THE T&R

BULLETIN

A JOURNAL FOR

RADIO EXPERIMENTERS

Vol. 17 No. 3 SEPTEMBER 1941 (Copyright) Price 1/6

POSTAL CENSORSHIP PERMIT No. B.305

THE T. & R. BULLETIN

OFFICIAL JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

DEVOTED TO THE SCIENCE AND ADVANCEMENT OF AMATEUR RADIO

Hon. Editor: JAMES W. MATHEWS. Secretary-Editor: JOHN CLARRICOATS

Advertisement Manager: HORACE FREEMAN

Vol. XVII. No. 3 SEPTEMBER, 1941

CONTENTS

TWO SEPTEMBERS.

WITH World War Number Two entering its third year, it seems an appropriate moment to reflect awhile on the way the Society has stood up to war conditions. Two years ago this week, the Council met, and after the most careful consideration decided that the work of the Society should be continued. Following the meeting, a special message was addressed to every member through the medium of this Journal. The message opened with these words :—

"War or no war, it is our intention to carry on the work of the Society to the very best of our ability. The pillars on which the Society stands must not be allowed to crumble or decay, for it is essential that when peace returns the organisation must be strong and virile, fully prepared to safeguard the interests of its members.

"An important factor is to keep THE T. & R. BULLETIN *in existence, and this we shall do with the co-operation of our many advertisers who have promised their support. That its size must be reduced will be obvious to all, but we shall continue to publish articles and news of general interest. Topical information will be welcomed, as will personal letters from our members in the services. We hope* THE BULLETIN *will, more than ever, become the connecting link between our members everywhere."*

Little did we think, when that message was written, that two years hence we should be electing new members at a rate far in excess of any peak pre-war period, or that more advertising space would be booked per issue than at any corresponding period before the war, or that 22,000 copies of the Society's Handbook would have been sold in the two intervening years, or that Society meetings would be flourishing throughout the country. Yet these things, and many others have come to pass.

At the outbreak of war the finances of the Society were sound, as the result of wise administration on the part of Council, but is there one among us who would have dared to suggest that in September 1941, the Society would be able to record a credit balance *three times greater* than in September 1939? Yet such is the case.

This amazing progress has not been brought about by a miracle, or by luck. Several factors are responsible. First, members, especially those on active service, appreciative of the fact that a strong Society is essential, have introduced its work to their colleagues. Second, this Journal has provided a link between old and new members. The Service features in particular have been appreciated, as have the special series of Mathematics articles, and the *Vade-mecum* contributions. Third, our advertisers have rallied to our side in a manner which no member will ever forget.

(*Continued on page* 116)

METEOROLOGY AND THE ULTRA-HIGH FREQUENCIES

By S. G. ABBOTT (G3JU)

THE propagation of signals on the 56 Mc. band has been the subject of much experimental work by amateurs during the past few years, and some interesting results have been obtained. It has been established that, at times, ionisation of the E layer becomes sufficient for 56 Mc. signals to be reflected for short periods. This "sporadic E" reflection is confined to fairly local patches and is usually effective during May and the summer months. The very long distances covered more generally in the U.S.A., but also occasionally by British and other European stations, can be attributed to "sporadic E" layer reflection; the success of the U.S.A. amateurs would appear to be the result of the greater number of stations operating at any time at the right distances to make the best use of any temporary E layer reflection, coupled with the use of higher power inputs, which helps to overcome local absorption losses. The latter can conceivably be considerable at such high frequencies.

Basis of Investigation

The majority of amateur communication on the 56 Mc. band has been over distances of up to 200 miles, and much work of this kind has been done in Great Britain. The writer decided to investigate the relation between this semi long-distance communication and the meteorological conditions prevailing at the time. The basis of the investigation was the mass of data available in the ultra-high frequency notes in THE T. & R. BULLETIN and *Short-Wave Magazine;* the results obtained by British amateurs from the autumn of 1937 up to the cessation of amateur transmitting being summarised. The meteorological data was obtained from the daily weather reports issued by the British Meteorological Office.

Short Distance Communication

Communication over short distances can be accounted for by the direct signal, the distance covered depending on the power radiated, the type of polarisation and the local peculiarities, which govern the amount of absorption loss and also cause local reflections. The direct diffracted field strength at any distance from the transmitting station also depends on the type of air mass through which the signal is passing, and, although no definite figures can be given, it would appear that the amount of refraction of the direct wave varies for air masses of different origin, transmission being more effective in air of tropical origin, a fact which gives the Southern half of England an advantage over the North, because tropical air is found in lower latitudes.

Communication over Greater Distances

Communication over greater distances was found to take place on a large number of occasions when the British Isles was affected by a depression, or area of low pressure, and its associated frontal systems. The significance of this result is in that it supports very strongly the theory that the presence of a temperature inversion in the lower atmosphere, or troposphere, will cause ultra-high frequency signals to be bent and returned to earth at varying distances of up to 200 miles. The relation between troposphere inversions and depressions may be seen from a brief consideration of the formation and construction of a typical depression.

Fig. 1a represents cold, or polar, air flowing in juxtaposition with warm, or tropical, air. The surface of separation X — X¹ is known as the polar front, and rises upwards as a slope, the warm air overlaying the cold. A distortion of the polar front is caused by the intrusion northwards of the warm air, and this distortion develops until a complete cyclonic circulation of air round a centre of low pressure exists, as shown by Fig. 1b. The cyclone moves eastwards and the warm air in the "warm sector" XCX¹ has two surfaces of separation from the cold air. The forward boundary CX¹ is called the warm front, and the rear boundary CX, the cold front. If a cross-section of the depression is taken across YY¹, the result is as shown in Fig. 2. The surface warm front is at Y¹, while the warm air slides up over the cold, and a wedge of warm air, with a slope of from 1 in 100 to 1 in 200, extends in advance of the surface warm front. Similarly, at the cold front, the cold air is undercutting the warm, the boundary lying at a steeper slope, usually about 1 in 50. Now, the tropopause normally has an average decrease of temperature with height of about 3°F. per 1,000 ft., the actual lapse-rate depending on the degree of water vapour content of the air. If observations of vertical temperature

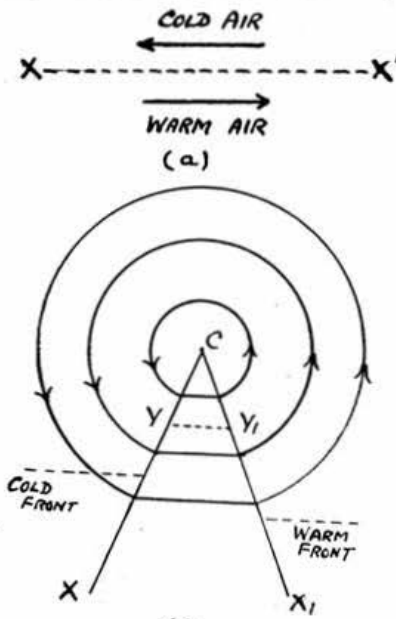


Fig. 1.

distribution are made in advance of the warm front, or in the rear of the cold front, a layer will be found where the normal decrease of temperature with height is interrupted. The height of this layer will depend on the slope of the frontal surface and the distance of the surface front from the point of observation. In this layer an actual inversion, or temperature increase, may occur, or the warm air may cause an isothermal layer, or only one in which a much smaller lapse-rate than normal occurs. The inversion or isothermal layer would appear to be effective in returning 56 Mc. signals to earth through a range of heights from about 2,000 ft. to 12,000 ft.; the sudden change in the dielectric constant of the air at the air mass boundary is apparently the cause of the reflection.

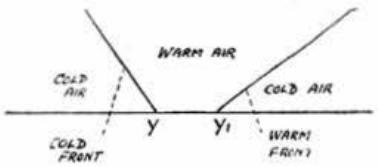


Fig 2.

Variable Conditions and Weather

The extremely variable conditions on 56 Mc. can be explained by stating that the weather of the British Isles and N.W. Europe is affected by depressions moving in from the Atlantic, generally on a west to east path. Many different tracks are taken by individual depressions. It will be appreciated that the period when lower atmosphere bending will be effective over any locality will depend on the path followed by the depression and more especially on the direction and speed of the fronts. Many of the depressions which cross the British Isles have become occluded while crossing the Atlantic. This takes place when the cold front catches up the warm front and the warm air is lifted upwards. Observations of upper air conditions above an occluded depression often show no inversion or isothermal layer. This affords another explanation of the better conditions experienced in the U.S.A., as the cyclonic activity there is much more vigorous and the depressions usually have well-marked fronts while crossing the continent, and consequently more favourable upper air conditions.

When long-distance communication could not be associated with cyclonic activity, it often appeared to take place in a well-developed anticyclone. This fits the warm-layer theory, as an inversion at varying heights is often found above an anticyclone. This is due to air subsiding and through being warmed by compression. Another cause of an inversion is radiation from the upper surface of an extensive and persistent cloud sheet.

"Contrasting Weather" Theories

Several "contrasting weather" theories have been put forward, also theories involving variations of atmospheric pressure. Variations of surface temperature are brought about by many different causes, but it may be stated that the passage of a front usually involves a change in surface temperature, although this is not always the case, owing to masking effects. The approach of a depression is indicated by a fall in atmospheric pressure, thus these theories would appear to be small parts of the main theory involving upper air conditions.

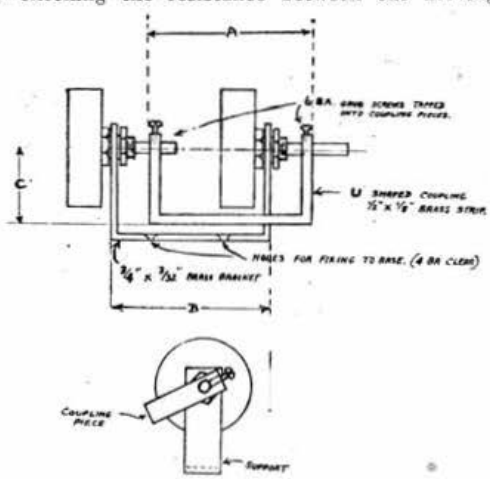
Practical Considerations

As to practical considerations, the use of stabilised transmitters has long been advocated. In the absence of precise knowledge of upper air conditions and the directions in which active stations are available, an omni-directional aerial would appear to offer the best chance of "hitting" anyreflectinglayer. The writer hopes to be able to make use of the wealth of meteorological information which is available to him as a member of the staff of the Meteorological Office, the basis of extensive work on this theory. A telephony QST of information on a lower frequency band is conceivable, with the permission of the Meteorological Office, and would enable the activity to be made to fit the prevailing conditions.

Potentiometer ganging unit for use in the Hetrofil

The sketch shows an alternative arrangement whereby a pair of 10,000 ohm potentiometers may be ganged for use in the "Hetrofil" described in the June issue.

It is important to set the potentiometers so that they both track correctly. This may be done easily by checking the resistance between the moving



Side and front views of Potentiometer Ganging Unit. Dimensions A, B and C to be suitable for particular make of potentiometer used.

contact and one of its fixed end contacts in each case, whilst rotating the ganged spindles. That is, for any given angle of rotation, a check should be made to see that the resistance from one side to the centre contact is similar in each potentiometer.

G5RV—G8ML.

Short and Sweet

"I got your Handbook recently. It's tops. It made a grand refresher course. So I thought 'If the Society can do that much for me in the theory, it will doubtless equate with practice.' So here's 'First subscription paid' (and accepted, I hope)."

A.K.

A SIMPLE ELECTRICALLY-DRIVEN COIL WINDER

By G. A. Hook (2CIL)

COIL winding is an operation frequently avoided by amateurs, yet it can be undertaken very successfully with a minimum of equipment.

The simplest method is to fix a breast drill horizontally into a vice, fitting the bobbin of wire tightly on to a length of rod held firmly in the chuck. The revolutions of the driving wheel are then counted and multiplied by the gear ratio to give the number of turns.

When employing this method of winding a coil the wire spool should be mounted in such a manner as will allow it to run freely in a position much lower than the drill. This can usually be done by mounting it on the bench apron itself, in which case the wire, can be fed up through the left hand in order to guide it into position evenly and under a fair degree of tension.

For filament and other windings up to 26 s.w.g. this method is quite satisfactory, but for finer wires especially those above 36 s.w.g., great care is necessary, because breakages are liable to occur due to the uneven speed of the drill when the handle passes dead centre. It will be found that a very slight variation of the driving wheel becomes quite appreciable at chuck speed.

For wires finer than 36 s.w.g. an even drive is therefore essential, and a sensitive means of tension control becomes imperative if breakages, caused by the wire hanging at the spool end, are to be avoided.

Motor Driven Winder

The winder in use at the author's station consists of a small A.C. motor, similar to those used in vacuum cleaners and hair dryers. This is connected *in series* with a domestic electric light bulb. Since the filament resistance of the bulb increases with the current flowing, the P.D. across the motor is reduced as the load on the motor increases. The effect of this is to produce a balance, which reduces the motor power if the wire hangs.

For fine wire operations, a 25-watt bulb is used, but a bulb up to 100 watts rating is employed for thicker wires, say 26 s.w.g. or thereabouts. Since the motor is operated well below its rated working voltage no ill effects seem to occur as the result of slow running, neither is radio interference caused due to excessive brush sparking.

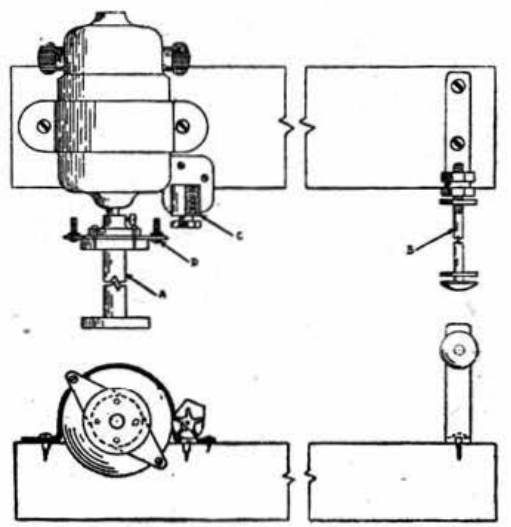
Assembly

The motor is mounted on a wooden base 17 in. long, 3 in. wide and 2 in. deep, hollowed to fit the motor and strapped firmly by a mild steel clip, $1\frac{3}{8}$ in. $\times$ $\frac{1}{16}$ in. screwed to the base.

The revolution counter (C) is an old Veeder cyclometer fitted tightly into a slotted brass plate $\frac{1}{16}$ in. thick fixed on to the base to allow the strikers (D) to engage the counter wheel and to turn in one-fifth of a revolution. By using two strikers, a 28-in. veeder will read one unit for every 36 revolutions of the motor. When counting is not required the veeder can be removed from the slotted plate. The large bobbin (A) is attached by means of wood screws to the flange. Small bobbins from midget intervalve transformers, headphones or meters are then pushed squarely over the core of the large bobbin with the outer flange removed and the core shaped to the required size. Care must be taken to see that the smaller bobbin runs true.

The wire spools should run freely between the two loose washers on the spindle B which is a 7 in. $\times$ $\frac{1}{4}$ in. coachbuilders, bolt fixed to a 3 in. $\times$ $\frac{3}{8}$ in. $\times$ $\frac{1}{4}$ in. mild steel bracket screwed to the base. For spools with large or square holes a wood liner somewhat longer than the spool is bored to fit loosely on the spindle and suitably shaped to take the spool core.

A bakelite 5-amp. switch and batten type lampholder are mounted on a two-way switch block in a



An ingenious Coil Winding machine, designed and illustrated by the Author.

position for left-hand operation, the right hand being used to provide tension and to guide the wire evenly on the bobbin.

If Breakages Occur

If a breakage occurs when winding fine wire the best method of effecting a join is to bring the wire from the bobbin to a point where the bracket and bolt meet, twisting it several times around the bolt. The end should then be sandpapered for about $\frac{1}{2}$ in. and tinned. Now wind the spool wire on the end of the bobbin and tin in like manner. Remove the end from the bobbin, twist the two tinned parts together and refix the end as before. The wires should now form a letter X. Solder the two ends and cut them close, afterwards covering the join with a narrow strip of Empire cloth. Winding can then be continued.

(*Continued on page* 116.)

STATISTICS FOR THE RADIO AMATEUR

By J. P. HAWKER (G3VA)

THE work of the radio amateur, if it is to be of any real use, is largely concerned with the interpretation of masses of recorded data. Obviously it is of little use collecting hundreds of reports from stations, unless the information obtained can be so arranged as to clearly indicate those matters under investigation. In order to do this, use must be made of processes known as Statistical Methods and Presentation, and it is the intention of the writer to give a brief description (completely ignoring the mathematics involved) of those systems most extensively used in the statistical and economic world and which can readily be adopted to meet the needs of the amateur.

Before any use can be made of recorded data it is necessary to bear in mind certain important considerations. The use of data collected for a purpose, different from that which it is now intended to employ it, greatly increases the chance of the results being biased. In any case the possible error of the figures used must be estimated since it is a mere waste of energy to show results to a higher degree of accuracy than that to which the original measurements were made. It is hardly necessary to point out that for any statistical results to be of value it is necessary to use figures possessing sufficient accuracy to avoid obtaining misleading conclusions.

There are two principal ways of showing the results of a series of experiments, the first by means of a Table and the second by means of a Diagram. The latter is particularly desirable where it is required to transmit information to a large number of people, for a diagram, if properly constructed, will show at a glance information which could only be gleaned by a prolonged study of the figures upon which it is based. Despite this, tables are in many cases preferable on the grounds that they are simpler to construct and less liable to the distortion to which over-simplified diagrams are prone. It is therefore considered advisable to mention some of the problems involved in table construction before attempting to outline the more common forms of diagrams. It should be noted that throughout this article the examples given are not based on actual experiments but are arranged solely to illustrate the text.

Signal Strength.	Total.	Under 500 Miles.	500–750 Miles.	750–1,000 Miles.	Above 1,000 Miles.	Total.
Below–						
S 3	5	—	1	2	2	5
S 4	10	1	1	3	5	10
S 5	18	3	4	5	6	18
S 6	32	14	6	8	4	32
S 7	40	20	12	6	2	40
S 8	36	28	6	2	—	36
S 9	11	10	1	—	—	11
—	**152**	**76**	**31**	**26**	**19**	**152**

Fig. 1.
Example of Simple Table.
Reports from European Stations received between two fixed dates.

Construction of Tables

The construction of a table, if it is to give maximum results, must be carefully planned and due attention given to the following points :—

(1) The eventual purpose of the table, and hence the elimination of all superfluous columns and material ;
(2) The avoidance of over-complication caused by octnotes, references and sundry columns ;
(3) The decision as to whether or not the results would be shown more simply by the use of two or more *separate* tables.

After the general outline has been planned, everything must be done to make the layout as clear and as logical as possible. This can be accomplished with the help of such devices as light and heavy rulings and figures, the placing of interdependent figures in neighbouring columns and the grouping of data so that breaks appear at regular intervals. Further, should the table contain many columns, it is advisable to facilitate reference by numbering the columns and rows, by showing totals and headings on both sides of the rows and by emphasising the more important headings. Some of the above points are shown in Fig. 1, which illustrates how a simple table can be of use to the radio amateur.

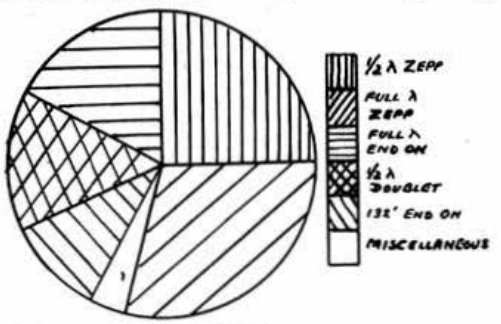


Fig. 2.
Example of Pie Diagram.
Stations contacted on 14 Mc. between May 15 and August 25, 1939, using various aerials 100% = 164.

Diagrammatic Representation

Some of the advantages of a diagram have already been mentioned and there are many others too well known to need enumerating. All that will therefore be attempted is the classification of the more useful types of diagrams, with particular reference to those that may not be so familiar to the radio amateur.

The importance of Cartograms, or the representation of statistical data on maps, is widely recognised, especially with regard to aerial experiments. Most amateurs will, at some time or another, have proudly displayed maps liberally decorated with flags or pin heads of varying hue. In the case of cartograms, showing results of beam aerial experiments, they are often marred because insufficient " spot points " are used and by insufficient correction being given to results due to exceptional conditions.

Two forms of diagrams which, while of little serious use, can be readily understood by the casual observer are the " pie " diagram and the " pictogram." The form of an ordinary pie diagram is shown in Fig. 2 and this can be easily adopted to suit many purposes. In the example the angle which each " portion " subtends at the centre of the

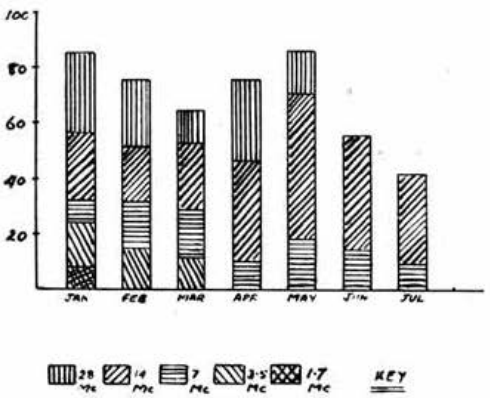


Fig. 3.
Example of a Compound Bar Chart.
North American stations heard between January and July, 1938.

circle is proportional to its percentage of the whole, *e.g.*, the number of stations contacted on the ½-wave Zepp is 25 per cent. of the total number of stations contacted and it therefore subtends an angle of 25 per cent. of 360 degrees, *i.e.* 90 degrees. The pictogram, which is mainly used for advertising purposes, employs small pictures instead of figures and is effective in showing changes in number, to an audience unskilled in the interpretation of figures. A good example of their use was a recent series of advertisements illustrating the crowding of restaurants at certain hours. Where, as is often the case,

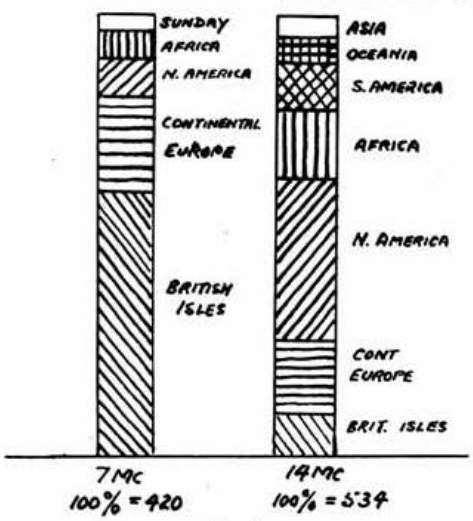


Fig. 4.
Percentage Bar Chart.
Amateur Stations heard during 1938.

the pictures are of different sizes there is considerable danger of misinterpreting the results owing to confusion between linear measurements and areas. The former is generally preferable, at least in advertisement work, since changes are more apparent.

A most valuable class of diagram is the " Bar Chart " in which bars of lengths proportional to the figures they represent are drawn as in Fig. 3. The width of the bars being equal, both the lengths and the areas are proportional to the original figures. Fig. 3 shows a Compound Bar Chart in which the bars are subdivided. This can be done with advantage providing that, in so doing, their essential simplicity and clearness are not lost. An alternative treatment is the Percentage Bar Chart (Fig. 4) in which the bars are of equal length and show only their internal division.

Finally, there is the ordinary " Line Chart," or true graph, based on co-ordinate geometry. Since the importance of these is fully recognised, the writer will merely draw attention to one or two points that should not be overlooked. Firstly, when the curve is based on approximate readings, the curve line may, with profit, be heavily emphasised to distinguish it from the rulings. Secondly, when curves are drawn from a comparatively few separate readings, it is desirable to indicate on the graph the actual points observed, or else to include the data in tabular form accompanying the graph.

To conclude the writer would point out that, in a short article, it is impossible to do more than touch the fringe of a complex subject. It is hoped, however, that the article may have been of sufficient interest to arouse study in an important phase of amateur work which, all too often, is viewed from a purely mathematical aspect. A further study is recommended to all amateurs who hope, one day, to again be in a position to collect, and make the best use of, amateur radio statistics.

Bibliography

(1) *Statistics for Professional Students.* By R. L. A. Holmes, B.Com. (Pitman.)

(2) *An Elementary Manual of Statistics.* By A. L. Bowley, Sc.D., F.B.A. (*Macdonald & Evans.*)

(3) *Business Charts.* By T. G. Rose, M.I.Mech.E. (Pitman.)

Electronic Engineering

As announced in the June issue of THE T. & R. BULLETIN, the title of *Television & Shortwave World* has been changed to *Electronic Engineering* which denotes its wider scope. The issue of the paper in its revised form was marked by the inclusion of Data Sheets on radio and V.H.F. design which should be valuable to Society members. Back copies of the Data Sheets are available to subscribers whilst the stock lasts. Subscriptions should be paid to Hulton Press Ltd. (Circulation Dept.), 43–44, Shoe Lane, E.C.4.

The Editor, Mr. G. Parr, invites technical contributions from members which should be sent to him at the above address. Phone : Central 7400.

Interested ?

The Secretary-Editor will be interested to hear from any member who wishes to be considered for employment at a R.N. Air Station as a civilian wireless mechanic. The salary offered is 78s. per week and living quarters would be provided for a single man.

MATHEMATICS FOR THE RADIO AMATEUR

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

SECOND SERIES—PART III. TRIGONOMETRY: THE SOLUTION OF TRIANGLES

IT has been shown (Vol. 17, No. 1) that all the sides of a right-angled $\triangle$ are completely determined if one side and one $\wedge$ are known.

This determining of all the sides and angles of a $\triangle$ is referred to as "solving the triangle."

A right-angled $\triangle$, however, is rarely the one under consideration in a problem; hence we must proceed to the general solution of triangles, whether they are acute, obtuse, or right-angled.

There are many formulæ which, in various cases, can be applied, but it is generally necessary to consider only three. These are of such general utility that they are well worth understanding and remembering.

Definition

An obtuse angle is an $\wedge > 90°$; *e.g.* $\hat{C}$ in $\triangle$ ACB in Fig. 4b.

An acute angle is an $\wedge < 90°$; *e.g.* $\hat{C}$ in Fig. 4a.

The side denoted by "a" in a $\triangle$ is the side opposite $\hat{A}$; the side "b" is opposite $\hat{B}$; the side "c" is opposite $\hat{C}$. This system of denoting the sides of a $\triangle$ makes for a greater simplification of formulæ, and also abbreviates written work.

Useful Algebraic Formulæ

(1) $(x + y)^2 = x^2 + 2xy + y^2$.
(2) $(x - y)^2 = x^2 - 2xy + y^2$.
(3) $x^2 - y^2 = (x - y)(x + y)$.

Examples :—

Using (1):

$(2a + 3b)^2 = (2a)^2 + 2 \times 2a \times 3b + (3b)^2$.
$= 4a^2 + 12ab + 9b^2$.

$(37)^2 = (30 + 7)^2$.
$= 30^2 + 2 \times 30 \times 7 + 7^2$.
$= 900 + 420 + 49$.
$= 1369$.

Using (2):

$(3m - 4n)^2 = (3m)^2 - 2 \times 3m \times 4n + (4n)^2$
$= 9m^2 - 24mn + 16n^2$

$(98)^2 = (100 - 2)^2$
$= 100^2 - 2 \times 2 \times 100 + 2^2$
$= 10000 - 400 + 4$
$= 9604$.

Using (3):

$16x^2 - 25y^2 = (4x)^2 - (5y)^2$
$= (4x - 5y)(4x + 5y)$.

$87^2 - 16^2 = (87 - 16)(87 + 16)$
$= 71 \times 103$
$= 7313$.

The Sine Formula

In $\triangle$ ABC of Fig. 4a, AM is drawn $\perp$ BC, to meet it at M.

In $\triangle$ ABM, $\frac{AM}{AB} = \sin B$, *i.e.* $AM = c \sin B$.

In $\triangle$ ACM, $\frac{AM}{AC} = \sin C$, *i.e.* $AM = b \sin C$.

$\therefore c \sin B = b \sin C \quad (= AM)$

or $\frac{\sin B}{b} = \frac{\sin C}{c}$

Similarly, if a perpendicular were drawn from B upon AC, we should obtain

perpendicular $= a \sin C = c \sin A$

or $\frac{\sin C}{c} = \frac{\sin A}{a}$

Linking these two results,

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

Stated in words: "In any $\triangle$ the sines of the angles are proportional to the opposite sides."

Hence (1) to find a, given $\hat{A}$, $\hat{C}$ and c

$$\frac{\sin A}{a} = \frac{\sin C}{c}$$

$$\therefore a = \frac{c \sin A}{\sin C}$$

(2) to find $\hat{B}$, given $\hat{A}$, b and c

$$\frac{\sin B}{b} = \frac{\sin A}{a}$$

$\therefore \sin B = \frac{b \sin A}{a}$, and the value of $\hat{B}$ is found from the Table of Sines.

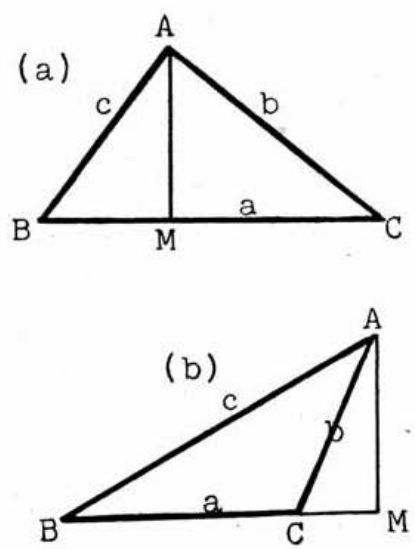


Fig. 4.
The Solution of Triangles; (a) acute-angled, (b) obtuse-angled.

* "*Westwood*," *Heslington Lane, Fulford, York.*

Example :—

A △ ABC has $\hat{A} = 50°$, $\hat{C} = 60°$, CB (=a) =5″. Required the length of side AC.

$$AC = b\,;\ \frac{\sin A}{a} = \frac{\sin B}{b}.\ \therefore b = \frac{a \sin B}{\sin A}\,;\ \hat{A} + \hat{B} + \hat{C} = 180°\,;\ \hat{A} + \hat{C} = 50° + 60° = 110°.$$

$$\therefore \hat{B} = 180° - 110° = 70°$$

$$\text{hence } b = \frac{a \sin B}{\sin A} = \frac{5 \times \sin 70°}{\sin 50°} = \frac{5 \times 0{\cdot}9397}{0{\cdot}766} = \frac{4{\cdot}6985}{0{\cdot}766} = 6{\cdot}13″.$$

Notes :—

(1) It must be remembered always, that in a △, the sum of the three angles = 180°. Therefore given any two angles, the third is always known.

(2) If one wishes to avoid division by decimals, and logs are not to be used, the formula $b = \frac{a \sin B}{\sin A}$ can be written as $b = a \sin B \times \text{cosec } A$, since $\frac{1}{\sin A} = \text{cosec } A$. Then from Tables, $b = 5 \times 0{\cdot}9397 \times 1{\cdot}3054 =$ etc. In other words, cosec $50° = 1{\cdot}3054$ tells us that the reciprocal of $0{\cdot}766$ $(\sin 50°) = 1{\cdot}3054$.

The Cosine Formula (for 3 sides, 1 angle)

1. In △ ABC of Fig. 4a, if AM is ⊥ BC, a geometrical theorem gives us

$$AB^2 = BC^2 + CA^2 - 2 \times BC \times CM$$

i.e. $c^2 = a^2 + b^2 - 2 \times a \times CM$

$$\text{But } \frac{CM}{CA} = \cos C.\ \therefore CM = b \cos C.$$

$$\therefore c^2 = a^2 + b^2 - 2ab \cos C.$$

In a similar manner it can be shown that $b^2 = a^2 + c^2 - 2ac \cos B$; and by drawing a perpendicular from C to AB, the formula $a^2 = b^2 + c^2 - 2bc \cos A$ is obtained.

When these formulæ are studied, their construction is clear, and the three can be represented by the one

$a^2 = b^2 + c^2 - 2bc \cos A.$

Stated in words : "In any △, the square on one side equals the sum of the squares on the other two sides less twice the product of these two sides and the cosine of the angle they include."

This clearly is the formula to evaluate the third side of a △ when two sides and the included angle are known.

Example :—

A △ has two sides of 6″ and 8″ which include an angle of 60°. What is the length of the third side ?

Let it be x. Then $x^2 = 6^2 + 8^2 - 2 \times 6 \times 8 \times \cos 60°$

$$= 36 + 64 - 96 \times \tfrac{1}{2}$$

$$= 100 - 48 = 52.$$

$$\therefore x = \sqrt{52}$$

$$= 7{\cdot}21″.$$

2. This formula has a further use. If the sides a, b and c are given, there is only one unknown quantity—Cos A—in the equation. This then can be determined.

$$\text{for } a^2 = b^2 + c^2 - 2bc \cos A$$

$$\therefore 2bc \cos A = b^2 + c^2 - a^2$$

$$\therefore \mathbf{\cos A = \frac{b^2 + c^2 - a^2}{2bc}}$$

which again represents two other formulæ

$$\cos B = \frac{a^2 + c^2 - b^2}{2ac}\,;\ \cos C = \frac{a^2 + b^2 - c^2}{2ab}$$

Therefore given the three sides of a △ the cosine of any of the angles can be found, and hence the angles determined.

Example :—

A △ has sides of 4″, 5″ and 8″. What is the angle opposite the side of 4″ ?

Suppose the △ is ABC with a = 4″, b = 5″, c = 8″. Then $\hat{A}$ (opposite a = 4″) is required.

$$\text{Cos A} = \frac{b^2 + c^2 - a^2}{2bc} = \frac{5^2 + 8^2 - 4^2}{2 \times 5 \times 8} = \frac{25 + 64 - 16}{80} = \frac{73}{80}$$

$$= 0{\cdot}9125.$$

$\therefore \hat{A}$ = the angle with a cosine of $0{\cdot}9125$, and from Tables = 24° 9′.

Note :—

Even without knowing the geometrical theorem used above, its truth is easily demonstrated.

In Fig. 4a,

$$AB^2 = AM^2 + BM^2.\ \therefore AM^2 = c^2 - BM^2.$$

$$AC^2 = AM^2 + MC^2.\ \therefore AM^2 = b^2 - MC^2.$$

$$\therefore c^2 - BM^2 = b^2 - MC^2$$

i.e. $c^2 = b^2 + BM^2 - MC^2$

$$\text{But } BM^2 = (BC - MC)^2 = (a - MC)^2$$

$$\therefore c^2 = b^2 + (a - MC)^2 - MC^2$$

$$= b^2 + (a^2 - 2a \times MC + MC^2) - MC^2$$

$$= b^2 + a^2 - 2a \times MC$$

$$= b^2 + a^2 - 2a \times b \cos C$$

Cosine Formula (for 3 sides, 2 angles)

In Fig. 4a,

$$\frac{BM}{c} = \cos B\,;\ \frac{MC}{b} = \cos C$$

i.e. $BM = c \cos B\,;\ MC = b \cos C$

$$\therefore BM + MC = c \cos B + b \cos C$$

$$\text{But } BM + MC = BC = a$$

$$\therefore \mathbf{a = c \cos B + b \cos C}$$

This formula also represents three of parallel construction (the one given, and $b = a \cos C + c \cos A$, $c = a \cos B + b \cos A$) which give the value of the third side of a △ when the other two sides, and two angles—neither being included between the given sides—are known.

Example :—

A △ XYZ has $\hat{X} = 80°$, $\hat{Y} = 30°$, x = 4″, y = 6″. What is the length of side z ?

$$z = x \cos Y + y \cos X$$

$= 4 \cos 30° + 6 \cos 80°$
$= 4 \times 0{\cdot}866 + 6 \times 0{\cdot}1736$
$= 3{\cdot}464 + 1{\cdot}0416$
$= 4{\cdot}5056''$

Obtuse-angled Triangles

It will have been observed that in the above analysis the △ ABC of Fig. 4a only has been considered. The △ for solution, however, may clearly be as in Fig. 4b where $\hat{C}$ is obtuse.

This is immaterial. If AM is drawn ⊥ BC produced, the proof of each formula follows exactly on the same lines as that given for the acute-angled △ ABC of Fig. 4a.

Two extra facts only have to be remembered :

(i) For an obtuse-angled △, the geometrical theorem needed for the second formula is

$$AB^2 = AC^2 + BC^2 + 2BC \times CM$$

(ii) $\widehat{ACM} = 180° - \widehat{ACB}$, *i.e.* $\widehat{ACM} = 180° - \hat{C}$

$$\therefore \cos \widehat{ACM} = \cos (180 - C) = -\cos C$$

$$\sin \widehat{ACM} = \sin (180 - C) = \sin C$$

Using these facts and the same procedure in the proofs as given above, it will be found that formulæ identical with those already given, are obtained.

Hence the general formulæ apply whatsoever the type of triangle.

Suggested Exercises

(1) Verify that the formulæ for the solution of a △ are true

(*a*) When the △ has an obtuse angle
(*b*) When the △ is right-angled. (Remember $\sin 90° = 1$; $\cos 90° = 0$.)

(2) Derive the geometrical formula used for an obtuse-angled △ ($AB^2 = AC^2 + BC^2 + 2BC \times$ CM) by applying Pythagoras' Theorem to the △.

(3) Specimen examples can be constructed and the solutions checked by drawing.

Problems

13. In each example find the values of the sides and/or angles marked x, in the △ ABC.

	a	b	c	$\hat{A}$	$\hat{B}$	$\hat{C}$
(*a*)	6″	10″	—	x	70°	—
(*b*)	10″	5″	x	—	—	60°
(*c*)	8″	10″	x	45°	60°	—
(*d*)	4″	5″	6″	—	—	x
(*e*)	x	3″	3″	135°	—	—
(*f*)	6″	x	9″	x	x	120°

Solutions to Problems

(7) 0·6428 ; 0·5095 ; 0·6428 ; −1 ; −0·766 ; 5·6713.

(8) (a) $-\frac{1}{4}$; (b) $\frac{1}{2}$; (c) −1·4434

(9) $\frac{\sqrt{3}}{2}$ or 0·866 ; $\frac{1}{\sqrt{3}}$ or 0·5774

(10) Yes ; because $17^2 = 15^2 + 8^2$

(11) 180·28 miles, 56° 18½′ (approx.) E. of N.

(12) (a) 5 cm. ; (b) 13 cm. ; (c) 22° 37′.

(*To be continued next month.*)

Re-magnetising Headphones

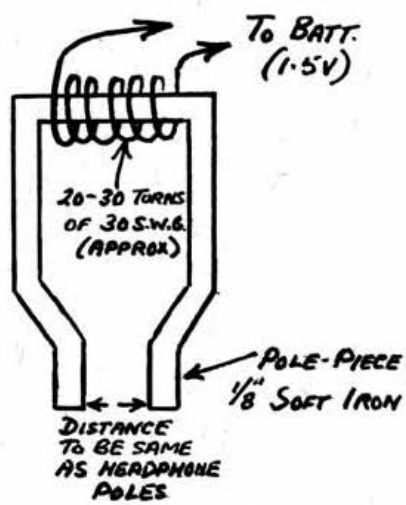
In response to the note in a recent issue, three members have suggested means for re-magnetising headphones.

G2UJ writes : "A short while ago I had the misfortune to connect a pair of 4,000 ohm headphones across a 150 volt D.C. supply due to a faulty condenser, with the result that the headphones were quite dumb. Tests showed that the current had passed through the windings in a de-magnetising direction, so working on the kill-or-cure basis, I reversed polarity and "flashed" them with the same voltage, with the result that they were restored to their original efficiency. They have given excellent service to date, about six months."

BRS2671, writing from Glasgow, in the land of Caution suggests the following method :—

Construct a small electro magnet as shown in the accompanying diagram, so that its poles are of the same size and are the same distance apart as the poles of the headphone magnets. Connect the electro-magnet to a 1·5v battery, and determine the polarity by means of a compass needle. Ascertain the polarity of the headphone magnets in the same way and then place the electro-magnet against the headphone magnets so that their opposite poles are adjacent. Allow to cool for a few minutes when the headphones should be as good as new.'

As an alternative method G2VV recommends the use of heavy gauge wire (10 or 12 D.C.C.) wound on to a soft iron rod 12 in. long, ½ in. diameter and bent to the shape of the letter U. The ends of the winding (which occupy the centre 4 in. of the rod) are connected to a 6-v. or 12-v. car accumulator.



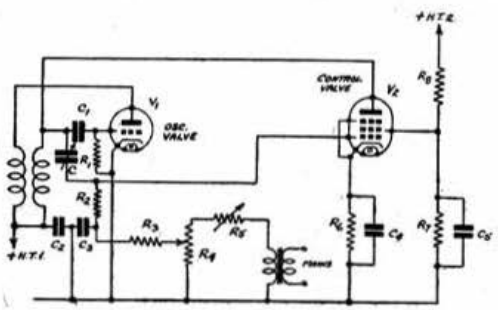
One of three methods suggested for re-magnetising headphones.

EXPERIMENTAL SECTION

Receiver Group

An interesting and useful refinement which can be added to a Signal Generator is a means of "wobbulating" the output so that selectivity curves may be read directly on an oscilloscope. This means that the oscillation frequency is modulated over a given range (say 40kc/s) either electronically or by means of a condenser driven round at 25 revolutions per second, whilst the output of the receiver under test is fed to the horizontal plates of the oscilloscope. If the vertical plates are then scanned at the correct frequency, the response curve of the receiver is shown on the oscilloscope.

For best results the Signal Generator should be made up of two oscillators arranged so that their outputs mix and beat at the required output frequency. One oscillator is made variable in the ordinary way, and the other is "wobbulated."



Electronic modulator.

C1	.0001 μF	R1, 4	50,000 ohms.
C2, 3	.01 μF	R2	500 ,,
C4, 5	.1 μF	R3, 7	10,000 ,,
V1	6C5	R5	20,000 ,,
V2	6K7	R6	1,000 ,,
		R8	25,000 ,,

If mechanical "wobbulation" is used, a convenient method is to drive a disc of copper which is fixed at an angle to the shaft. The disc is then driven round inside the tuning coil, but slightly to one side. The frequency width of the "wobbulation" can be adjusted by varying the angle and dimensions of the disc. One precaution, which is very necessary with mechanical "wobbulation," is to mount the whole of the "wobbulated" oscillator inside a mu-metal box at least ⅛-in. thick to keep stray electric motor fields from affecting the oscillator. The motor should be of the synchronous type if possible and capable of running at a very constant speed.

A disadvantage of the mechanical "wobbulation" method is that the bearings of the motor and shaft tend to wear; for this reason electronic "wobbulation" may be preferred. The diagram appended shows a suitable circuit using a 6K7 as control valve. The operation is as follows: The anode of the 6K7 (V_2) draws A.C. in phase with the voltage dropped across R_2 which is in series with the main tuning capacity (C). The result is that this anode current is part of the main tuning circuit capacity current, so that the bias on the control grid of the 6K7 is changing, hence it will draw different values of anode current. This action is equivalent to changing the value of C with the result that the frequency is changed accordingly. The control grid bias is varied at 50 cycles as shown and the change of oscillator frequency is increased by increasing the A.C. grid bias on the control valve.

To apply this type of Signal Generator to a receiver, the output is connected to the control grid of the mixer and the receiver oscillator valve removed. The signal passes through the I.F. amplifier and is rectified at the second detector in the usual way and is then applied to the horizontal plates of the oscilloscope. A suitable way of doing this is to connect the plates across the diode load resistor. The vertical plates are then scanned at 25 traces per second and the I.F. response curve is clearly shown on the oscilloscope. It is then an easy matter to alter the trimmers to obtain the desired bandpass.

G5HF.

A New Microphone

A leaflet (No. BC9339) recently issued by *The General Electric Co. Ltd.*, describes a new microphone (Type BCS2282) designed for message-broadcast centres, announcing systems, etc.

This is an instrument of the moving-coil type mounted in a hardwood desk pattern cabinet measuring 6¼ in. high, 5¾ in. wide and with a base depth of 4½ in. It is fitted with a double-pole key and an internal terminal strip for connection purposes.

Since the microphone coil is of low impedance (15 ohms) a relatively long transmission line may be used between the control and amplifier without deleterious effect on the frequency response and with a minimum of noise pick-up. The sensitivity is 65 decibels below 1 volt R.M.S. at 1,000 cycles.

Where announcing systems require remote switching for control of the amplifier, or the remote selection of speech lines, a switchbox of similar design and appearance to the standard BCS2282 model can be supplied to order. This embodies additional control keys and signalling lamps according to individual requirements.

Fixed Condensers made from Wire

Odd small values of capacity can be made from No. 22 D.C.C. wire. For example, a ·00015 μF., condenser requires two pieces each 3 ft. 4½ in. long which must be twisted tightly together in a manner similar to twin flex. In order to make the condenser non-inductive the wire is wound on to a pencil, half the winding being in one direction and half in the other. When the pencil is removed a condenser about 3 in. long results.

A table of other values is given below.

Capacity.	*Length of Wire.*
·0001 μF.	2 × 2′ 3″
·000075 μF.	2 × 1′ 7″
·00005 μF.	2 × 1′ 1½″
·000025 μF.	2 × 6½″

BRS4270.

KHAKI AND BLUE

South London members may like to know that Leading Naval Airman, W. W. Taber, G3GU, whilst on his way to Trinidad had the good fortune to meet VP2AB and 2AD in the Leeward Islands. In a further letter he reports his safe arrival at an Air Training School. We gather he was "mixed up" with the *Bismark* affair.

* * *

Also from Trinidad comes news of Ldg. Tel. R. G. Clark, G6BJ, whose home is in Carshalton. At the time of writing (late July) he was waiting to leave Piarco for duty at the R.N. Wireless station, Falkland Islands. Any hams there ?

* * *

L./Cpl. W. P. Air, 2FWX, appears to have been posted to a veritable ham's paradise in Durham where the brood is so strong that miniature ham-fests take place daily ! He wishes to thank G4GW, 5PR, 5JK and 2HLF for the kind hospitality they extended to him whilst stationed in the Sunny South.

* * *

A.C.1 J. H. Cant, G6FU, who recently returned from Iceland reports that G3CI, 3FB, 3ZK, 5MY, 2DRR, VE4MG, ZL1JZ and BRS3890 are stationed in that country. He has forwarded a most interesting descriptive account of life in TF, but for certain reasons we are not able to publish it in this Journal. To ensure that it is seen by his many friends in South London, it is being circulated with the War-Time Log sponsored by G8QH.

* * *

We do not often have the pleasure of offering congratulations to members of the lower deck who have moved up to commissioned rank. Telegraphist J. A. T. Bousfield, 2FQQ, however provides us with the opportunity, as he has now exchanged his "bell bottoms" for Sub-Lieutenant's braid. We have a sneaking suspicion that his ham experience played a big part in the promotion. Good luck !

* * *

Cpl. Dawes, BRS3896, before leaving No. 2 S.S. for an overseas destination asked that his 73 be conveyed to all old friends. In particular he wishes to be remembered to "The Second Earlies" and to all old friends at Nos. 1 and 3 S.S.

* * *

Private Fred Wingfield, R.A.O.C. (G3CX), writing from somewhere at sea, apparently did not have the good fortune shared by G2GB and Co., for not a single ham was encountered on the voyage. He reports meeting Capt. C. Slingsby, who he suggests is an old-time amateur.

* * *

The many friends of A.C. "Ted" Edwards, G6XJ (until recently Commercial Manager of *Stratton & Co.*, Birmingham) will be interested to hear that he has taken up an appointment as Sub./Lt. with the R.N.V.R.(A.). He will be glad to hear from other members in the F.A.A. Letters should be addressed to his home at 126 Witherford Way, Birmingham, 29.

* * *

Congratulations to F./Lt. and Mrs. Chapman, G2IC, on the arrival of a Junior Op. Prior to the war Tony was a "live wire" in the Folkestone area, but during recent months he has been stationed at an R.A.F. station somewhere in Scotland. He has now gone abroad. Letters should be addressed 77634 F./Lt. G. A. Chapman, A6485, R.A.F., c/o A.P.O. 1170.

* * *

A.C.1 P. Nicoll, G5ZN, who was recently posted to an R.A.F. station in Lancashire had a pleasant surprise when he discovered that the corporal in charge of his first duty watch was G8IX whom he worked on 7 Mc. before the war.

* * *

Writing from Malta, L.A.C. B. W. Montague, 2ANR, reports having contacted Geoffrey Cooper G3PP, of Sheffield, Clem Jardine, G5DJ, of London, and F./Lt. J. M. R. Sutton, GW2NG. The suggestion has been made that all G's and ZB1 amateurs in the Island should endeavour to form a war-time radio club. Those interested are asked to write to 2ANR at R.A.F. Headquarters, Malta.

* * *

Sgt. R. B. Lever, G8QS, wishes to be remembered to old friends in the Bury area. At the time of writing he was in hospital recovering from the effects of a motor cycle accident.

* * *

Writing from R.A.F. H.Q., Middle East, under date of August 3, S./Ldr. Ken Jowers, G5ZJ, reports all well except for flies and heat ! On his arrival in Cairo he found invitations awaiting him to call upon SU1WM and SU1RH. Ken says "the C.W.R. lads are doing fine work out here, some of which are in my squadron in the desert. What the R.A.F. would have done without amateur radio goodness only knows !" Although he has not seen a copy of the BULL. since he left home, he gets a fair amount of ham news from "Radio" which, together with "QST," can be purchased quite easily from local shops and even from camp bookshops in some stations.

Ken tells us that it is not uncommon to see 600 ohm. feeder lines coming down from quite decent directive arrays although low impedance line technique does not yet appear to have reached the M.E.

He found some interesting amateur aerials during a visit to Stanleyville, Belgium Congo, but could not find who they belonged to. Ken sends 73 to GW5FI and all old friends.

ON ACTIVE SERVICE

TWENTY-FOURTH LIST

WE publish below our twenty-fourth 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 September 1.

Rank and Name	Regiment or Branch	Pre-war Call or B.R.S.
Cpl. R. V. Arnaboldi ...	R.A.F. ...	4399
Sgt. R. G. Arthur ...	,, ...	4359
A.C.2 E. C. Ball ...	,, ...	4169
Sig. A. G. Boon ...	R.C. of S. ...	2BAG
2nd Lt. C. H. Babbs ...	R.A.O.C. ...	G5IG
Cpl. E. C. Brown ...	R.C. of S. ...	4410
A.C.2 J. R. Burton ...	R.A.F. ...	G3ZA
Cpl. J. Clegg	,, ...	4349
Cpl. J. R. Dathan ...	,, ...	4412
P./O. H. C. Daynes ...	,, ...	G5YD
Cpl. R. W. Dilworth ...	,, ...	4369
A.C.2 R. H. Dove ...	,, ...	G8MR
L./Bdr. J. C. Eades ...	R.A. ...	4387
Sub.-Lieut A. C. Edwards.	R.N.V.R.(A.)	G6XJ
L.A.C. N. J. Elliott ...	R.A.F. ...	4355
A.C.2 R. W. Elliott ...	,, ...	596
Cpl. P. Elms	,, ...	2BBP
A.C.1 S. L. Evatt ...	,, ...	2FPN
Tel. J. F. Fawkes ...	R.N.V.(W.)R.	4388
J. Ferguson	British War Correspondent	GM6WD
A./A. K. C. B. Field ...	R.A.F. ...	4363
A.C.2 F. W. Fletcher ...	,, ...	2FUX
Signal Sgt. W. Ford ...	2nd King's Regt.	BERS 494
Cpl. C. Fretwell ...	R.A.F. ...	2BCF
P./O. J. C. Funnell ...	,, ...	4340
L.A.C. A. W. Gale ...	,, ...	G3XN
A.C.1 J. Gillies ...	,, ...	4352
A.C.1 W. L. Harrison	,, ...	2HJY
L.A.C. M. Heffernan ...	,, ...	4342
Cpl. W. J. Hickmore ...	,, ...	4344
A.C.1 L. D. Hubbard ...	R.A.F. ...	2FRM
Cpl. W. J. Inman ...	,, ...	4367
Pte. R. M. Jeremy ...	R.A.O.C. ...	2CMJ
Spr. L. R. F. Joynes ...	R.E. ...	2967
Capt. A. L. Kaplowitch	R.C. of S. ...	4360
2nd Lt. A. E. Kilner ...	,, ...	4357
Sub-Lt. N. H. King ...	R.N.V.R. ...	4343
A.C.2 S. Leith	R.A.F. ...	GM4HX
L./Cpl. R. E. Lewis ...	R.C. of S. ...	G3PC
A.C.1 W. Lishman ...	R.A.F. ...	2AKK
A.C.2 J. Lomax ...	,, ...	G3TU
Sgt. M. F. Owen ...	,, ...	4353
P.O. J. B. Parker ...	R.N. ...	3697
A.C.1 R. G. Parker ...	R.A.F. ...	G3GD
A.C.2 N. D. Peerless ...	,, ...	1539
A.C.2 W. T. Pickard ...	,, ...	G8KP
A.C.1 T. H. Plater ...	,, ...	4404
P./O. D. E. Postle ...	,, ...	2FAO
Cpl. R. Price	,, ...	4411
Pte. A. Renshaw ...	R.A.O.C. ...	2HOG
L.A.C. D. J. Rycraft ...	R.A.F. ...	4405
A.C.2 A. W. Ryley ...	,, ...	G4NX
Gnr. R. T. Sealby ...	R.A. ...	4398
Cpl. J. L. Shaw ...	R.A.F. ...	4395
L.A.C. A. Sloman ...	,, ...	2HFU
Sig. K. N. Smith ...	R.C. of S. ...	G3RB
L.A.C. J. Snowden ...	R.A.F. ...	4385
Gnr./O.F.C. A. D. Spowage.	R.A. ...	4364
A.C.1 E. A. Sweetman	R.A.F. ...	4345
2nd Lt. J. A. Thomason	R. Fusiliers	4393
L.A.C. H. Tupling ...	R.A.F. ...	2HNN
A.C.1 E. V. Ward ...	,, ...	4356
O./Tel. P. G. Warham	R.N. ...	4409
A.C.2 C. L. Waywell ...	R.A.F. ...	4413
A.C.2 J. S. Wheatley ...	,, ...	2HMJ
A.C.W./1 J. Wheeler ...	W.A.A.F. ...	4373
A.C.2 N. Whyvel ...	R.A.F. ...	2CMN
L.A.C. C. E. Wilkinson	,, ...	4390

73.

G3BG (11 Cherry Valley Gardens, Cherry Valley, Belfast), to G3AC, 3IM, 3JT, 3XN, GW3XW, G5MV, 5RR, 6JB, 6MB, 8BK.

* * *

G3CX R.A.F. (Rose Cottage, near Church, Old Heathfield, Sussex), to G2AO, 2KV, 3AT, 4FV, 5IH, 5JZ, 6GO, GW5KJ, 5OC, ZE1JE.

* * *

G3UC (R.C. of S.), to G2FX, GM3BA, G3SJ, 3ZO, 4NC, 5QO, 6VX, 8UB, 8WT, 2CGQ, BRS3766 and W3XW.

* * *

G3YU (Deirdre's Cafe, Purewell, Christchurch), to G2JK, 3DK, 3MF, 3OK, 3TH, 3VB, 4JG, 6ZO, 8OW, 8VR and all the 5YC gang.

* * *

G4AP (88 Bath Road, Swindon), to G4CI, 5WP, 6YZ, 8IX, 8NT, 8UG, 8VH, W1WV and all old friends in District 7.

G5ZN (R.A.F.), to G3NL, 3SJ, 3WU, 5MV, 5QX, 5RY, 6QF, 6VQ, 8TD, 8VO, 2BFB.

* * *

G8CY (12 Bedford Road, London, N.15), to G2AT, 2VK, 5BB, 5DY, 5HS, 5VY, 6AU, 6JI, 6LH, 8DO, 8MF.

* * *

2FWX (R.C. of S.), to GM2IA, 2YY, 2PL, 6YL, 8AR, 8SG.

* * *

BRS3468 (R.A.F.), to G2XS, 3BW, 3RK, 3RW, 5QO, 6TG, BRS2999, 3766, 3821.

* * *

2DYQ (32 Bromwich Street, Bolton), GW3GL, G6OK, GM2JF, G6AQ, 6PO, 6QA, 8NL, 2HAX, W9LYK, and all Bolton amateurs in the Services.

"CIEL" AND OTHERS AT C——L.

LAST month it was our privilege to spend a week at an R.A.F. Signals School, in company with four other members of the Society who are serving with the Air Training Corps. If proof had been needed that Amateur Radio is very much alive in that busy centre of activity it was quickly forthcoming.

From the moment of our arrival, until our departure eight days later, ham radio played its part in providing a welcome break from the more serious work in hand.

Morning break on Tuesday found the A.T.C. party in one of the instructors common rooms. It was here that the seeds were sown for a camp meeting later in the week thanks to a chance contact with Cpl. Cleggett, BRS2834 (pre-war T.R. for Maidstone), and Norman Davis, G6TV, (Civilian Instructor and Hon. Secretary, R.A.F.A.R.S.).

On the morrow P./O. Douglas, BRS4406, was " signed on " whilst initial contacts were established with Cpl. Fenton (pre-war T.R. for Blackpool), Cpl. Carr, G2XU and L. W. Airton, G2HT.

MID-DAY RENDEZOUS

A few of the many amateurs who were at No. 1 S.S. R.A.F. last month. Front row : G2RI (D.R. No. 4), VE4HW, VE4SO, ex-G8CU. Standing : BRS4414, G5YD, BRS4407, VE5TR, ——, G2XC, G5SY (D.R. No. 6), GM6XI, VE3ATM, ——, G6CL, BRS4132, G5JB, G2JD, GW8RS.

The journey to G——— was made in company with P./O. Sydenham, G5SY, of Torquay, at which point we were joined by F./O. Wilson, GM6XI, of Edinburgh. Those who know the vagaries of the rail connection made from here will sympathise with us, for true to form it produced a late arrival ! Patiently waiting was P./O. Ridgway, G2RI, who came down from the school to meet us.

From then onwards ham contacts matured at a rapid rate. P./O. Ted Williams, G2XC, recently commissioned and posted to the school for a course, together with F./Lt. Bamford, G5JB, were located at tea time, following which two other A.T.C. Signals Officers in F./O. Pepler, G2JD and P./O. Grover, ex G8CU of Ipswich, were met. Later that evening the ante room took on the appearance of a ham meeting when several VE's, including VE3ATM, VE3IX, VE3AJT, VE4HW, VE4SO and VE5TR, were run to earth. During the evening GM6XI discovered that his room-mate was P./O. Betton-Foster, BRS4132. P./O. Sperring, GW8RS and P./O. W. McCann, G3PS were added to our log before the weekend had passed.

Monday evening produced " first contacts," with S./Ldr. Hibbins, BRS3887, P./O. James, BRS4414, P./O. Cain, BRS4407 and P./O. Daynes, G5YD.

During visits to various parts of the school, A.C.2 Spashett, G3RK, L.A.C. Jim Davis, G2OA, and W./O. Street, BRS2991, were encountered.

Tea-time on Thursday brought together a dozen or more hams including several Canadians who were not members. Needless to say that state of affairs was soon corrected !

It was a heartening sight to see *The Amateur Radio Handbook* so much in evidence everywhere. Especially interesting was the fleeting glance we caught of a row of 50 copies which are used officially for instructional purposes. During the week the opportunity was taken of contacting Mr. W. B. Willson who for many months has " handled " the Handbook at his shop a few miles from the school.

Without doubt the high spot of the week, from a ham radio point of view, was a meeting held in camp on the Friday evening when 38 members or prospective members signed the register. Those present included : G2JD, 2RI, 2XC, 2YZ, 2ZR, GM3PB, G4HN, 4HP, 5JR, 5RL, 5SY, 6CL, 6TV, 6XI, 8GG, 8ON, 2AMV, 2AYV, 2CFO, 2FCV, 2FIX, 2FNS, 2FRS, 2HGL, 2HGQ, BRS2834, 4104, 4132, 4148, 4344, 4363, 4390. The meeting was addressed by G6CL who outlined R.S.G.B. activities in war-time and its plans for the future.

He extended a welcome to non-members and recorded his thanks to BRS2834 and G6TV for arranging the meeting.

Space limitations will not permit a more detailed account to be given of many other interesting features of our visit, but we should be negligent if we failed to record meetings late in the week with F./O. Gordon Waugh, VE1LY, Sgt. Algar, G6AU and A.C.1 Benekritis, VE5AAG.

In bringing to an end this very brief account of ham radio at this well-known R.A.F. Signals School, we should like to place on record our thanks to G2RI, 2XC, 5JB, 2CFO, and many others who made our stay so enjoyable.

The more serious part of our work was made easier by the knowledge that we were seeing for ourselves the jobs of work being undertaken day in, day out, by those of our friends who will wear R.A.F. blue until X430 is sent for the last time !

VE3AHV, G4CL ex-ZB2A, and VE3AHX at the recent Leeds P.D.M.

The Shy VK's !

The fact that umpteen VK's are in Great Britain is common knowledge, but the number that have contacted H.Q.'s since the outbreak of war can be counted on the fingers of one hand. Either these amateurs have never heard of R.S.G.B. or they prefer to forget ham radio. Isolated chance contacts are frequently reported, such as one last month between Tel. Frank Wright, BRS4187 and VK2KS, 3IR, 3UH and 4CJ, but with the exception of VK2ADE and VK3UH none has made himself known to H.Q. If this should catch the eye of any Australian amateur in Great Britain we would ask him to write to G6CL or telephone Palmers Green 3255 when in London.

* * *

Projected Meeting in the Isle of Man

In view of the fact that a number of members are believed to be located in the Isle of Man, Mr. Hedley Punch, G6UR, 15 Groudle Road, Onchan, is prepared to arrange a meeting at an early date. All who are interested should communicate with him without delay, so that arrangements can be put in hand. Mr. Punch is supported in his suggestion by F./Lt. Blundell, G5LB.

Prisoners of War

Further to the list published in our last issue we have to record that Corporal D. W. Carr, G8UC, R.A.O.C. has been taken prisoner whilst serving in the Middle East. G8UC was an active member of the Maidstone Society prior to enlisting 18 months ago. We understand he is fit and well.

* * *

L.A.C. A. R. Richardson, 2CXT, whose photograph was published in these columns recently, was captured during the Crete campaign. His address will be published as soon as he is transferred from his present transit camp.

* * *

Mrs. E. Lister sends the following information concerning her son.

Lt. A. W. Lister (R.A.), G5LG, B.P. of W., 808, OFLAG VIIC, Germany. (Taken prisoner at Calais, May 1940.) Lt. Lister is studying for a degree in Electrical Engineering. He writes quite cheerfully and is now receiving a sufficiency of food through the Red Cross.

* * *

David Mitchell, GW6AA, informs us that A. C. Webb, G6WQ, is an interned civilian in Germany, having been taken prisoner when the ship on which he was serving as radio officer was sunk early this year. His address is A. C. Webb, British interned civilian, No. 88871, STALAG XB, Germany.

* * *

We have been asked to state that the call G5CI attributed in our last issue to Leading Naval Airman Cunningham (now a prisoner of war) was last held by by Mr. Crossland, of Whitstable. Mr. Cunningham held the call before going to Malta some time before the war

PROBLEM PICTURE No. 1

A well-known Scottish amateur. No visible pips and a strange cap badge. Obviously an old-timer. Who is it ? What's his job ?

(Solution, page 116.)

WAR-TIME CONVENTION

FOR a few brief hours during Saturday, August 9, the Spirit of Convention was recaptured. Without the usual pre-war ceremony, without extensive publicity, nearly 100 members and friends met together in London to renew old friendships.

Catering difficulties prevented any form of organised luncheon party being arranged, but it was surprising how quickly some 60 odd persons managed to find accommodation in the already crowded dining room of the Strand Palace Hotel around 12.30 p.m.! Especially welcomed were Gerry Marcuse, G2NM and Bevan Swift, G2TI, (Past Presidents of the Society). "Khaki and Blue" predominated at several tables although the representation was not quite so strong as some anticipated. Service duties were probably responsible.

Prior to the luncheon a small party had visited the Institution of Electrical Engineers (venue of all Conventions), for the purpose of arranging an exhibition of modern radio equipment and literature, kindly loaned by the following BULLETIN Advertisers: Webb's Radio, G5NI (Birmingham) Ltd., Electradix Radios, Hulton Press, Candler System, A.C.S. Radio, Voigt, Pitman, Celestion Ltd., Signal Equipment Ltd., A. F. Bulgin & Co. Ltd., Erie Resistor Ltd., London Central Radio Stores. Q.C.C. explained their reasons for no display in a special notice entitled "Facing the Facts." Several other advertisers wrote expressing regret that Government contracts, etc. prevented them from sending items for display.

Judged by the amount of interest shown in this surprise feature, which incidentally was organised entirely single-handed by Mr. H. Freeman (the Society's Advertising Manager), it seems strange that no attempt has yet been made by any trade organisation to arrange a representative exhibition of recently developed equipment and components not on the secret list.

The proceedings throughout the afternoon were informal, except for a brief word of welcome from Mr. E. L. Gardiner, Executive Vice-President (who also apologised for the unavoidable absence of the President), and a ten minutes "memory test" by G6CL who, on the spur of the moment, hit upon the idea of introducing everyone who had signed the attendance book.

Telegrams of greeting were read from the President and Messrs. Jeapes, G2XV and Jones, G5JO.

At 4 p.m. the group photograph, reproduced below, was taken, after which tea was served.

CONVENTION, AUGUST 9, 1941.

Front row (seated).—Miss N. Corry, G2YL, H. Bevan Swift, G2TI (Past President), Miss C. Hall, G8LY, H. A. M. Clark, G6OT (Hon. Treasurer), John Clarricoats, G6CL (Secretary-Editor), E. L. Gardiner, G6GR (Executive Vice-President), H. Freeman (Advertising Manager), Mrs. H. Freeman, Miss A. M. Gadsden (Assistant Secretary), Gerald Marcuse, G2NM (Past President), Mrs. J. Clarricoats.

Although the meeting broke up at 5.30 p.m. nearly 30 members and their ladies adjourned to Pinoli's, scene of many famous pre-war ham gatherings, for an informal dinner.

THE SERVICES AT CONVENTION.
Front row.—Sgt. D. S. White, G4DS, W./O. C. J. Rockall, G2ZV, F./O. J. Clarricoats, G6CL, F./O. W. D. Wadsworth, VE5ZM, Lt. N. G. Gologan, 2DOK.
Second row.—L.A.C. A. K. Wall, G2YZ, P./O. W. H. Allen, G2UJ, P./O. J. W. Limmer, G2GU, P./O. B. E. P. Sadler, G2RC, A.C.2 M. A. Pyle, 2BLA, F./Lt. J. N. Walker, G5JU, Cpl. R. Rugg, 2BRR.
Back row.—Sgt. W. D. Johnson, G8NS, Capt. H. J. Packe, 2CMF, A.C.1 L. A. Young, BRS1357.

It is not possible to list all who attended, but among the many old timers present, in addition to those named in the captions to the photographs, we noticed: H. V. Wilkins, G6WN (D.R. No. 15), S. Buckingham, G5QF (D.R. No. 12), P. R. Solder, G5FA (Deputy D.R. No. 12), Denis Heightman, G6DH (Experimental Section Manager), Douglas Chisholm, G2CX, W. E. Russell, G5WP (D.R. No. 7), J. W. Mathews (Hon. Editor), W. H. Matthews, G2CD, D. N. Corfield, G5CD, F. Charman, G6CJ, W. E. Corsham, G2UV, R. C. Neale, G6GZ, L. H. Thomas, G6QB, A. C. Simons, G5BD, P. G. A. Voigt, L. Cooper, G5LC, G. R. Lee, G6GL, Dr. G. Bloomfield and Dr. Yates Fish, G5CA.

In placing on record this very brief account of our first war-time Convention, the writer on behalf of all who were present, wishes to extend thanks to Mr. Freeman for his co-operation, and to Mr. Simcock for providing a welcome cup of tea.

J.C.

"HAPPY LANDINGS" AT LINCOLN

THE events of Sunday, August 24, 1941, will long be remembered by all those who were fortunate enough to attend the Mid-Eastern Conventionette held at The Sarcen's Head, Lincoln, on that date. Chief credit for this, the first organised R.S.G.B. meeting held in Lincolnshire for more than 12 months, and the first really representative District gathering since the outbreak of hostilities, goes to Dr. Arthur Gee, G2UK, of Boston, who, on learning that the Secretary-Editor would be in that part of the country on the day in question, convened a preliminary meeting a few weeks earlier to arrange details.

It is doubtful however, whether "the worthy doctor" (as he was referred to by one overseas speaker later in the day) anticipated that as a result of his efforts, an attendance equal, to, if not better than, any previously held in District 17 would be recorded.

After a preliminary ragchew, the company which numbered over 60 strong, settled down to listen—very patiently we thought for a warm afternoon—to a talk by G6CL, during which he dealt with the work of the Society in war-time. He warmly welcomed the representatives present from Canada and New Zealand, and stressed the value of regular meetings at centres where amateurs are stationed.

At the conclusion of the talk, numerous photographs were taken. Tea followed—and a very good one too.

From 5.30 onwards technical talks were given by

THE LINCOLN CONVENTIONETTE
was "born" early in July when G6LH, 6TV, 2HT, 2XC, 2FNU, 2CR (rear row) with 2UK, 2SO, 2BUV, 2BQC and 8HB (front row) met together to arrange details.

various members of "the R.S.G.B. brains trust." Denis Heightman, G6DH, started the ball rolling with an informative account of his work in connection with V.H.F. propagation. Dr. S. O'Hagan, G2CR, followed with useful advice regarding crystals and crystal oscillators, whilst F./Lt. J. N. Walker, G5JU (who had made a long journey from Wiltshire to attend), opened our eyes to the possibilities of vibro-packs for amateur purposes. P./O. Laurie Ridgway, G2RI (D.R. for the East Midlands) after referring to "that N.F.D. Trophy which my District won in 1939 but has never seen" made some pointed remarks about District notes, emphasising that members on active service, as well as those following civilian occupations, should consider it a point of honour to send a few lines each month to their D.R.

P./O. W. Sydenham, G5SY (D.R., South Western) supported G2RI and joined with him in extending greetings to those overseas amateurs who were present. F./O. Gordon Waugh, VE1LY (late of the C.B.S.), L.A.C. J. A. Wade, VE3ADN (an old timer with last war ribbons), Cpl. E. Benefritis, VE5AAG, and Cpl. W. J. Wainright, ZL2IE (late Hon. Treasurer, N.Z.A.R.T.) referred to activities in their home country and expressed their pleasure at being present at an R.S.G.B. Conventionette.

Mr. Norman Davis, G6TV (Hon. Secretary, R.A.F.A.R.S.) spoke of the standing arrangements which have been made at No. 1 S.S. to allow amateurs at the school to meet in Hut 2 on Monday evenings. He also expressed the hope that the present meeting would be the forerunner of many similar gatherings in camp.

In bringing the meeting to a close Mr. Davis and Dr. Gee expressed their appreciations to G6CL for his attendance.

We, for our part, felt truly grateful to all who had made our stay in Lincolnshire so enjoyable.

E.R.K.

Military Objectives.

There's some as flies and some that don't,
Some that will and some that won't,
But give me the bloke what works on the ground
A doin' his job when there's Jerries around.

There's no dodging bombs for them as flies
They can fight back afore they dies.
But who 'as to sit tight while the bombers roar
A blasting them that works on the floor ?

'Tis yourW.E.M.'s, your W.O.M.'s and your R.T.O.'s too
With hearts of oak and spirits true :
Them's the blokes, and with loud invectives
Adolf calls 'em his first objectives.

They quickly retune, refit and strain
To get them Fighters up again.
And when old Jerry starts to strafe
They can't do nowt but sit and laugh.

When Goering plays his little jokes
He always goes after them ground staff blokes.
He knows full well when Fighters land
They can't get off without this band.

They're dirty, greasy looking erks,
Who can't hit back, but never shirk,
Just do the job they're meant to do
Tho' bombed and blasted black and blue.

They get no medals, get no fame
And they don't want them :
For in this game of killing the Hun
By only them can War be won.

And so I find my story's told
Let us toast these heroes bold
Who work and slave but never tire
Despite Jerry's bombs and cannon fire.

And when in History our children are taught
How well and true our Pilots fought :
Perhaps a chapter, added at the back
Will tell of the chaps that never slacked.

Silent Keys

It is with deep regret that we record the death on active service of Flying Officer James Howard Emmerson, R.A.F.V.R., G8HA / GM8HA, of Walton - on - Thames, Surrey, at the early age of 21.

Known affectionately as Jim to a wide circle of friends, his death will come as a great shock to many amateurs.

Interested in Amateur Radio at school age, he soon took an A.A. licence, and was granted the call 2BJK. Shortly afterwards while at the City and Guilds College, he obtained his full licence.

On completion of his course he joined the Post Office Engineering Staff, and was posted to Scotland. It was during his short stay there that he endeared himself to many amateurs in 'A' District where he attended the meetings, and also gave several of his much appreciated lectures. Shortly after the outbreak of war, he joined the R.A.F., and was posted to East Anglia as Pilot Officer.

By his death the service have lost a very keen and efficient officer, and the Society a brilliant amateur, who would have played a great part in our activities after the war.

His cheerful smile and bright disposition will be missed by all.

To his relatives we extend our sincere sympathies. G2GK.

We also regret to announce the death of Capt. T. Anding, HI3N, in a flying accident on August 14.

Capt. Anding, whose home was in Long Island was a Commercial Pilot in the Dominican Republic until last September when he joined the A.T.A. and came to this country.

He had many friends in amateur circles and those who had the pleasure of meeting Mrs. Anding on a recent visit to this country extend to her and to her daughter their sincerest sympathies. G8NU.

THE MONTH "OFF" THE AIR—August, 1941

By A. O. MILNE, G2MI.

Notes and News

THE DX still seems to come in, despite the spread of the war still further afield. Although the bulk of the signals still to be heard are in the Americas, occasional tit-bits arrive from other quarters of the globe to help to keep the somewhat wind-riven flag of ham radio a-flying.

BRS3789 has been doing some good work on 14 Mc. and reports the following outstanding DX. W5HDH (New Mexico), OA4GU, CX2BK and NY1AD with plenty of not quite so hot to back them up, for example: W5BEK, CTA, DEW, GEU, GSY, W6LS, RKI, RQG, SE, W7AYQ, BNM (Idaho), HRV, CO2CY, YV1AQ, K6OQE, KA6FB and U9MI. W5DGB has been logged on 7 Mc.

BRS3825 confirms the reception of European medium-wave broadcasting stations in Australia. He has a friend who spent 16 years in Tasmania and Western Australia and who used to receive most of the European stations quite regularly. 3825 mentions that 8BQ, 2FQH and 2DBM are stationed with him and also sends along quite a nice little bag of calls heard including K4GSG, W7INB and KA9AA on 14 Mc. C.W. with W5BEK, 6RKI, KA1AT, CM, 6FB, 7FL and 9AA on 'phone, some of them up to S9.

G6QN asks us to correct the statement in our last issue that the stations he reported were on 'phone. They were c.w. On the night of July 27, he tells us, LU1CA and PY1HQ were trying to make contact and failed, although both were a good S8 in London. Others heard are K4HHT, HVQ, HMN (QRP), W6AP, W7VY and NY1AB, all on 14 Mc. 7 Mc. seems to have quietened down quite a lot in the past few weeks.

D3DSR was heard to tell PY1DH that he would QSL "after the war, which won't be long now!" Oh yeah? LT2AB is a new phoney, heard on 14 Mc. recently.

G5FN now at Penarth discovered that his milkman was none other than G5XN! We hope there have been no complaints of late delivery due to early morning doorstep ragchews! 'FN would like to hear from G2VA as two letters have been returned.

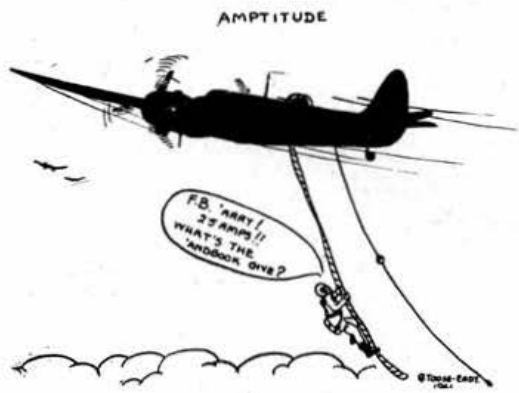
G2ZV, interested in 4AB's researches adds these rare items: TJCRJ in Transjordan during July 1926, and SK1 also July 1926, in Sarawak.

Talking of Transjordon, some of us remember working XZC6FF during one B.E.R.U. contest when he was situated at Maan, Transjordan. ZV mentions, in passing that he needs only three states for WAS ten.

BRS3846 using a 4-valve T.R.F. records the following outstanding signals on 7 Mc. during June and July. W3JCY/K4, W5DGB, IFW, DCH, HKU, CXQ and UF. W9CUO, KVF, NDK, PKU, SAG, YWQ, K4GSG, GXV, CM2MR as well as X8AA who gave QRA as "Sahara" with a T9 note. PX1AB and PX1A have been active and JD3, 337 on about 7,060 kc. may have been J6AT or J6EM. (More likely a service signal O.M.)

Many of the A.R.R.L. field day stations were heard at good strength.

He has kept a record of signals heard during these two months and a graph of maximum skip against temperature brings out the rather surprising point that the former appears to be inversely proportional to the latter. Any comments?



Far and Wide

This month is remarkable for the large number of letters received from overseas members. They are therefore being given a heading to themselves. We hope this may become a regular feature.

ZD2H writing from Northern Nigeria says there has been a noticeable falling-off in signals on 3·5 Mc. with an increase of static and general background noise, although W4FSS was heard at 599 on May 20. Amid commercials and broadcasters, most W districts can still be heard on 7 Mc., whilst South Americans come in well. On April 5, D4TKP answered a CQ from a CE but despite frantic calling, the CE did not rise to the bait.

A letter from AC4YN to "Clarry" brings the news that he has been down with pneumonia, and is just beginning to crawl around once more, after nearly three months in bed! He has had a pretty close shave but the doctors have managed to save this very valuable bit of DX for us for future use! He is hoping to erect a decent aerial soon and intends trying out a super E.C.O. designed and built by W9HLF.

VU7BR, doing a spot of work with the Bahrein Volunteer Defence Force, says they have a partial blackout and that mails are somewhat irregular.

SU1SG, an old friend to many of us, in a letter to G6CL reports that Bill Marsh, SU1WM has moved to Tanta, about 50 miles from Alexandria. Only SU1RD remains to hold the fort with 1SG. Both are anxious to contact anyone passing through or stationed in Alex., so don't forget chaps, a warm welcome awaits you if you care to give Frank Pettit a call at the Catholic Club, Mustapha Barracks, Sidi Gaber.

Eric Trebilcock, BERS195 is still in Salamaua and remarks on the excellence of the B.B.C. service in that area.

He was much impressed when he received a letter from BRS3425, who wrote "to relieve the loneliness of a ham in the out back!" "I think it's pretty wonderful when a Londoner of 1941 writes to *cheer up* someone living in a world, free from the horrors of war" comments Eric, "I just take my hat off to you fellows and marvel at your pluck and grit." He has also had a letter from VK2HZ from somewhere in Malaya to say that VK2XQ is with him there and that they have met an old-timer, in the person of YI7RK.

So far as DX is concerned KEZE is on Enderby Island (Phœnix group), K6PLZ is operating K6TSK at Kamenhameha High School in Honolulu and XU8PL, using 450 watts 'phone puts in a wonderful signal. KF6OWR is on Howland Island. "At this time of the year" says Eric "it rains practically all through the 24 hours in New Guinea and static is pretty bad but nevertheless here is a list of calls heard. On 28 Mc. 'phone K6FSF, 6MVV, 6OQM, 6PAH, 6PIR, 6TOL, W6QUC and W6RKI. On 14 Mc. 'phone the pick of the bunch are CE3CG, J2XA, 5CW, 8CI, KB6CBN, KF6OWR, KEZF, KF6JEG/KG6 and many XU's. On 14 Mc. C.W.: J3FD, W6POS/K6 and KA6FB are the best."

Finally comes a letter *via* G6CL from G6FU, recently in Iceland, in which he describes the wonderful scenic beauties of the island and how he caught salmon with string and a bent wire!

[G6FU has forwarded a long descriptive article dealing with life in TF and this is being circulated with the G8QH War-Time Log.—ED.]

An Eventful Journey

G3GU who is an observer cadet had a ringside view of the "Bismarck" affair when he travelled across the Atlantic on board H.M.S. "Rodney." He later called at Bermuda, St. Kitts, Nevis, Antigua, where he met VP2AB and 2AD, Montserrat, Dominica, St. Lucia, Barbados, St. Vincent, Grenada, and Trinidad. We wonder if he collects stamps? This journey must constitute the philatelists' dream!

His main difficulty at the moment seems to be trying to live down the fact of letting his trailing aerial run off its winder into the blue water below! It appears to be one of those things which are "not done!"

South Africa

The June issue of *Ham Chatter* just to hand from ZS6, tells a most encouraging story of war-time progress. Not the least satisfactory point being the liquidation of a £40 debt, an accumulated fund of nearly £50 besides a distribution of some £40 to various war charities. ZS6AJ writing from Harar tells of travel through mud at the speed of 1 M.P.H! "Low gear is no use" he complains "one has to climb out of the truck and carve a road through the flies with a pickaxe!"

Passed by Censor

G3PP writes from the Middle East where he has attended a meeting organised by SU1SG at which five R.A.F. members were present.

The final paragraph of his air mail letter card, reads as follows: "I can't end with the usual ham greetings, as it is viewed with suspicion by the powers-that-be, so for the moment, yours sincerely. . . ." This is thickly underlined in violet pencil in the Censor's own fair hand with the added comment "73 O.M.!"

[Who was the censor? we wonder!—ED.]

The 28 Mc. Band

DURING the period July 31 to August 24, there were eleven days on which short-skip commercial harmonics were reported above 35 Mc., and altogether over 40 different stations outside Great Britain were identified on frequencies above the amateur band. These included a number logged by BRS3893 on and above 40 Mc. viz., Rome broadcast on 45·9 Mc., ROF 45·4, OVV 44·1, IEU2 and CTF 42·7, IRP 42, EDM 41·7, DGD 40·8 and IRS 40 Mc.

Signals from other continents were as usual scarce, and amateurs practically non-existent. G5WP heard a few W's one evening towards the end of July, and the only other amateur reported was the indefatigable PY7VB, logged by the also indefatigable BRS3003. He was an S6 signal when calling CQ at 20.15 G.M.T. on August 24. LQB4/LSA2 on 27·5 Mc. was heard on every day except five, two of these being Sundays when his activity is always very slight. The only other South American reported above 25 Mc. was PPU on 30·2 Mc.

Conditions for North and Central America were poor, and the highest signals heard by G4MR from these zones were WBH, 22·5 Mc. on 15 days, and PJS 23·4 Mc. on four days. It will be interesting to see whether the W's make their usual re-appearance about the middle of September.

From Africa, BRS3893 heard ZEH 39 Mc. and ELT 32·4 Mc. during the afternoons of August 10, 16 and 21, and from Asia EPA on 33·2 Mc. was an S5 signal at the late hour of 23.30 G.M.T. on August 9.

Reports from G4MR, G5WP, 2FWA, BRS3003 and BRS3893 are acknowledged with many thanks

N. C.

The Ultra-High Frequencies

In order to preserve a record of summer-time reception above 35 Mc. the following list has been prepared, showing the upper limit logged on the day in question. June 11 (50 Mc.), 12, 13 (38), 15, 16, 17 (35), 19 (45), 23 (40, 25 (35), July 5, 26 (40), 28 (35), 31 (61), August 1 (40)approx.), 8 (40), 13 (35), 15 (45).

The writer will be pleased to hear from any member who can fill in the gaps.

On July 31 which was the best day, IRX 48 Mc. R6 (07.30 G.M.T.) and many others up to this limit were heard. From 17.15 to 19.30 a carrier, modulated with tone R6, was logged on 52 Mc. Later a broadcast harmonic 54 Mc. R7 (probably Italian) C.W. code 60 Mc. R5/0 and telephony 61 Mc. R5/0 were heard.

We offer our apologies to CS3VA whose address was given recently in these notes as the Azores, instead of Lisbon.

Thanks are due to G6DH, 6YL, 2AXP, 2DXS and BRS3766 for their letters, and also to many "Convention contacts" whose entire conversation revolved around their ideas for peace-time V.H.F. activities—keep it up, and good luck.

C. H.

INDEX TO DISPLAYED ADVERTISEMENTS

Book Reviews

THE CATHODE RAY OSCILLOSCOPE. By W. E. Miller, B.A.(Cantab.). Published by The Wireless & Electrical Trader, Dorset House, Stamford Street, London, S.E.1., 48 pp.; Price 2s. 6d. (Post free 2s. 8d.)

In this useful little publication (based on a series of articles which appeared originally in *The Wireless & Electrical Trader*) the following subjects are dealt with: The Theory of the C.R. tube, Tube Supplies, Voltage Measurements, Frequency Comparison, Time Bases, Amplifiers, Tracing of Hum, Distortion Tracing, Receiver Alignment, Alignment Operations, Band Width Checking and Miscellaneous Tests.

It is not intended to be a highly technical treatise, but it *does* explain in easy-to-follow language, the fundamental principles governing the operation, and practical applications of the C.R. tube. For this reason it should have a wide appeal among service personnel and others who are encountering c.r. tube technique for the first time.

The inclusion of a bibliography would add to the value of future editions, as would a short section devoted to an explanation of the many specialised terms used in cathode ray oscillography. An improved method of presenting the index is also recommended, as is the use of the officially recognised abbreviations for cycles per second and kilocycles per second.

The booklet is well illustrated and is of a handy pocket size. J. C.

* * *

MATHEMATICS FOR A.T.C. By E. H. Chapman, M.A., D.Sc., and E. E. Mount, B.Sc. Published by A. Wheaton & Co., Exeter; 80 pp. Price 1s. 9d. (post free 2s. 0d.) from R.S.G.B. Sales Dept., the Publishers, or Booksellers.

Mathematics is one of the four basic subjects in which an Air Cadet must pass before he can qualify for his Proficiency Certificate. This timely publication is intended to provide the background for preliminary, as well as advanced, instruction in maths. for the A.T.C. The fact that it succeeds, is due to the fact that the authors have had wide experience of teaching maths. to the R.A.F. Four printings have been made in less than four months, a tribute to the quality of material and method of presentation.

The latest edition has been revised and a new chapter on Areas and Volumes has been included. Further, the section devoted to the application of the Triangle of Velocities to simple problems in aerial navigation, has been re-written.

The fourteen chapters deal with Vulgar Fractions, Problems on Fractions, Decimal Fractions, Conversion, Units of Length, Averages, Ratio and Proportion, Percentages, Square Root, Problems involving the sides of a Right Angle Triangle, Areas and Volumes, Use of Symbols, Simple Graphs, Measurement of Angles, Triangle of Velocities.

Exercises are set and Answers given in consolidated form at the end of the book.

In addition to its importance as a text book for Air Cadets, it will have a wide appeal to radio amateurs who have occasion to improve their rusty knowledge of maths.

We congratulate the publishers upon producing such a useful book at a price well within the resources of all. J. C.

SPEECH SIGNALS IN TELEPHONY. By Professor A. Lloyd James. Published by Sir Isaac Pitman & Sons, Ltd. 49 pp. Price 3s. 6d.

Here is a book which should appeal to, and interest everyone who has occasion to use speech systems for communication. The information is based on the results of careful research carried out by the R.A.F. and the B.B.C., at the suggestion of Air Vice Marshal C. W. Nutting, Director of Signals. The six chapters deal with Signals and Communication, Language Signals in Light and Sound, The Nature of Speech Signals, The Effect of Electrical Transmission upon Speech Signals, The Making of Good Speech Signals, Training.

Bearing in mind the confusion which at present exists between phonetic alphabets as used by the R.A.F., the Army, the G.P.O., and radio amateurs, it would perhaps have been beneficial if some views had been expressed on this subject. For example, most amateurs and army operators have grown up to think of "Emma" as the phonetic equivalent of M, but latest R.A.F. practice specifies the use of the word "Monkey."

The author quotes many sentences which can cause confusion unless carefully spoken. The phrases "Come for tea" and "Comfort ye" provide good examples.

If we were not at war we should feel inclined to send a gratuitious copy of this book to all radio 'phone operators who assume accents "foreign" to their normal speaking voice!

We can find no reference in Professor Lloyd James' book to such gems of eloquence as "take it away" or "wheel it down the street"!

The author is to be complimented for presenting what might appear to be a dull subject in a very lively manner. J. C.

News from Egypt

Writing under date of July 2, Frank Pettitt, SU1SG, offers his congratualtions to the Society in keeping going during war-time. He reports that the Experimental Radio Society of Egypt is in a state of suspended activity but all members who were in good standing, financially, at the beginning of the war, are being retained on a non-paying basis. All amateur apparatus in Egypt, with the exception of receivers, has been taken over by the Postal Authorities, and quite a lot of it is being used for service purposes. His old 45-ft. mast, unadorned even by the skywire, stands as a monument to remind him of the many friends he made through the medium of amateur radio. Frank reports that Bill Marsh, SU1WM, has moved to Tanta about 50 miles from Alexandria, so at present the only other ham in Alexandria is R. E. A. Disteche, SU1RD. Both SU1SG and SU1RD are anxious to contact all amateurs passing through their city. (Telephone: Alexandria 27315 or Ramleh 498).

Frank wishes to be remembered to all old friends in Swansea, and also to F./Lt. Wilkinson, G4HW (recently awarded the D.F.M.), to whom he sends heartest congratulations.

Congratulations

To Rex Heatley, G5OH, on his appointment to the position of Commercial Manager to *Stratton & Co., Ltd.*, Birmingham, in succession to Mr. A. C. Edwards, G6XJ, who is now serving with the Fleet Air Arm. Mr. Heatley has recently joined the ranks of the Benedicts.

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.

DISTRICT 3 (West Midlands). (*Shropshire, Staffordshire, Warwick, Worcester.*) MR. V. M. DESMOND (G5VM), 90 Worcester Street, Birmingham.

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.

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

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

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.

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

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. N. E. READ (G6US), 24 Church Street, Oswestry, Salop.

DISTRICT 12 (London North and Herts.). (*North London Postal Districts and Herts., together with the area known as North Middlesex.*) *Deputy:* MR. P. SOLDER (G5FA), 35 Torrington Gardens, New Southgate, N.11.

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.

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.

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

DISTRICT 17 (Mid-East). (*Lincolnshire and Rutland.*) MR. W. GRIEVE (G5GS), "Summerford," New Waltham, 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.

NORTHERN IRELAND. MR. J. N. SMITH (G15QX), 19 Hawthornden Drive, Belfast.

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. had the pleasure of meeting a few District 11 members at Prestatyn on Sunday, August 24, but was unable to stay for the meeting at 6 p.m. It is understood however that in future the meetings will commence at 2.30 p.m. which will enable visitors from No. 1 District to make the return journey in daylight. The date and place of the meetings will be found in District 11 notes and it is hoped that some of our members will be able to visit Prestatyn on September 21.

Blackburn.—The T.R. regrets the absence of notes recently but he cannot make bricks without straw. If any member is short of writing materials will he please call upon G4KT any Sunday morning!

Thanks are accorded to G2HW, 4FD and 2FUC for their reports and visits. 2AKK who will shortly be home for seven days can now do 30 w.p.m. A welcome letter has been received from 4CJ who is still playing around with Field Day gear "Somewhere in England." No word has been received from 2PB, 3TU, 3LR or 6BH.

The names of two or three Blackburn men who are in the forces have appeared in the lists of new members and the T.R. will be glad if they will write to him or call. A new member, Mr. J. Burns, has joined the group. (*Via* G4KT.)

Bolton.—Congratulations and best wishes from all the members back home to Telegraphist N. D. Whitehead, R.N., G4HL, and his bride. May their married life be a long and happy one.

G8UF, who has recently been putting in some strenuous work helping to clear up the mess in the northern "blitz" areas, was seen in the local Y.M.C.A. on Bank Holiday, meditating on past QSO's and sighing for the day when the gear comes home again.

Owing to a recent influx of Service hams and enthusiasts the monthly ragchews have been somewhat expanded. Thanks are due to the Y.M.C.A. for permitting the exhibition of a notice drawing

attention to the fact that Bolton members welcome visitors to their meetings, and also to 2DVQ's sister for designing and executing the poster.

2HAX has now been posted to another district so was unable to attend the last meeting. Those present on August 10 included: 3KJ, 2BDA, ABF and DVQ, also Messrs. Baker, Partridge and Russell (formerly BRS157), 3KJ, the last three being in R.A.F. blue.

After an interval of about eight months word has been received from G6PO, formerly resident in Bolton. He was bombed out in Coventry and is now located in Bradford. He informs 2ABT that he is engaged on the construction of super transmitters, but they are unfortunately very hush-hush so we shall have to wait until after the war for any tips on construction from that source. With an eye to the future he has built himself a new superhet and is now engaged upon the construction of a v.h.f. super.

A letter dated April 22 has recently been received from 2FPI, in which he says that he was then on sick leave in ST. He writes of a visit which he and 3HG paid to I7AY in Libya, but regrets to report that the OM was unavoidably absent when they called. (*Via* 2DVQ.)

No further reports have been received—what about it, T.R.'s? G6CX.

Forthcoming Events

Sept. 21	District 12, 3 p.m., at G6CL, 16 Ashridge Gardens, London, N.13.
,, 28	Scotland "A" District, 2.45 p.m. at the Y.M.C.A. Residential Club, 100 Bothwell Street, Glasgow. A cordial welcome is extended to all visitors.
,, 28	District 15, 3 p.m., at G4IH, 31 Courthope Gardens, Greenford, Middlesex. Nearest point, Western Avenue roundabout. 'Buses 105 or 18c.

DISTRICT 2 (North Eastern)

Very few notes are to hand this month; G2LT says Sheffield seems to have gone to sleep again! What about it chaps? From Barnsley comes the news of the arrival of a son to Mr. and Mrs. Ward, G4JJ.

BRS4307 whose address is 551 Jovil, Linthwaite, near Huddersfield, would like to get into touch with other members in his locality.

G8UO who reports active says G3FX is now a P./O. in the R.A.F. somewhere in Scotland.

Members will be sorry to hear that BRS4175, of Bradford, who suffers from heart trouble has had to go to hospital and that he may have to spend several years, taking it easy. We offer him our sincere good wishes. G2MI.

DISTRICT 3 (West Midlands)

Birmingham.—A meeting of M.A.R.S. was held on Tuesday, August 12, when Mr. Bernard George gave another excellent lecture, this time dealing with power transformer design. Mr. George has proved himself to be one of our new discoveries—not new to the club but new on the lecture side.

Sixteen members were present. 2FDR.

DISTRICT 4 (East Midlands)

Nottingham.—The T.R. regrets a lack of notes this month and trusts members will try to rectify the matter in October. BRS3818 having just moved into the area now has the advantage for the first time of A.C. mains, he was previously restricted to the use of dry batteries.

The next meeting will be held on Sunday, September 21, at G8DZ, 14 Epperstone Road, Nottingham, at 3 p.m. Note change in time!

Mansfield.—BRS3593 is busy with A.T.C. training and in his spare time is juggling with quality amplifiers. He would like to hear from a few more members regarding their activities.

G8MR is now at No. 1 S.S. and has already contacted 4MR, 8SB, 3PL, 3YA, VE3AQO and VE3AQY.

Leicester.—Congratulations to Mr. and Mrs. VS2AR and to BRS2793. The arrival on July 21 of a son and junior op. at VS2AR means that BRS2793 is a proud Grandpa!

G4DR is now at home again and hopes to remain so until October, he reports having made many ham friends while working with the B.B.C. 4BI reports fit and happy *via* BRS2793, and sends 73 to all. 6IM was home on leave recently from No. 1 S.S., 6VD regrets having been absent when he called. Our D.R. G2RI, also at No. 1 S.S., has been entertaining G6CL, 5SY, GM6XI, G2JD and other members, including numerous VE's, who have been at the School.

On a recent visit to 5UQ, 8CZ and 6VD spent a good deal of time envying UQ his new receiver, an R.M.E.99. 8QG also called during the visit, and a very pleasant ragchew, made that Sunday morning seem like old times. G6VD.

DISTRICT 7 (Southern)

Bournemouth.—2HAG celebrated his Matric. by joining the R.A.F. (All the best O.M.!) Congratulations also to 2ACA on being appointed to a B.B.C. post. 3789 reports experimenting with receiving aerials. That's all this month—please remember the T.R. cannot continue these notes without *your* contribution so please let him hear from you by the 20th of the month.

(*Via* 2HNO.)

The North-Eastern P.D.M. held at Leeds in July

Coulsdon and Purley.—In a recent letter 2ANR, who is in Malta, states that he has met quite a number of G's on the island. He sends 73 to all members of the Surrey Radio Contact Club. Congratulations to 2CRD who has now been made a Corporal. In a recent visit to the Midlands he had the good fortune of meeting F./O. Bert Simpson, 8DI, and F./Sgt. Browning, 8TX. 2FJM has recently arrived in SU. 3003, with the able assistance of 2FWA, has erected a 28 Mc. di-pole over the roof and connected it to a Collins coupler.

(*Via* BRS3003.)

Bournemouth carries on.
From left to right : 2HMX, G4MY, 2HNO, G6II, 8BR, 2NS., Messrs. Budden and Mercer and G2XP.

Croydon.—There was a well attended meeting at G2DP on Sunday, August 17, when G2DP, 2KU, 3FP, 3ST, 4NI, 8TN, 2FWA, 2HHD, BRS1545, 3003, 4150, and 4324 were present. In order not to clash with District 13, dates for future meetings were arranged as follows: Sunday, September 14, at BRS4150, 42 Oakfield Road, West Croydon. Sunday, October 12, at 2FWA, 72 Kimberley Road, Croydon ('phone : Tho. 4552). Commence 3 p.m.

G4AA was on leave during August, but, as he had to return on the 17th he missed the meeting. 3VN who is in a lonely part of Iceland, would be extremely grateful if anyone would write c/o his home QRA, 6 Dagnall Park, S.E.25. 4NI is now working with 2DP. 6QB is now a P./O. 4150 has built the first stage of his super, and is studying I.F. transformers. 2FWA, having made up a Collins Coupler, finds that tuning the aerial is almost the same as adding an R.F. stage. (Really—Mr. Janes.—ED.) We are pleased to welcome 2FXT and BRS4314 as new members.

(*Via* 2FWA.)

Kingston.—In response to a request for a volunteer for the job of T.R. for Kingston and District 5NG has come forward. He will be pleased to receive any material from the North-West corner of Surrey. (QRA, W. F. Holford, Meadowholme, Thorpe Lea, Staines, Middlesex.) 311 writing from 6 Buckingham Road, Kingston, very kindly offers to hold meetings at his QRA and suggests Sunday afternoons as a suitable time. Will local members get into touch with him, whereupon perhaps there will be a welcome revival of Society activities in this area.

Oxford.—The August meeting was held at 2CVD when 2CL, 8PX, 2ALG, 2BHS, 2CVD, and 2603 were present. GM8CN who has moved to a station in Suffolk sends 73 and apologises for his hurried departure. Welcome to 2603 who recently gave a very interesting description of his home-built 12-valve super. The next meeting will be held on September 21 at 2ALG, 31 Ridgefield Road, Oxford.

(*Via* 8PX.)

South-West Surrey.—The distressing news last month of the death of G8CV in Libya has been followed this month by the announcement of the death of Jim Emmerson, G8HA and GM8HA. We have thus lost two of the keenest and most likeable members in our area and we are left with a deep sense of loss. 6BP writing from East Anglia was on the same station as 8HA and tells of the distress felt there after the accident.

Congratulations to 8IX who has been promoted to Corporal. He has now a kindred spirit on the station as 5ZN has been posted to the same watch. 6GS was home on leave for a few hours recently. 5CM and 5RS are busy with their receivers and would like to have a meeting at Guildford. Anyone else interested ? The D.R. was very pleased to meet so many District 7 members at the Convention.

G5WP.

DISTRICT 8 (Home Counties)

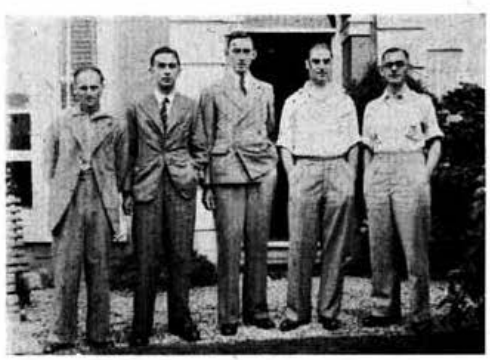
This month we are indebted to BRS3376 and 3685, for reports, and to G5RL, and BRS3585, who have now become regular contributors.

Peterborough.—In a cheery letter, BRS3685, mentions that he has built a mains 0-V-2. While listening to a W4, some time ago, he was suddenly disturbed by a D4, which unloaded about 200 yards away. He would like to obtain a list of S.W. broadcast stations—can anyone advise him ? (QRA, 66 Victoria Road, Wisbech.)

Cambridge.—G2PL who was recently in the town, mentioned that the junior-op., now a year old, is already getting the radio bug. 2DT passed us in his P.O. van, recently, but was too intent on the job in hand to notice anyone !

St. Ives.—G5RL, writing from No. 1 S.S., mentions that he is on the W./O.M. course. 4AZ and 5OV reports fit. 8NS is still stationed in the area. 3PZ (Northampton) a recent newcomer, would like to meet the locals.

Bedfordshire.—BRS3585, still struggling with his 60ft. pole, would appreciate a postal course from the Wizard Pole Erector. What about it, Gerry ? 2FFG was recently home on 7 days leave. 2CFV is leaving for District 9 in September. 2DPQ had a



G2DP, 2BMZ, BRS3171, G6LL and 5SY get together at Torquay.

lucky escape, when involved in a collision with a motor cycle. 2DPQ would like to hear from 3JU, from whom a letter is long overdue. Congratulations to 2CRD on his marriage, BRS3585 asks for his new QRA. 2AYY is still in the area but has not been contacted recently.

BRS3376 (Radio Maintenance Section of the R.A.O.C.), writes from the South of England, to say that he has met VE4DV, 4ABB, G3ID, and 5YZ. During a recent leave he built a very successful audio amplifier, using a KTZ 73 M R/C coupled to an H63, transformer coupled to two 6L6's—with two WB Senior speakers at the end.

Well, we are rounding up the lost ones, a few at a time. Who are they to be next month ?

G5BQ.

DISTRICT 10 (South Wales and Monmouthshire)

G5FN has received welcome visits from G3VY and BRS1745. Between spells of duty he has been carrying out experiments with V.H.F. receivers. G8GN who reports fit again is on civilian duties for the R.A.F. G8NQ has been granted a commission in the H.G. but carries on in the radio trade.

Cardiff members are still active in various ways, but no meetings have been held. The scribe would like to see monthly gatherings revived. How about it locals ?

G5FN.

DISTRICT 11 (North Wales)

Prestatyn.—The August meeting held at "Vale View," Prestatyn, resulted in an attendance of 15, which included VE3AAA, VE4YG, VE5EK and L.A.C. Howard (R.C.A.F.), G4AH, BRS3044 and Sig. Conway (Royal Signals), G6HQ (R. Navy), GW4CX, 2HCZ, BRS2731, 2866, 4027, 1060 and Mr. Gill, local members. Many interesting items were discussed while later some enthusiasts indulged in a spot of morse practice.

Owing to the shorter evenings, rendering travelling difficult, future monthly meetings will be held on Sunday afternoons. The next is fixed to take place at "Vale View," Meliden Road, Prestatyn, on September 21, starting at 2.30 p.m. It is hoped that with this new arrangement, many more will be able to attend. G6CX visited BRS1060 just prior to the August meeting, but was unable to stay (see District 1 Notes.—ED.).

VE3QI was recently contacted by BRS1060 who spotted his call on his respirator. Local members are at present taking regular code practice, with BRS3044 as instructor. 2HCZ reports attending the recent Leeds meeting whilst on holiday in Yorkshire. GW3CF and 5FU have been home on leave. The latter has just completed building another bug key.

Here's to a record crowd at our September meeting. Despite rationing, refreshments will be provided for all (no coupons needed !)

BRS1060.

A GROUP OF VE's AT PRESTATYN.
Left to right : F./O. J. Wilson, VE3AKY, L.A.C. Booth, VE3AAA, L.A.C. H. Booth, L.A.C. Cringan, VE4YG, L.A.C. Critchley, F./O. C. Perry, VE3AKX.

DISTRICT 12 (London North and Hertford)

We are sure that all members who know him will join us in welcoming back our D.R., G5QF, after his long illness and will share our pleasure in the news that he has passed the doctor as fit to recommence business. He will be pleased to receive letters at 41 Brunswick Park Road, New Southgate, N.11.

No local meetings were held last month, but we were glad to see a good District representation at the war-time Convention. We finished up with a "North London table" at Pinoli's in the evening.

Letters have been received from 2CNC, 2DTD, BRS3825, 3412, 4234, 4116, and 4073. We welcome G4NV, BRS4321 and 4327 as new members.

G6CL in connection with his A.T.C. duties recently spent a very interesting week at an R.A.F. Signals School and met a large number of members. We are pleased to hear *via* 8TY that 6WU is safe and fit in Palestine after the Crete evacuation. 3LT and 3GX who were on leave recently send 73 to their old friends in the District. Congratulations to 2DTD (Hitchin), on the arrival of a junior op. ; he reports "heavy QRM and too much excitement for radio during the past few weeks!" BRS4234 (Letchworth), is serving as an R.A.F. Wireless Mechanic in Scotland and until recently was with 8DR, who incidentally has now returned South ; BRS4116 has volunteered for the R.A.F. as a Radio Mechanic and is waiting to be drafted to a training centre. 6QM has received a letter from 8VM (still brass pounding in the Merchant Navy) in which he states that he was unable to contact any hams in Cape Town, his last port of call, but he *was* able to obtain plenty of cigarettes !

2CNC who is building a TRF receiver expects to be able to send contributions to "The Month Off the Air" as he used to do before he was forced to leave Jersey. BRS3412 writing from Ventnor is now making good progress after a set back earlier in the year. He hopes to return home before long. We wish him a speedy recovery. Incidentally he is converting his recording equipment to receive real live broadcasts, with the help of a former ham who recognised his R.S.G.B. badge. BRS3825 in between R.A.F. duties has been experimenting with aerials on his "Ham Band Two" and reports a big improvement by feeding it with co-axial cable. He would like to contact 2FPC of Edmonton should he see this note.

The next meeting will be held at war-time H.Q.'s —G6CL ('phone : Pal. 3255), at 3 p.m., Sunday, September 21. Service members on leave in London as well as our many new District members will be warmly welcomed.

G5FA.

DISTRICT 13 (London South)

South Western Area.—This month your Scribe certainly has the straw—Log No. 1 having turned up—so here are the bricks !

G3CU who reports from Watford is amusing himself with a new audio amplifier. He talks about "lights out" at 10.15 just when good hams used to wake up! 6QN is also building an amplifier and would like a list of "good" records—presumably numbers that will show what his amplifier can do by way of response (8QH will forward). 5PY flies a sticker on his windscreen but hasn't met a single ham in his corner of Devon (District 6, please note!) He reports frequency drift on B.B.C. transmissions there. It is not his receiver as C.W. signals don't suffer. Explanation wanted!

G2UX tells a long tale of travels which include Dunkirk, but now signs himself "yours rusticatingly." 4OO (oh! oh!) is in Gib, and the log is signed by his O.M. who says Dennis would be glad to hear from any members. (What about a good deed, chaps? Let's surprise him with a dozen letters!) Address from G8QH. 2DJK makes a nice gesture by opening his private radio library to local hams—"no fees or fines." BRS4180 provides a smiling photograph of himself in flying suit. (Happy landings, brother!) 4206 reports from Yorkshire and says he was "on a course with 3JO- radio's greatest lover." (What does this mean, JO?)

A second log has been started, which will follow the first round at a fortnight's interval so that all can get a look in more frequently. In this second edition: G8IL—always good for a bit of shrewd technical dope—puts up an idea for a "sort of ECO-cum-Franklin oscillator" (How about an article? Editor.) He has made a mike stand. There's optimism for you! 3AD turns in another long entry in that beautiful caligraphy of his, and gives some detailed dope on the new S27 V.H.F. FM/AM receiver.

G8QH is very grateful to all for supporting the log so well. Watch the date, and send the books back on the 18th! G8QH.

South Central and South East Areas.—The August meeting held at G2VB was very successful being attended by 14 members. We were pleased to welcome a new member in BRS4286. BRS4324 who is busy constructing a 5 meter receiver, and a superhet, has made a fine rack from old bedsteads! His other interests are portable gear and vibrators, he would welcome a visit from any member with similar interests ('phone: Tulse Hill 1789). G2VB and 3ST are reconstructing receivers.

Hearty congratulations to 2FQQ on his promotion to Sub-Lieutenant, R.N.V.R., also to G2JK on obtaining his B.Sc. degree.

The next meeting will be held at G3ST, 62 Dumbarton Road, Brixton Hill, S.W.2, at 11 a.m. Sunday, September 28. G8TN.

DISTRICT 14 (Eastern)

Chelmsford.—G6LB has spent a pleasant holiday, together with XYL, chez 6LL. 5SY was also present to yarn of the "good old days on the air." 2SA keeps busy and listens when business and H.G. duties permit! 5HF spends his time thinking up new gadgets and bright ideas! 5RV has made a novel auto-remote control for the BCL set incorporating a time switch which puts the receiver on at any predetermined time in the morning. He says its nicer than being jerked into wakefulness by an alarum clock . . . psychologists please note! 8PB, 5CA, 4GF, BRS3650 and 4122 are "going to it!" 6LB will be in the chair at the September meeting as 5RV will be in hospital getting rid of a pair of very troublesome tonsils! (Quick recovery Louis.—ED.)

The Chelmsford P.D.M. held on July 27, 1941.

Southend.—G2SO is now living in 6IF's old QRA—"The Chalet," Woodside, Leigh-on-Sea. 5XI has again moved, QRA unknown. BRS4023 (2SO's brother) is now in SU with some of the gang! No news from other areas. . . . Asleep or holidays? G5RV.

DISTRICT 15 (London West, Middlesex and Buckinghamshire)

In reply to our request last month for a venue for the September meeting, G4IH, has again offered his QRA for a Sunday afternoon. (See Forthcoming Events.) We still solicit members as to their wishes concerning future meetings.

During the month a number of letters have reached G3UQ, 6RW and 6WN from members with the forces. G3XJ has apparently gone overseas. 8WR somewhere in the South of England has been promoted to Corporal in the R.A.F. 6ZY is with the R.C.S. at Gib. and is pleased to see the way the Society and District keep the flag flying for them all.

He thanks the District for cigarettes and we in turn congratulate him upon obtaining a commission. He tells of meeting G8IH when his ship calls there. 4HF has gone to the Middle East to entertain the troops. It fell to his lot to arrange the voluntary concerts while on board. 2FUX has joined the R.A.F. as Radio Mechanic and was at the time of writing on the east coast. G3HT visited G6WN while on leave but the D.R. was unfortunately out. He is serving as Pilot Officer in the North of Scotland and only six miles from Phil Thorogood of the Edgware Society. They send 73 to those at home.

The D.R. had a personal contact with 2QY who came up for Convention and also a 'phone contact with 2KI whilst on leave recently ; the latter is now a Corporal in the R.C.S. and enjoying his work very much. He is touring the countryside around Lincolnshire and is staying at the Vicarage. 4PA is at an air field up north but is not in the R.A.F. 5KT of Bristol is still in the area and together with 8FH they spend one evening a week with 4KG. They have also visited 6XP. 5KT asks us to thank the district for their hospitality and the cigarettes. He mentions that 2HIW is stationed with him. BRS3867 (son of G6PR) who is an A.C.1 in the R.A.F. recently awoke to find an incendiary stuck in the bed ! A bit hot we should think. 2FCJ sends 73 to the district and in particular to G6XP. BRS4112 writes from Bletchley to say that he is planning a new super super-het. He has met 2AOU locally and wants to know if members there are willing to assist in getting some meetings going. (Just what we want to see O.M.—D.R.) NOW GO TO IT all those within reach. Write C. J. Stanford, Stoke Road, Bletchley, Bucks.

Well that's a better report than of late but its only because we have heard from those who have had letters. Why can't we see the same thing every month ? G6WN.

DISTRICT 16 (South Eastern)

Brighton again provides the only report of the month, the acting T.R., Mr. Clacy, G6CY, sending news of radio, and G2KU items of social activities.

G2KU has been ice skating with VE1FN, VE3AJU and GM3QH, while other visitors have included GW2UL, G5NO, 5ZX, 8JF, 8NC and 2FON. An informal meeting was held at a café on the front on July 23.

Brighton and Hove.—Local members are sorry to have lost the cheery presence of G3WR who has volunteered for flying duties in the R.A.F. We wish him every success in his new sphere of activity. G3YY (Brighton), G5JZ, BRS1173 (Heathfield), G8CP (Newhaven), and G2AO (Eastbourne) are busy with their receivers. A hearty welcome is extended to G2JL who is now at Chichester. Visitors to C6CY have included G8AC (home on leave from the R.A.F.), G6XF (Hastings), G4NY (Worthing), G2RU (Portslade), BRS4218 (Newhaven), and last but by no means least, our worthy President, G6NF.

Members living in the Brighton and Hove area are invited to report to or call upon G6CY at 8 Hangleton Road, Hove. G2WS.

DISTRICT 17 (Mid East)

The chief event of the past month was of course the Conventionette held at Lincoln on August 24, a full account of which appears elsewhere in this issue. In spite of travelling difficulties an attendance of 63 was recorded.

We, in District 17, would like to say how pleased we were to meet so many old friends from other parts of the British Isles, whilst the presence of representatives from Canada and New Zealand contributed in no small measure to the all-round success of the meeting.

No local news has been received but a warm welcome is extended to BRS4515, a new member living in Sleaford.

Items of interest for inclusion in future issues should reach G2UK, Stonehaven, Horncastle Road, Boston, by the 25th of each month. G2UK.

Northern Ireland

John Graham, GM3TR, has been in hospital with a serious illness but is now making good progress towards recovery. His many friends wish him a speedy return to full health and hope to see him out and about very soon.

2FQQ writes to say that he has left the sea for good and is now awaiting official notice of appointment as a temporary Sub-Lieutenant in the special branch of the R.N.V.R. We wish him success in his new port, and send congratulations on the promotion. Good luck, John !

GI33VQ who has been home on leave reports that the U.S.A. hams he met on their own ground gave him a really wonderful time during his lengthy stay in that country. The outstanding treat was a hamfest given by the Framingham Radio Club ; Ken says the menu was a thing to remember for a long time to come.

Congrats to GI3KV on the arrival of a junior op. GI2BB, 3KV, 3TR, 6HI, 5HN, 6TK, 6YM and 2CIL are assisting in A.T.C. instruction. BRS2744 is experimenting with the printing of QSL cards by the photographic method. A hearty welcome was accorded to EI9F when he visited the Y.M.C.A. radio club during a short holiday in GI.

GI5QX.

Scotland

"A" District.—Members will be shocked to hear that F./O. Jim Emmerson, GM8HA, has lost his life in an air crash. GM8HA while only a member of "A" District for a short time had made many friends and his talks at our war-time meetings were much appreciated.

Letters have been received from GM6IW, who is in the Middle East. and GM8HJ, who has now reached the rank of F./Lt. Both wish to be remembered to their many friends. Congratulations to GM3UA on his recent marriage.

Owing to the date of the monthly meeting coinciding with that arranged for local big scale defence exercises the attendance at the August meeting was very poor. A welcome visitor was G3SL.

GM6ZV.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for opinions expressed by correspondents

Pre-War High Power Permits

DEAR SIR,—May I trespass on your valuable space to reply to that portion of the letter from my good friend and neighbour, G5RV, which deals with the ever-vexed question of *high power* ?

I cannot help feeling that the writer has misconstrued popular opinion when he speaks of the "British amateur's ostrich-like attitude towards high power" and cites the case of a 10-watt G wiped out in W2 by a W9 kilowatt, but who would probably have got through if *he had been using* 100 *watts*. Precisely, and there lies the whole crux of the matter.

Doubtless that G would like to have used such an input, and the only reason he did not was because (*a*) he was not allowed to, or (*b*) he was one of the *very few* G stations not exceeding his permitted power.

During eighteen years of amateur radio, I cannot recall anything more unsatisfactory, or the cause of more feeling among the ham fraternity than the ability of one amateur to obtain a high power licence, while another, possibly not so well versed in "the gift of the gab," was restricted to 10 or 25 watts.

For this wretched state of affairs one cannot blame the amateur, whose rule is, of sheer competitive necessity, "every man for *himself*," and if the term "ostrich-like" applies at all, one must look much nearer the top of the tree than valiant Johnny Jones, struggling against overwhelming odds to get his peanut whistle through the QRM.

The 10-watt rule was all very well in 1921, when 200 metres was an ultra-high frequency, but its application in 1939, with over 50,000 amateurs on the air, most of them using several hundred watts, and with International DX as commonplace as flies in summertime, was, in my opinion, farcical, and one does not have to look very far to see the results.

A perfectly sound amateur gets his application for high power turned down, sees his more favoured brothers gathering vast quantities of "wall-paper," and leaving him behind in the DXCC ranking, takes the law into his own hands, and deliberately abuses the terms of his licence in self-defence.

It must surely be realised by now that, with the possible exception of about a dozen cases, the sole object of obtaining a high power licence was to work more and better DX, and to gain this end, the majority of applications for the coveted permit were sheer fabrications from start to finish.

I doubt whether five per cent. of the holders of such permits can truthfully say that they ever conducted the Special Tests described so glibly in their applications.

Let no one think I am against QRO, for I have held a 50-watt licence myself, and enjoy my DX with the best of them, but the sole object of my remarks is to expose the absurdity of the position in 1939, and while I could spill a considerable number of beans on the subject of wangling, silence is golden, and I hope that if my comments ever reach print, they will not fall entirely on stony ground.

We want no "10 plus 90 watt" G stations when the war is over, and if the favoured few can have 100-watt "tickets," let everyone have one, always provided the authorities have satisfied themselves, *by proper examination* that the applicant is capable of handling it.

I venture to suggest that if this happy state of affairs ever comes about, some of our present QRO men will get a nasty shock, to say nothing of the Post Office Engineering Department.

Yours faithfully,
SAUCE FOR THE GANDER.

Morse Speed and Power Limitations

DEAR SIR,—I have read with interest the views expressed by G5RV and G2QY in the May and June issues of the BULLETIN, and would like to say that I am in full agreement with both writers except in regard to morse and power requirements. I cannot see where increased operating speed and greater power will make anyone a better *experimenter*.

Writing with 28 years of operating experience behind me (Service and Amateur), I would sooner work a station with a good clear signal (loud or otherwise) at from 12 to 16 w.p.m. than listen to some of the "speed merchants," who frequently jettison good spacing for speed. I agree that a nice individual speed is essential, but it is not everything.

In regard to power, I have always found 10 watts sufficient for my own needs; in fact, if my licence had allowed me to use 100 watts or more, at the same fee, I do not think I should have changed over. What greater thrill can a true amateur experience than to make his own apparatus and then sit down to work country after country, with a maximum of 10 watts input to the last valve ?

No, G2QY and G5RV, let us stick to low power and our pre-war morse speed requirements. After all, if one can work "both ways" at 12 to 16 w.p.m. that is all that is required to prove the success of a particular experiment.

I am afraid that many excellent men would be lost to the amateur cause if the morse test was made more difficult. Let us leave high power to the commercials.

Yours faithfully,
G. SYKES, G2JC.

Communication Over Wide Distances by Mechanical Means

DEAR SIR,—After reading the letter by 2HNO in your July issue on the subject of Audio and Radio frequencies, I cannot help feeling that the writer has failed to pay sufficient attention to the *kind* of waves which were being considered.

It is true that the human ear is capable of interpreting sound waves upwards of 10,000 c.p.s, although very few can hear up to 20,000 c.p.s. Incidentally, the squeak of a bat, which is in the region of 13,000 c.p.s, is inaudible to large numbers of people, including myself, but it must not be forgotten that the ear will only interpret the mechanical compressions and rarefactions caused by a vibrating body.

As these mechanical "waves" increase in frequency they must inevitably decrease in amplitude until a point is reached where the amplitude is so small that even the most sensitive ear-drum will not respond.

Sound (or audio) waves, being mechanical, must have a material medium of transmission, and it is impossible to transmit sound through a vacuum, which fact brings us to the whole point under discussion. A radio wave is electro-magnetic, causes no mechanical disturbance in any medium and needs no mechanical "medium"—in fact its medium is purely "etherial."

It follows, therefore, that if an electro-magnetic wave causes no mechanical disturbance in the air the human ear cannot interpret it, whatever its frequency. After all, a mains transformer is surrounded by an electro-magnetic disturbance at a frequency (in general) of 50 c.p.s, which is well within the range of the human ear, but no sound is heard unless the transformer is lightly built or has loose laminations. This effect is of course due to the parts vibrating as the result of the alternating stresses set up in the windings, which in turn sets up mechanical waves.

I trust that I have been able in a small way to satisfy the curiosity to which HNO confesses, and while perhaps not laying claim to be the expert to whom he appeals, I manage to keep the wolf from the door by turning my small knowledge of sound into cash.

Yours faithfully,
F. A. BOYES, 2HDV.

DEAR SIR,—The chief difficulty when considering this subject arises from the fact that radio and sound transmissions are usually confused. Sound consists of alternating pressures and rarefactions of the air (or other medium) which closely resemble pulses or bodily *movements* of the *air*. These pulses cause the receiver to vibrate *mechanically*.

The speed of a sound wave in air is about 1,100 ft. per second in contrast to the 186,000 miles per second of radio waves. Both speeds remain constant and are independent of frequency. Radio waves are of a different nature. Here—by the electron theory—the *electrons* are vibrating back and forth; in an aerial these oscillations set up an electro-magnetic field which travels outward from the aerial. These electro-magnetic strains set up, or induce into an aerial or receiver, oscillations of *electrons* (this is not a mechanical vibration, and cannot be heard) which constitute an electric current. Thus, literally speaking, they set up oscillations of electric current in the ear. Now arises the interesting point as to whether the ear is as sensitive to electrical vibrations as it is to mechanical vibrations. Do alternating currents in the *ear* produce sound? As far as my enquiries have gone they do not, and so R.F. will remain inaudible at any frequency. Perhaps, however, they do produce sound? It would be very interesting to hear from anyone who may have experimented along these lines. What about our professional members?

Another source of confusion is the relationship between R.F. and A.F. Here the misleading term is A.F. It must be remembered that A.F. refers to any combination of frequencies between approximately 18 and 20,000 cycles per second. (These are the usual figures and the vibration may be of a single frequency.) It is only audible, however, when in the form of a *sound* wave. When it is an equivalent vibration in an electrical form it is inaudible if the above holds good.

Thus, in theory, no matter whether a radio transmission is at an A.F., L.F., or H.F., it will remain inaudible to the human ear, but as queer things have been known to occur with changes of frequency, I should be interested to hear whether any member has had experience with, or experimented on, this very interesting subject.

Yours faithfully,
P. ZEID, 2HAG.

DEAR SIR,—In his letter on the subject of supersonic frequencies, 2HNO falls into a bit of a trap in imagining that a person approaching a transmitter radiating at a frequency which was (to him) not supersonic, would bear a note.

Hearing—whether in humans or animals—is surely a matter of *air* vibrations impacting upon a diaphragm in the ear. But radio-waves, whatever their frequency, are a matter of *ether* vibrations and would require some form of transmutation into air-vibrations before they could be heard.

Let 2HNO feed even a 400 cycle note into his receiver, disconnect the speaker, and then try to hear the note! (We must rule out, of course, such "unofficial detectors" as a vibrating lamination in an output transformer.)

It is true that when the audio test oscillator at 8QH is working, it can be *heard*, even without phones. And there are no audio transformers in this unit. But I have always put this down to the agency of some other "unofficial detector" such as valve elements in physical vibration.

The whole subject is interesting, but its main drawback from an amateur point of view is surely the *aerial*! I was about to put up a three-element beam when the war began. If we are going to transmit on audio frequencies—using half-wave elements of, say, 450,000 ft. long—I shall have to abandon the whole idea!!

Yours very truly,
E. HAYTER SIMMONDS, G8QH.

DEAR SIR,—Mr. L. J. J. Morgan (2HNO) seems to have confused sound waves with radio waves in his letter to the July BULLETIN, arising out of the DX efforts of the Tibetans. Mr. Nepean correctly distinguishes between sound waves, which are longitudinal vibrations in air, and radio waves, which are transverse vibrations in that mysterious medium, the ether. As transmission of each type of wave takes place in one medium, and one medium only, it is thus impossible to hear a transmission on a carrier frequency of, say, 10 kc/s simply by standing within range of the transmitter. This applies whether the carrier is modulated or not.

It would be amusing to surmise the things that would happen if sound waves were propagated through the ether instead of through air; just imagine doing away with the mike, and calling test instead into the microphone transformer!

Yours faithfully,
R. D. MCMILLAN, 2CWY.,
B.Sc.(Eng.) (Hons.)

[*Editorial Note.*—It is regretted that pressure on our limited space does not permit us to publish further letters on the above subject. All members who contributed to the correspondence are thanked for their interest.]

Trig. Mnemonics

DEAR SIR,—Those who use trigonometry only occasionally often find difficulty in remembering the formulæ. Here is a little "tag" which will assist in bringing to mind the ratios for sin, cos and tan.

Remember the sentence, "Peter has bought himself a pint of beer." Write down sin, cos and tan one below the other, and the initial letters of the words in the above sentence, omitting "a" and "of."

$$\sin = \frac{\textbf{P}\text{eter}}{\textbf{H}\text{as}} = \frac{\text{perpendicular}}{\text{hypotenuse}}$$

$$\cos = \frac{\textbf{B}\text{ought}}{\textbf{H}\text{imself}} = \frac{\text{base}}{\text{hypotenuse}}$$

$$\tan = \frac{\textbf{P}\text{int}}{\textbf{B}\text{eer}} = \frac{\text{perpendicular}}{\text{base}}$$

Yours truly,
THOMAS G. WARD, 2FKO.

("Some People Have Curly Brown Hair Till Painted Black" is another useful trig. mnemonic.—EDITOR.)

NOTICES AND NEWS FROM ADVERTISERS

WE have pleasure in publishing some further notes and news from advertisers concerning their current activities.

Company.	Present Address.	Telephone Number.	Remarks.
Chapman & Hall.	11 Henrietta Street, London, W.C.2.	Temple Bar 5762.	Only difficulty is slowness of production, with the exception of which, they are able to produce their publications as hitherto.
A. F. Bulgin & Co. Ltd.	By-pass Road, Barking, Essex.	Rippleway 3474.	Deliveries are being surprisingly well maintained, in view of the difficulty of obtaining materials. The showrooms in Holborn Viaduct have been closed.
Premier Radio Co.	167 Lower Clapton Road, London, E.5.	Amherst 4723	Most advertised lines still available. Delay inevitable on some articles.
Erie Resistor Ltd.	Carlisle Road, The Hyde, Hendon, London, N.W.9.	Colindale 8011.	—

Due to prevailing conditions certain products may not at present be available to the general public.

HEADQUARTERS CALLING

July Council Meeting

Resume of the Minutes of a Council Meeting held at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, on Monday, July 14th, 1941.

Present.—Messrs. A. D. Gay, A. E. Watts, E. L. Gardiner, D. N. Corfield, S. K. Lewer, W. H. Matthews, W. A. Scarr, G. M. R. Scott Farnie, A. J. H. Watson, H. V. Wilkins and J. Clarricoats (Secretary-Editor).

Apologies.—Messrs. H. A. M. Clark and J. W. Mathews.

1. S./Ldr. G. M. R. Scott Farnie was welcomed to Council.

2. Fifty-two new members were elected and one resignation accepted. Forty-two of the new applicants had been sponsored by Corporate members.

3. The monthly statement of account was agreed.

4. The Secretary-Editor's agreement was renewed for a further period of three years.

*5. It was announced that the Censorship Dept. of the M.O.I. were about to place an official ban on the sending of reports to amateur and broadcast stations located outside Great Britain.

*6. It was agreed to advise members that the G.P.O. does not approve the use of previously used envelopes for correspondence to Northern Ireland.

*7. To commemorate his six years in the Presidential chair, Mr. A. E. Watts offered to present to the Society, a Jewel of Office to be worn by the President at official functions. Owing to prevailing conditions, it was decided to defer the plan for the time being. Mr. Watts was cordially thanked for his offer.

*8. A letter was read from the G.P.O. dealing with war damage liability, and the insurance of amateur apparatus which has been impounded.

9. It was agreed to approach the B.B.C. on behalf of the A.R.R.L. in regard to the question of interference to American amateur stations caused by B.B.C. transmissions on 7150 kc/s.

* These items were reported upon in the August issue.

Prisoners of War Fund

The Secretary-Editor acknowledges, with thanks, contributions of £1 from Mr. David Mitchell, GW6AA., and £2 2s. 0d. from Mr. E. L. Wright, G3SI. We would remind members that the fund has been inaugurated for the purpose of sending parcels at regular intervals to members who are held as prisoners of war. An offer from any member to administer this fund would be welcomed by Headquarters.

Communications Receivers

Mr. S. Levings, G3AO, draws attention to the fact that permits must be obtained for the purchase of secondhand, as well as new, communications receivers, providing they employ controlled valves and/or a crystal filter. Permits can be obtained from The Engineer-in-Chief, Radio Branch, G.P.O. Harrogate, Yorks.

NEW MEMBERS

Home Corporates.

C. H. YOUNG (G2AK), 42 Stanford Avenue, Gt. Barr, Birmingham, 22.
G. R. FOSTER (G2BM), 55 Ruskin Avenue, Bradford Road, Wakefield.
W. D. GILMOUR (G2VB), 35 Grangecliffe Gardens, South Norwood, London, S.E.25.
J. GRAY (GM3LU), 28 St. Mary Place, Dundee, Angus.
D. N. BAKER (G3NP), "Sunnymead," Marguerite Drive, Pitsea, Essex.
F. B. HOLT (G3ZN), 40 Britain Street, Bury, Lancs.
E. J. HEWINES (G4CT), 245 Stone Road, Stafford.
S. LEITH (GM4HX), 51 Thrushcraig Crescent, Paisley, Renfrewshire.
R. S. HOLDEN (GI5HU), 260 Grosvenor Road, Belfast, N.I.
C. H. BABBS (G5IG), c/o 6 Rosencath Terrace, Edinburgh, 9.
F. A. DURRANT (G5PD), 366 Forest Road, Walthamstow, E.17.
R. S. G. BARTLE (G6OB), 21 Farmcombe Road, Tunbridge Wells, Kent.
S. C. ASH (G6OV), 61 The Circle, Dollis Park, N.W.2.
R. CHADBONE (G8JK), "Gayton," Trees Avenue, Hughenden, Bucks.

WE extend a Cordial Welcome to the

112

NEW MEMBERS

whose names are listed

•

OUR THANKS ARE EXTENDED TO THEIR SPONSORS

L. P. ZIMMERMAN (G8NB), 57 St. James Drive, Wandsworth, S.W.18.
J. R. RABY (G8RF), 20 Lord Street, Wolverhampton, Staffs.
W. LINDOW (2AFJ), "Redcairn," Navarre Street, Monifieth.
R. WARING (2AMH), 14 Carr Gate, Blackpool, Lancs.
L. G. LACEY (2AMY), 257 Longmore Road, Shirley, Birmingham.
L. ZIMMERMAN (2AQX), 7 Herondale Avenue, Wandsworth, S.W.18.
R. D. P. TRIEFUS (2BDC), 27 Orchard Court, Portman Square, W.1.
J. W. LARMOUR (2BNM), c/o J. Bell, "Eden," Carrickfergus, Co. Antrim.
R. F. CROCKFORD (2BQW), 21 Adelaide Road, St. Leonards-on-Sea.
R. M. JEREMY (2CMJ), 4 Lingfield Street, Redhill, Surrey.
W. E. HOLDAWAY (2CWF), "Silverdale," Coomberwood Drive, Thundersley, Essex.
A. J. H. BURTON (2CXB), 1 Bungalow, Water Beach Road, Landbeach, Cambs.
G. L. SANDERSON (2DBT), 52 Ashton Gardens, Chadwell Heath, Essex.
L. D. HUBBARD (2FRM), 17 Patten Road, London, S.W.18.
F. J. IRELAND (2FFX), 7 Willow Crescent, Ribbleton, Preston.
A. C. SLOMAN (2HFU), 7 Council Terrace, East Grinstead, Sussex.
W. L. HARRISON (2HJY), 1 Moorlands Road, West Bromwich, Staffs.
H. TUPLING (2HNN), 153 Legsby Avenue, Grimsby, Lincs.
P/O. J. FUNNELL (BRS4340), R.A.F.
J. E. DODS (BRS4341), 64 Castle View Gardens, Ilford, Essex.
M. HEFFERNAN (BRS4342), Hop Garden Cottage, Westergate, Nr. Chichester.
N. H. KING (BRS4343), 19 Southfield Park, North Harrow, Middlesex.
W. J. HICKMORE (BRS4344), 32 Mooreland Road, Bromley, Kent.
E. A. SWEETMAN (BRS4345), 15 Chestnut Grove, Sudbury, Middlesex.
H. G. DRAY (BRS4346), 138 Coombe Road, Brighton, 7.
C. B. FOX (BRS4347), 3 Burwood Road, Lindley, Huddersfield.
R. F. E. O'CONNOR (BRS4348), 27 Thackerays Lane, Woodthorpe, Nottingham.
J. CLEGG (BRS4349), 38 Shirley Grove, Gomersal, Nr. Leeds.
J. BURNS (BRS4350), 8 Essex Street, Blackburn, Lancs.
J. F. REAVEY (BRS4351), 6 Bristol Avenue, Lansdowne Road, Belfast.
J. GILLIES (BRS4352), 33 Watson Crescent, Edinburgh, 11.
M. F. OWEN (BRS4353), 101 Shaftesbury Road, Reading, Berks.
F. M. GREEN (BRS4354), 94 Nottingham Road, Keyworth, Nottingham.
N. J. ELLIOTT (BRS4355), 6 Prospect Road, Shanklin, I.O.W.
E. V. WARD (BRS4356), 46 Vant Road, Tooting, London, S.W.17.
P. R. G. SMITH (BRS4357), Littleheath, South Littleton, Nr. Evesham.
G. W. BENT (BRS4358), 10 Linkway, Barnet, Herts.
R. G. ARTHUR (BRS4359), c/o 68 Cambridge Drive, Lee, London, S.E.12.
CAPT. A. L. KAPLOWITCH (BRS4360), 80 Brondesbury Park, Willesden, N.W.2.
J. D. COLE (BRS4361), 25 Preston Drive, Bexley Heath, Kent.
A. KITCHEN (BRS4362), 13 Harcourt Road, Sale, Manchester.
K. C. B. FIELD (BRS4363), 39 Fernside Road, Bournemouth.
A. D. SPOWAGE (BRS4364), 1 Willoughby Avenue, Lenton Sands, Nottingham.
W. M. POTTS (BRS4365), 75 Southgate, Elland, W. Yorks.
P. L. TINTO (BRS4366), 14 Greyfriars Street, Elgin, Morayshire.
V. H. BLACKWELL (BRS4367), 19 Jubilee Crescent, Bridgend, Glam.
H. G. SMITH (BRS4368), 449 Valence Avenue, Dagenham, Essex.
R. W. DILWORTH (BRS4369), 98 Castleton Road, Deepdale, Preston.
J. B. W. DEANE (BRS4370), The Bungalow, West End, Bangor, North Wales.
G. H. F. COUSINS (BRS4371), 30 Lower Richmond Street, Romford, Essex.
W. F. D. HAWKINS (BRS4372), "Oakhain," Bulford Hill, Durrington, Wilts.
MISS J. WHEELER (BRS4373), "Yew Cottage," Foolow, Eyam, via Sheffield.
J. NELSON (BRS4374), 19 Lady Margaret Road, Kentish Town, N.W.5.
A. E. KILNER (BRS4375), Roe Head, Mirfield, Yorks.
J. R. FORD (BRS4376), 76 Hyde Park Avenue, Winchmore Hill, N.21.
J. L. TOWNEND (BRS4377), 131 Manygates Lane, Sandal, Wakefield.
K. RANTZAU (BRS4378), 8 Beechcroft Gardens, Wembley Park, Middlesex.
A. LEIPER (BRS4379), 10 Balvicar Drive, Glasgow, W.2.
J. E. HICKS (BRS4380), 15 North Avenue, Hayes, Middlesex.
J. F. ERSKINE (BRS4381), "Beachcroft," The Towans, Hayle, Cornwall.
P. G. PATTEN (BRS4382), 262 Abercairn Road, Streatham, S.W.16.
MISS M. E. BAILEY (BRS4383), c/o C. C. Bailey, Snape, Nr. Saxmundham.
E. W. WISKIN (BRS4384), 25 Meadowside Road, Upminster, Essex.
J. SNOWDEN (BRS4385), 78 Suffolk Street, Werneth, Oldham.
T. GOTT (BRS4386), 3 Gladstone Terrace, Huntington Road (Rural), Yorks.
F. J. EADES (BRS4387), 8 Highclere Street, Sydenham, London, S.E.26.
J. F. FAWKES (BRS4388), 38 Queens Road, Cheadle Hulme, Cheshire.
C. F. ISHERWOOD (BRS4389), 13 Linden Avenue, Sale, Cheshire.
C. E. WILKINSON (BRS4390), c/o Gladstone Cottage, Church Street, Digby, Lincoln.
A. G. PERRY (BRS4391), School House, Sutton, Nr. Pulborough.
R. T. BRADSHAW (BRS4392), 8 Hill Top, Stonecot Hill, Sutton Surrey.
J. A. THOMASON (BRS4393), Newbold Farm, Burrough, Melton Mowbray.
E. E. STONE (BRS4394), 48 Albert Avenue, South Chingford, London, E.4.
J. L. SHAW (BRS4395), 504 Manchester Road, Bradford.
F. J. WOOLFENDEN (BRS4396), 47 Grosvenor Drive, Hornchurch, Essex.
B. M. ADKINS (BRS4397), "Varndell," Fernden Hill, Haslemere, Surrey.
R. T. SEALBY (BRS4398), 12A Wycome Road, Hall Green, Birmingham, 28.
R. V. ARNABOLDI (BRS4399), 3 Kings Road, St. Albans, Herts.
J. TURNEY (BRS4400), 54 Wyncliffe Gardens, Leeds, 7.
E. G. LINTOTT (BRS4401), 23 Roden Street, Holloway, N.7.
G. S. ALLSOP (BRS4402), "Winchcombe," Smith Lane, Mobberley, Cheshire.
W. J. INMAN (BRS4403), 25 Limerick Road, Redland, Bristol, 6.
T. H. PLATER (BRS4404), 341 Milligan Road, Leicester.
D. J. RYCRAFT (BRS4405), 164 Sidegate Lane, Ipswich.
G. G. DOUGLAS (BRS4406), 56 Summerhouse Drive, Bexley, Kent.

NEW MEMBERS...(*Continued from page* 115).

G. E. CAIN (BRS4407), 122 Bucks Road, Douglas, I.O.M.
L. A. MITCHELL-HENRY (BRS4408), 81 Cannon Lane, Pinner, Middlesex.
P. G. WARHAM (BRS4409), 44 Sefton Terrace, Beeston, Leeds, 11.
R. C. BROWN (BRS4410), "Chilworth," Rymer Road, Croydon, Surrey.
R. PRICE (BRS4411), 62 Anchorway Road, Coventry, Warwicks.
J. R. DATHAN (BRS4412), 3 Ebor Lane, Haworth Brow, Keighley.
C. L. WAYWELL (BRS4413), 10 Fern Avenue, Wargrave, Newton-le-Willows, Lancs.
E. R. HUGH (A), 29 Kingston Avenue, Stafford.

Dominion and Foreign.

E. S. BROWN (VE3AHV), R.C.A.F.
A. D. BLACKFORD (VE3AHX), R.C.A.F.
ING PAVEL WEISS (OK1WE).
W. B. NEILSEN (W2KYT), 37 Fenworth Boulevard, Franklin Square, Long Island, New York.
W. FORD (BERS494), Gibraltar.

EDITORIAL—(*Continued from page* 8).

Fourth, our Handbook has demonstrated to countless thousands of non-members what can be done, by an amateur organisation, to provide sound technical information without frills. Last but not least Headquarters has been able to effect economies, by operating in the suburbs of London with a minimum of staff.

These factors are chiefly responsible for our remarkable progress, but others have contributed. For example, Council, whose duty it is to direct the activities of the Society, has met without fail every month, often during air raids. That they will continue so to do is certain, for the work of the Society must and shall go on.

The time is not yet ripe to refer to post-war operating facilities, but the membership may rest assured that no stone will be left unturned in the task of establishing broad principles.

Let us hope that before another year has passed Peace will have returned and with it those familiar sounds—Dah, Dit, Dit Dit Dit, Dah! J.C.

AN ELECTRICALLY-DRIVEN COIL WINDER—(*Continued from page* 84).

With practice, and a good light fixed directly over the winder, it is possible to wind wire of the finest gauge with ease and minimum breakage. Care must however, always be taken to see that a very low voltage series lamp is used and that the wire spool is running freely.

Small quantities of wire and insulating material, can be obtained from Messrs. Lumen Electric, Scarisbrook Avenue, Liverpool.

PROBLEM PICTURE No. 1

Solution: James Ferguson, GM6WD, British War Correspondent.

CONVENTION GROUP PHOTOGRAPH

We are asked to state that the Convention Group photograph was despatched on or before August 24 to all members who placed an order. Additional copies can be obtained, price 2s. 9d. post free, mounted; 2s. 3d. unmounted, on application to Parrs Advertising, 121 Kingsway, London, W.C.2. Copies of the Services Group are also available, price 2s. mounted and 1s. 6d. unmounted.

Printed in Great Britain for the Inc. Radio Society of Great Britain, 115 High Holborn, London, W.C.1, by Sir Joseph Causton & Sons, Ltd., 68, Fleet Street, London, E.C.4