North Wales)

The monthly meeting for January, held at the usual venue, was attended by GW4CX, 2HCZ, 2HIY, BRS1060, 3044, 4027, 4410, Messrs. Gill and Hughes (our two newest members), and a party of seven from a North Wales Radio College. A Radio Brains Trust was part of the afternoon's entertainment. BRS4410 proved to be a Brains Trust in himself, answering 95 per cent. of the questions set. GW4CX exhibited a 1921 vintage Marconi Long Range 2, which excited interest among the younger members present.

BRS2731 is collecting together some interesting material about radio in the good old days, and will deliver a talk on the subject at the meeting to be held at Vale View, Meliden Road, Prestatyn, on Sunday, February 22, at 2.30 p.m.

As Prestatyn is not quite convenient to members in other parts of the District, it has been suggested that we might try a meeting elsewhere. Bangor seems a central area, and a meeting might be arranged there early in March. Will members let 2HCZ, 5 Station Road, Bethesda, know if the idea appeals to them.

Congratulations to VE3AAA and VE4YG on their recently-announced engagements to two very charming members of the W.A.A.F. All are working on the same R.A.F. Station. (Must be something in the North Wales air.)

2HIY is building a new receiver, this time a Superhet. GW4CK has been home on short leave. 4CX is kept busy with Home Guard duties. Congratulations to BRS4410, R.C.S., on his third stripe. BRS1060.

### DISTRICT 12 (London North and Hertford.)

A successful meeting held at G6CL on January 25 was attended by 18 members. The visitors included G2WR (Norwich), 4QD (Preston), and our old friend LA6A. We were also pleased to see 3SH, 4NV and 6LL home on leave at the right moment. The usual rag-chew and "wise-cracking" took place, and when the supply of chairs ran out parcels of Handbooks made good seats!

The following new members are welcomed to the District this month:—BRS4626, 4630 and 4640 whilst letters have been received from G2TA (Hitchin), 3VI, 2FVX, 2HGT, BRS3412, 3755 and 3825—a little better, but there are still many not reporting.

2HGT who sends his first report after being a member for 18 months, spent an uninteresting existence for some time filling sandbags on the South Coast but is now happy as assistant instructor in radio at a Midland Technical College. 2FVX has just finished building a mains-operated O-V-1 including the mains transformers and steel cabinet, and from the photos which he sent, it looks a very workman-like job. We were very pleased to hear that BRS3412 is now returning home to St. Albans after his long illness; he is looking forward to attending meetings held in that area. BRS3755 has gone overseas to train as a pilot in the Fleet Air Arm—happy landings; BRS3825 has finished his course as a Wireless Mechanic in the R.A.F. and recently had the good fortune to meet a VE5 and W8 at his new station.

The next meeting will be held at G5FA, 35 Torrington Gardens, New Southgate, N.11, on Sunday, February 22 (nearest Tube station, Bounds Green), at 3 p.m. Service members in London with a few hours to spare will be welcomed.

Hitchin.—The local group lead by 2YS having been reinforced by 2TA now includes VU2FJ, 2FVH, 2DRM, 2BUC and 2BAG. G2TA says "unfortunately duty comes before pleasure and there is some difficulty in all attending meetings at any fixed times. However Sunday mornings always find a few of us together to rag-chew and swop ideas." G2TA has a 6-valve super under way and is also dabbling with 112 Mc/s. while 2YS prefers D.F. and has ideas concerning an entirely new type of amplifier, G3VI is at present at No. 2 S.S. and manages to do some receiver building in his spare time, or what his XYL calls "messing about in the evening." G5FA.

### DISTRICT 13 (London South)

South Central and South East Areas.—We have lost the keen support of G8TN, who has now entered the Services. We wish him good luck and thank him for his past work in the District as one of the T.R.'s. Eighteen members gave their support to the

January meeting held at 2HHD. We were especially pleased to see G2JK.

John Bousfield (2FQQ), who is now married and settled in Wales, sends his 73 to all old friends. G5PY, having returned from Devonshire, is back at his old QRA. He reports having heard quite a number of European amateurs recently. BRS4324 has started construction of a 15-watt amplifier.

As an experiment, the next meeting will be held at 3 p.m., Sunday, February 22, at BRS4324, 3 Englewood Road, Balham, S.W.12 (three minutes from Clapham South Tube Station). G2GZ.

### DISTRICT 14 (Eastern)

Chelmsford.—G5RV recently had the pleasure of meeting Mal. Geddes, G2SO (R.A.F.), of Southend, who has been posted to his home District after training. He hopes to be able to attend local meetings and to meet the boys again. 2SA, 6LB, BRS3650 and 4122 report a quiet month. 5RV is building a special D.F. receiver. 5JR (R.A.F.) looked in recently and brought some R.S.G.B. recruits from the R.A.F. The January meeting was attended by G2QT, 5HF, 5RV, 6LB, 6LL and BRS3650.

Chingford.—Cpl. John Hunt, R. Signals, 2FSR, sends greetings to 3XS, 8JM and BRS3044. He is on interesting radio work and has met a number of fellow hams in his capacity as instructor. Thanks for the letter, O.M., please write again—(D.R.).

Romford.—G6QX, who was a fighter-pilot last war, and a prominent DX man, sends news that he is busy on war work. Like 5RV, he had a rotary beam assembled ready to put into operation in September, 1939. Some of his best DX cards arrived during 1940 to cheer things up a bit. They included confirmations from VP7NT, VP8B (Falklands), CR7AF, CR6AI, VQ3HJP, VQ8AF and CT3AB.

Southend.—A very welcome letter is to hand from 5XI, who is home on some well-earned leave after a long period in the thick of things. He says he is now a martyr to malaria but otherwise quite O.K. (Good luck, O.M., from all of us, and may we have the pleasure of seeing you on your next leave). 3OA says that most of the Southend-ites are well dispersed, but many correspond regularly with him. He recently heard from 4LV (who called in at a ZS port) and 3GW in Canada who wrote about shops laden with bananas, oranges and coconuts! He has met many W and VE amateurs out there. 3WP, 3MD and 8UO write regularly G5RV.

### DISTRICT 15 (London West, Middlesex and Buckinghamshire)

Our appeal for a meeting place has met with response from 2ADL who has now returned to the District after having been located in Birmingham for some time. Incidentally, as a pre-war member of the N.Z.A.R.T., he would welcome any members of that Association who find themselves in London. ADL, who was also an early member of the Bromley Radio Society and the S.L.D.T.S., sends 73 to members of both Societies. Those who propose to attend the meeting should take either a 67 or a 97 bus to Scotch Common from Ealing or Greenford. Those coming by G.W.R. should change at Ealing Broadway. The D.R. would like to see all members make an effort to be present as there may be some-



thing which will interest many. (For details of meeting see "Forthcoming Events").

2BCN, who entertained us at his home in Hayes, has left for Australia. We take this opportunity of wishing him every success in his new venture. G5KT has written expressing regrets at his inability to attend recent meetings. G8FH has now left his station but ZL3JF (get in touch with 2ADL, O.M.), W2CXN, G8DR, 8VY, 2CIN and 2HIW are still there, although three of them will soon be leaving. 5KT has constructed an all-wave signal generator in his spare time.

BRS4487, writing from the Orkneys, wishes us "all the best for 1942." He has built a battery straight three which seems to be working well. He has recently met VK5AP, VE2JV, VE3BBF and G6BD. They intend to have some international amateur meetings. 8WR reports having done some listening on 28 Mc., while 6CO, now in the R.C.S., has paid a visit to 3UQ.

From Sgt. Horky, OK3HY, comes news that he hopes to be commissioned to the R.A.F. this month. He has already flown over Europe and a few days before Christmas was awarded the Czech Gallantry Medal. He wrote while on leave in Scotland, where he has a YL to whom he was about to become engaged. We offer him our congratulations on all his achievements. G6WN.

### DISTRICT 17 (Mid East)

The D.R. would like to thank those who have written wishing him a successful "term of office." A District collection having been started for the Prisoners of War Fund, it is suggested that individual contributions (which should be sent to the D.R.) be limited to one shilling.

Lincoln.—Another wedding to report! By the time this is in print Stan O'Hagen, G2CR, will be married. We wish him and his bride, who is also a medico, the very best of luck.

G3CZ has now finished his superhet and is wondering how to test it as there is now no ham DX to listen for! 5IG, who is again north of the border, was given a very novel Christmas present—a signet ring engraved with the R.S.G.B. symbol. A good idea we think. (So do we.—Ed.) He would like news of 2ASH (Horncastle). 3XM is trying to persuade 3VP to join the Society. Keep up the good work, O.M.

Boston.—Very little has been heard of the locals recently, except that 6GH is reported to be in Libya. 2UK was pleased to receive a visit from 2CR last month, and enjoyed seeing the films the latter took at the Lincoln Conventionette.

Grimsby.—G8DI reports from an R.A.F. station that he is spreading the gospel of ham radio by disposing of numerous copies of the Handbook. 3WT, of Liverpool, was resident in Grimsby recently.

The D.R. would like to hear from any member in Rutland or Grimsby who happens to read these notes. G2UK.

### Scotland

It is pleasing to report that the monthly meeting of "A" District was again well attended, no less than seven visitors being present. Attending for the first time were G8NL, and GM3CG together with two prospective members. The 1941 accounts for the District were read and duly approved. Thanks were

recorded to Mr. McDowall, GM3AR, who acted as auditor, after which a collection for the R. S. G. B. P.O.W. fund was taken. The next meeting will take place on February 22, in the usual place and it is hoped that many visitors will come along.

"B" District.—Congratulations to GM8AT a sergeant in the R.A.F., on his recent marriage; and to GM5LF late of "B" who has gained distinction by winning 1st prize for G.B. in the City and Guilds final in engineering. 5YN is at a shore naval station, while 5TA and 6VO are training naval personnel. 4DG and 4MG are at sea.

GM3RL who sends the above report seeks news of other old members of "B," especially GM2OX and GM3QH; he will be glad to hear from any of them. What about it?

It is some time since news has been received of "E" District, so a letter from Mr. Fish, 2HCZ, is doubly welcome. Although no longer a member of that District, he sends 73 to all his friends in "E." 2BUD, who is a radio-mech. in the R.A.F., is serving in Iceland. Another letter is to hand from BRS4333.

GM6ZV.

"D" District.—Mr. Jack Wilson, GM6XI, in a letter to Headquarters offers to organise a meeting in Edinburgh. Members interested in this suggestion are asked to communicate with him at 52 Macdowell Road, Newington, Edinburgh, 9 (Phone 42153).

From GM6XI we learn that F./Lt. Bloxham, 6LS, has been seen recently in Edinburgh, and that Bill Blyth, 5YX, has been promoted F./Sgt. VEILY, after spending a week with 6XI has disappeared without a trace. Does anyone know his present whereabouts? News is also solicited by 6XI of 8CN.

GM6FN and 6XI, who are serving with the R.A.F.V.R. (Training Branch) recently spent a week at Scarborough on a course.

Service members in or around Edinburgh as well as District members serving outside their own area are urged to drop 6XI a line so that he may keep everyone informed of their activities.

### Northern Ireland

Among the members who have written to the D.R. recently are J. Wicks (BERS94), J. A. Thomason (BRS4393), D. J. Kelly (BRS4571), and S. Dorman (BRS4644), all of whom are believed to be newcomers to this district. To each we extend a hearty welcome. BRS4644 sends details of a home-built receiver which uses a regenerative R.F., F.C., regenerative I.F., det. and two audio stages with a triode and noise limiting output. A heterodyne frequency meter is also incorporated. He is instructing Queens University Senior Training Corps, the A.T.C., and the H.G. in morse.

GI3MZ writes to say he has left the sea after two years on convoy work, and has taken up important radio work on shore. All GI members will learn with pleasure that the new job brings him promotion to the rank of leading wireless mechanic, and that he has been appointed instructor. (Congrats. O.M.—D.R.) He sends 73 to all old friends.

G15HN has been experimenting with a novel type of code oscillator, and has built himself a new T.R.F. receiver. It is hoped to publish details of the oscillator shortly, meanwhile, anyone interested can find HN at his usual QRA. G15QX.



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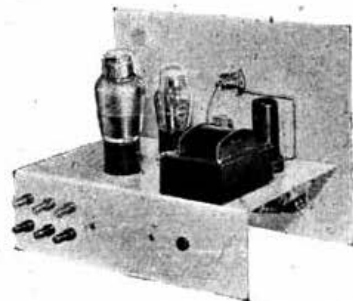
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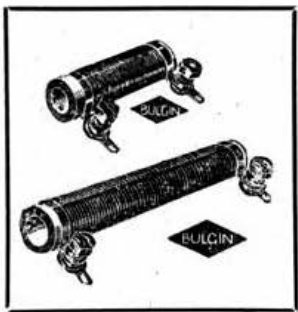
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# HEADQUARTERS CALLING

## December Council Meeting

*Resume of the Minutes of a Council Meeting held at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, on Saturday, December 13, 1941.*

**Present.**—Messrs. A. D. Gay, E. L. Gardiner, A. E. Watts, H. A. M. Clark, D. N. Corfield, S. K. Lewer, W. H. Matthews, W. A. Scarr, A. J. H. Watson, H. V. Wilkins and J. Clarricoats (General Secretary).  
**Apology.**—Mr. J. W. Mathews.

1. Eighty applications for membership were approved, of this number 62 had been proposed by Corporate members and 18 were accompanied with references. One resignation was accepted.

2. The monthly statement of account was approved.

3. It was agreed to loan to the Government £500 free of interest. The loan to be redeemable at any time subject to three months' notice.

\*4. The Gibraltar Amateur Radio Society was granted Honorary Affiliation.

5. It was agreed to pay annual premiums on deferred annuity policies for the General Secretary and his Assistant, so long as they remain in the service of the Society.

6. A new Service Agreement for the General Secretary was approved.

\*7. Dr. A. C. Gee, G2UK, was appointed Representative for District 17. Mr. C. E. Spillane, BRS1060, was appointed Deputy Representative for District 11. Mr. P. R. Solder, G5FA, was appointed Scribe for District 12, with Mr. S. Buckingham as Representative.

All other D.R.'s, Deputies and Scribes were re-appointed for 1942.

8. A cordial vote of thanks was recorded to Messrs. Corfield and Wilkins, retiring members of Council.

\* Reported upon in the January issue.

## Government Loan

At a recent meeting of the Council it was decided to loan to the Government, free of interest, the sum of £500 from the Society's Current Account.

The following is a copy of the letter received from the Treasury acknowledging the loan:—

*"The Chancellor of the Exchequer is very grateful to the Incorporated Radio Society of Great Britain for lending the sum of £500 to the country free of interest.*

*"Sir Kingsley Wood would be grateful if you would convey to the members of the Council his warm thanks and his appreciation of the spirit which prompts this help in the war effort.*

*"A Certificate will be sent to you shortly in which the loan will be expressed as repayable on the 17th February, 1942, or on any date thereafter on demand."*

## General Secretary

In accordance with the terms of a new Service Agreement with the Society, Mr. John Clarricoats, G6CL, will in future use the title General Secretary, except when dealing with matters relating to publications, when he will use the title General Editor.

## London Meeting

Following up the suggestion made at the Annual General Meeting, Council has arranged for a meeting to be held on Saturday afternoon, March 28, 1942, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2. The meeting will commence at 2.30 p.m., but a room will be available for informal discussion from 2 p.m.

In addition to the opportunity which the meeting will offer for London members to meet, Council trusts that all Service and Provincial members in London on the date selected will make a special point of attending if duties permit.

It is hoped to arrange a short technical talk during the afternoon.

Although refreshments cannot be obtained at the I.E.E., due to catering difficulties, members will be given the opportunity of taking tea together at Slaters' Restaurant, Strand, at the conclusion of the meeting.

## Piracy of a New Type

There has been a tendency in recent months for certain young men—non-members of R.S.G.B. in all cases—to claim that they were in possession of a radiating licence before the war. We have investigated several of these complaints and have drawn the attention of the person concerned to the fact that the rightful owner of the call has challenged their claim.

The trouble seems to be due largely to the fact that these young men have at some time in the past been associated with the licensed holder of the call they have borrowed—presumably to create an impression—and have perhaps assisted in the construction or operation of his station.

In war time it is difficult to challenge the right of anyone who claims to have held an amateur licence, but we would urge our members, when introducing themselves to other amateurs, to produce some evidence of their right to claim the use of a particular call sign. A printed QSL card seems the simplest way of establishing identity.

Another practice which is heartily deprecated is that adopted by certain persons who held a call sign many years ago and continue to use it. In such cases considerable confusion is likely to arise especially when the pre-war holder of the call is on Active Service.

It should also be clearly understood that operators of local Club stations, and members of Clubs which possessed a radiating permit, have no right to style themselves as holders of the Club call sign, unless they were officially listed by the G.P.O. In such cases they should make it clear that they were only operators of the particular station.

## AMERICAN PUBLICATIONS

Annual Subscription to "QST" ...	17/6
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A. R. R. L. Handbook (1942) ...	10/-
Radio Handbook (1942) ...	11/-
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- R. C. CAVE (G2KQ), Holiday House, Mill Lane, Walton-on-Naze, Essex.  
 W. A. ANDERSON (GM3TD), 45 Shawburn Road, Selkirk, Scotland.  
 D. S. PATTON (G3YO), 21 Emerson Road, Stoke, Coventry.  
 P. DREWITT (G4GQ), 27 New Steine, Brighton.  
 L. W. SKIPPER (G4LS), 148 Boston Manor Road, Brentford, Middx.  
 S. S. M. RAMSAY (GM4HR), 17 Ellen Gowan Drive, Dundee.  
 P. W. SMITH (G4MU), 67 Billing Road, Northampton.  
 C. W. CROOK (G5BT), 31 Sefton Road, Addiscombe, Croydon, Surrey.  
 A. A. BARRETT (G5UF), Belmore, Howards Hill, Cromer, Norfolk.  
 J. H. ROSCOE (G611), 31 Ashlea Road, Pensby, Wirral, Ches.  
 J. W. ISMAY (G6J1), 6 Douglas Avenue, Walthamstow, London, E.17.  
 J. L. MEDDEMSEN (2CKW), 203 Hollydale Road, Peckham, London, S.E.15.  
 G. MILLS (2CXO), c/o 93 Green Lane, New Eltham, London, S.E.9.  
 F. E. WILLIAMS (2DMS), 102 Crosswood Cres., Roby, nr. Liverpool.  
 W. J. KINCHEN (2DZT), c/o 71 Festing Road, Southsea, Hants.  
 A. J. WILLIAMS (2DOS), 1 Central Houses, Trethomas, Newport, Mon.  
 F. H. NORTH (2FPP), 44 Upsell Avenue, Palmers Green, London, N.13.  
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 T. H. SALISBURY (2HAO), 17 Jodrell Street, Nuncaton, Warwicks.  
 G. H. COOMBS (BRS4650), 32 Doone Road, Horfield, Bristol 7.  
 J. HOEY (BRS4651), 23 Reeds Avenue, Moreton, Wirral, Ches.  
 H. RICHARDSON (BRS4652), 211 Scrogg Road, Walker, Newcastle-on-Tyne 6.  
 T. R. SMITH (BRS4653), 107 Taylor Road, Kings Heath, Birmingham 14.  
 CAPT. D. A. L. DWYER (BRS4654), Woodfalls Farm, Landford, Salisbury, Wilts.  
 V. CUNDALL (BRS4655), 37 Wellesley Road, Walthamstow, London, E.17.  
 C. P. SELF (BRS4656), Fulham, Queens Road, Attleborough, Norfolk.  
 C. W. B. STIMPSON (BRS4657), 267 Hainton Avenue, Grimsby, Lincs.  
 R. W. MCCALL (BRS4658), 3 Broadwater Road, Worthing, Sussex.  
 H. M. UPWARD (BRS4659), 21 Marshals Drive, St. Albans, Herts.  
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 R. H. HALL (BRS4661), 61 Cheviot Road, Hawick, Roxburgh.  
 M. B. MOSS (BRS4662), 19 Logan Road, Bishopston, Bristol 7.  
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 F. H. THOROGOOD (BRS4666), The Firs, Overthorpe, nr. Banbury, Oxon.  
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**MATHEMATICS FOR THE RADIO AMATEUR—**  
Continued from page 275.

(28) (a)  $y = 1 - \frac{x}{3}$ , or  $3y = 3 - x$ .

(b)  $y = 3x - 3$ .

(c)  $y = -x - 2$ .

(29) (a) 1.02; 19.1; 2420.

(b) 0.45; 7.1; 33.

(These values are all approximate).

**Problems**

(30) From Fig. 14, what values of  $\theta$  make  
 $\cos \theta = \sin \theta$ . Verify from tables.

(31) Solve the following quadratic equations  
graphically, and check the results with the  
formula:—

(a)  $x^2 + x - 6 = 0$ .

(b)  $2x^2 + 5x + 3 = 0$ .

(c)  $x^2 + 3x - 4 = 0$ .

(32) Draw the graph of  $y = x^2$ . On the same  
scale and with the same axes of reference draw the  
straight line  $y = 6 - x$ .

What are the abscissæ of the points of inter-  
section of the parabola and the line?

Compare with the result of (31) (a).

(To be continued next month.)

## EDITORIAL—Continued from page 267

And so we could go on, but space is valuable. The important point is that 30,000 copies of this companion volume to our Handbook are to-day being printed. We believe it will prove a *worthy* companion in every way, but yours will be the final judgment.

Reserve your copy now, but don't blame us if you lose it as soon as it arrives, because the highly-attractive cover design—for which we have to thank G8QH, a new member of Council—is intended to catch the eye of all who see it! J. C.

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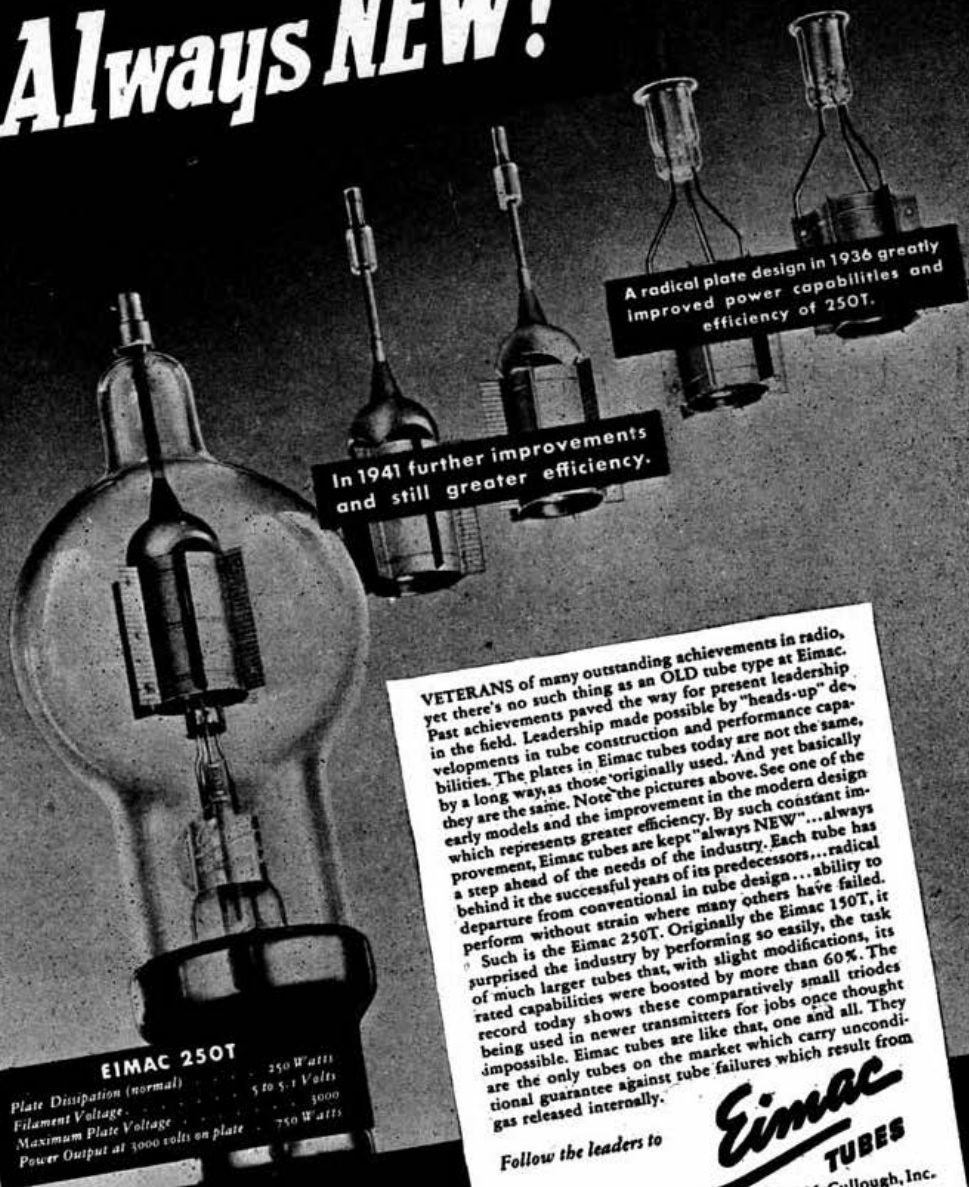
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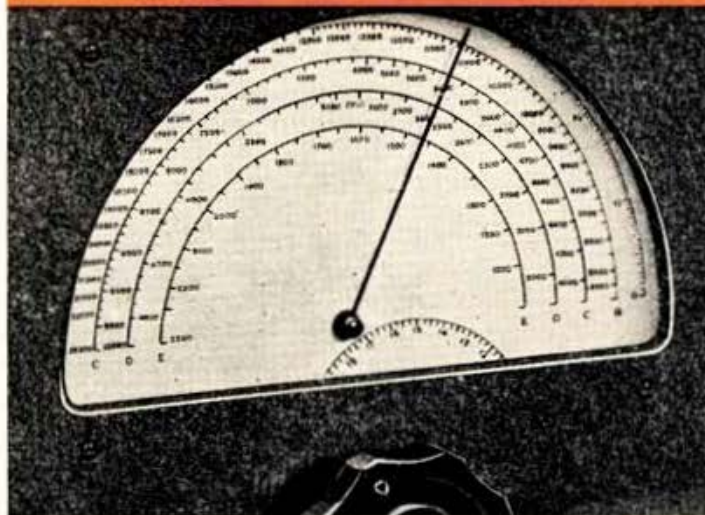
Amongst the many special features of the Eddystone "358" Communication Receiver the main tuning control is of special interest. Bandspread is superseded by a logging scale, the readings on which are amplified by a secondary vernier dial. This system gives all the advantages of bandspread, whilst making a return to any given position simple, as the main dial remains accurately calibrated. The fly wheel drive described alongside adds considerably to simplicity of control. These are but two of the many refinements indicative of the care and precision which Eddystone engineers have expended on both the "358" and its counterpart the Medium Frequency Model "400."



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