
R·S·G·B

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BULLETIN

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

August 1942

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THE DISPOSAL OF GOVERNMENT SURPLUS RADIO EQUIPMENT AFTER THE WAR

THE letter published elsewhere in this issue, from Mr. H. S. Chadwick, raises an important matter and one which is undoubtedly exercising the minds of many members in and out of the Services. In effect, our correspondent asks what steps can be taken to prevent members of the Society, and other amateurs, being called upon to pay fancy prices after the war for Government surplus radio equipment acquired, at disposal prices, by financial concerns whose only "scientific" interest will lie in making money easily. Those who remember the ramp which followed the last war need no reminding of the keen competition which raged between legitimate dealers and speculators, anxious to acquire, for resale, the surplus material being offered. It would be wrong to suggest that all buyers were out to make huge profits, but the fact remains there was a feeling among radio amateurs in particular, that they were often charged prices far in excess of the prices paid to the Government when the material was put up for auction.

Mr. Chadwick (and no doubt many other members on Active Service) appreciates the value, to the post-war amateur, of much of the radio equipment which will eventually be offered for sale by the Government. For that reason his comments have more than ordinary interest at the present time.

Our correspondent suggests that the radio amateur would ensure a fairer deal for himself if the Society could approach the authorities, at the appropriate time, and endeavour to purchase, and retail to members, Government surplus material at a reasonable price. This is of course impossible; the Society, as an amateur organisation, could not embark upon business deals of this nature however strong the arguments may be in favour of such a course being adopted.

One solution to the problem may lie with the Government itself. Having adopted a system of price control during war-time, the Board of Trade may be induced to establish maximum resale prices for all classes of surplus Government material.

An ironical situation could arise in connection with meters and other test gear. Last year members responded in fine style to the appeal to sell or donate to the Government surplus meters. What would be the feelings of a public-spirited amateur who, after the war, was offered one of his meters at some ridiculously high price? By adopting a system of price control the intending purchaser would know that he is getting a square deal even if it means buying back his original meter.

The disposal of surplus valves will also present serious difficulties unless the problem is tackled properly. Possibly the most satisfactory method would be for the British Valve Manufacturers' Association, in collaboration with the R.S.G.B. and other interested bodies, to fix, with the approval of the Board of Trade, maximum prices for valves which, on test, conform to predetermined limits. Obviously such limits would require to be lower than those set for new valves of similar type but by establishing a "ceiling," amateurs would at least have the satisfaction of knowing that they were receiving a fair deal.

The views outlined above are personal and are put forward to induce members to forward their comments, which we shall be pleased to publish providing they are not verbose, and are free from criticism of past trade dealings.

J. C.

Tough Guys

The news flash, which we were able to include in our last issue, that Squadron Leader R. C. Wilkinson, D.F.M., G4HW, had succeeded in making his escape from enemy occupied territory after being shot down over Northern France two months earlier, has been followed by the equally cheering news that another member has, at his third attempt, been successful in breaking out from a German prison camp.

The stories surrounding these two escapes, like the real stories behind the awards which continue to be made to our members in the Services, must wait until after the war for their telling, but it is highly satisfactory to know that the Ham's determination to overcome difficult situations is even greater to-day than it was before he was put to the supreme test of war.

We congratulate most warmly all who have shown such clear evidence of that truly British characteristic known as "toughness."

V.H.F. Propagation and Aerial Group Proposed

Mr. Denis Heightman, G6DH, Experimental Section Manager, 234 Burrs Road, Gt. Clacton, Essex, has decided to reform the old 28 Mc/s. Propagation Group under a new title. By catering for the V.H.F.'s in general, the scope of this new Propagation group will be considerably increased. The group will work in close collaboration with the V.H.F. and Microwave sub-group led by Mr. H. H. Phillips, GW4KQ.

Mr. Heightman will be glad to hear from all who are interested in this project and especially from an experienced member, with typing and duplicating facilities, who would undertake the duties of Group Manager. Miss Corry, G2YL, who for many years has led the 28 Mc/s. Propagation Group, has been invited to assume the leadership of the new group, but due to other commitments she has been unable to accept.

It is planned to circulate a Letter Budget to members of the group as soon as it has been reconstituted. All communications in connection with the new group should be addressed to Mr. Heightman.

TRANSMISSION LINE TUNED CIRCUITS, AND THEIR APPLICATIONS.*

By D. N. CORFIELD, D.L.C., Hons. (G5CD).†

PART II.

Practical Considerations

THE writer first became seriously interested in the use of transmission lines as tuned circuits when designing a 56 Mc/s. self-excited transmitter during 1934.

In this transmitter, which employed two 4304A valves in push-pull, both grid and anode lines were of the open wire or hairpin type, acting T.P.-T.G. fashion. These lines were originally made of $\frac{1}{4}$ -in. copper tube, the aerial feeders being coupled by a loop to the cold end of the anode line. They were about 2 ft. long and spaced 6 in. for the anode and 2 in. for the grid. Results were fairly successful except that the "cold" end of the anode line became nearly red hot when inputs of about 50 watts were used! The trouble was corrected by using $\frac{3}{8}$ -in. tube for this section indicating the necessity for low resistance at this point. Similar lines were used later, in a M.O.P.A. circuit designed for 56 Mc/s. operation.

At about the same period experiments were commenced on frequencies around 350 Mc/s. first using conventional triodes, run under "positive grid-negative anode" conditions, and later using open-wire type lines. These experiments were successful apart from the fact that only a microscopic amount of power was available. Later when the "Acorn" type of valve became available, further work was undertaken using a concentric arrangement with a 4316 transmitting valve. An output of 9 watts was obtained at frequencies around 350 Mc/s. A receiver employing a 955 "Acorn" and a similar type of tuned circuit was also developed. The concentric line in its final form, comprised an outer conductor about 9 in. long made from 16 s.w.g. copper square section, and an inner conductor of $\frac{3}{8}$ -in. dia. copper tube. The outer conductor which was of "U" section, having one side open, was found to be very convenient indeed as it enabled experimental tappings etc., on the inner conductor to be made with ease. This form of construction has been retained in principle for current designs.

It has been found that neither the "Q" of the line, nor the calculations are appreciably affected by the actual shape of the outer conductor, or by the fact that one side is open. If complete electrostatic screening is essential to any material extent, the line

may be mounted on a chassis so that its open side is closed by the metal work of the chassis.

As the equipment referred to above, was unsatisfactory from a frequency stability point of view, experiments were commenced with the idea of developing a crystal controlled transmitter and a super-heterodyne receiver.

Transmitter Design

It was intended to build a transmitter which was to utilise a portable 56 Mc/s. crystal controlled transmitter (described in the July 1939 BULLETIN) as the exciter or drive unit, but unfortunately the trans-

mitter experiments were incomplete at the outbreak of war—concentric tuned circuits and other considerations having got as far as 224 Mc/s.

The type of concentric tuned circuit, with dimensions, employed for the 112 Mc/s. doubler is shown in Fig. 7. The thick end plate should be noted which is in line with earlier remarks on the hairpin type. This arrangement worked very well but created difficulty in layout as it was essential that the 56-112 Mc/s. doubler valve (a 4074A-RK34-operating push-push) should be mounted in the position shown dotted in Fig. 7, so that the cathode could be

returned with a short lead to the "cold" end of the circuit. The difficulty arose because the drive spindles of the push-pull tuned circuit (input) condenser to the valve, and the condenser tuning the output circuit were at right angles.

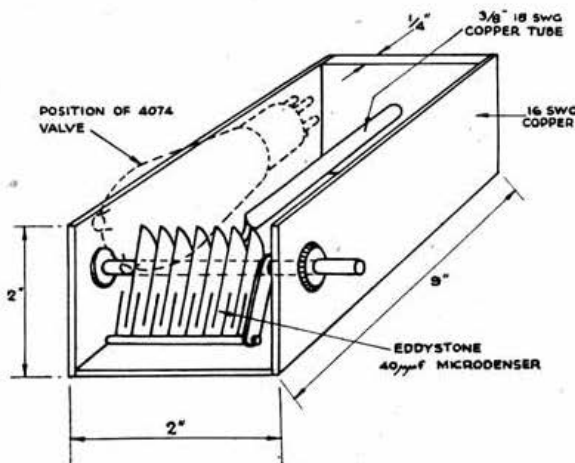


Fig. 7.

A Concentric-tuned circuit suitable for operation on 112 Mc/s. Variable condenser mounted through side of outer conductor.

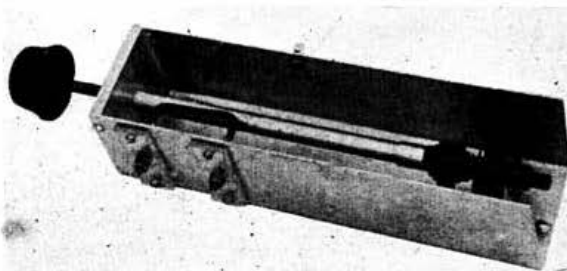


Fig. 8.

A Concentric-tuned circuit suitable for use on 100 Mc/s.—130 Mc/s. having the driving spindle passing through the inner conductor. Dimensions 8 in. x 2 in. x 2 in. Condenser Eddystone Microdenser 40 μ F. The coupling loop can be seen, also the insulating bush for the anode lead from the valve.

* A Lecture delivered to the Society by the author at the Institution of Electrical Engineers, London, on March 28, 1942.

† 10 Holders Hill Gardens, London, N.W.4.

A further modification resulted in the arrangement shown in Fig. 8 where the driving spindle to the condenser is carried through the hollow inner conductor. This produces a special advantage in that the spindle comes out at the "cold" end of the circuit. Further, since it is electrically coupled to the inner conductor, less current passes through the bearing. This point is always a source of trouble in V.H.F. transmitters—as no pigtailed contacts are possible at frequencies of very high order. Using the valve mentioned, the arrangement of Fig. 8 gave an output of approximately 12 watts, at 120 Mc/s. Off load an anode current dip from 120 mA. to 30 mA. was obtained, which was then loaded up to about 100 mA. by the next stage (a 4316A "Acorn" triode acting as a doubler). The anode tuned circuit for 240 Mc/s. was generally similar but about half the length and employed an Eddystone 18 μ F microdenser instead of a 40 μ F as illustrated. A loop mounted on Polystyrene insulation, coupled to the "earthy" end of the inner conductor of each circuit served to feed the outputs and the aerial *via* open wire feeders of about 400 ohms impedance. This arrangement was used in each case so that the transmitter could be used on 112 or 224 Mc/s. as desired, modulation being of the cathode type. It was felt that the circuit dimensions for 224 Mc/s. were not ideal and that further work was necessary, but due to the outbreak of hostilities that was not possible.

Receiver Design

A receiver employing concentric tuned circuits was also being developed at the same time, and this has been completed. The range has not, however, been extended as a permanent measure higher than 170 Mc/s. during the war period, although measurements have been made up to 250 Mc/s. with satisfactory results. Arrangements were made later to include both the 56 Mc/s. and 112 Mc/s. bands temporarily. The tuned circuits employed were of the type shown in Fig. 7, as it was intended to gang them. The receiver is of the superheterodyne type employing one R.F. stage (a 954 "Acorn" pentode), an "Acorn" diode frequency changer, a 955 "Acorn" triode oscillator, three I.F. stages, using an intermediate frequency of 10 Mc/s., a diode second detector, a diode noise limiter, a beat frequency oscillator and A.F. output stages. The layout of this receiver in its final form is shown in Fig. 9. The aerial tuning circuit, which is mounted at the rear of the chassis, is 9 in. long, outer conductor 2 in. square, end plate $\frac{1}{4}$ -in. thick, inner conductor $\frac{3}{8}$ -in. tube $7\frac{1}{2}$ in. long, tuned by a 100 μ F Eddystone microdenser. This circuit gave a coverage from 170 Mc/s. to 50 Mc/s. The aerial was coupled with a loop similar to that used for the transmitter and this gave a step-up of approximately 4-1 in volts to the grid of the 954 valve. The loop may be bent so as to adjust the coupling. The grid was tapped approximately $\frac{2}{3}$ up the inner conductor. Tests were made with a tap lower down but although selectivity improved, the gain fell off considerably. The tuned anode circuit coupling the amplifier to the diode was similar in dimensions and condensers, the anode tap being the same and the H.T. fed *via* an Eddystone 1021 R.F. choke. Coupling was effected *via* a ceramic condenser of 25 μ F capacity.

The diode anode is tapped on to this concentric circuit at the same point as the anode tap. The 955 oscillator is of the electron-coupled type, the cathode being tapped on to the inner conductor towards the cold end, and the grid tapped on near the hot end. The cathode of the diode is coupled to the oscillator circuit by means of a loop as shown in the layout (Fig. 9).

A small trimmer was connected from the grid tap of

the 954 valve to earth, in order to balance the extra capacity of the diode on the tuned anode circuit. It was later decided to place the trimmer at this point rather than across the tuning condensers because tracking was better, due to the fact that the inner conductor tended otherwise to exhibit other modes of resonance. As it was intended to gang all three circuits, the oscillator line was made about 10 per cent. shorter than the other lines, using the oscillator on the high-frequency beat.

Padding was expected to take care of tracking at the low frequency end, but after much experimental work it was found impracticable over a $3\frac{1}{2}$ -1 frequency coverage, because the law was quite different. Further the value of the padding condenser (one in series with the tuning condenser) required to be quite different from that calculated. The unexpected result was brought about by the fact that as the vanes, etc., of the condenser form an extension to the length of the inner conductor they become part of the inductance of the circuit as well as a capacity. Padding thus becomes impossible unless one can devise a tuning condenser which has negligible physical size. It could probably be achieved by using a condenser with specially shaped vanes for the oscillator, but this is not very practicable. It was finally decided to separate the oscillator tuning from that of the R.F. circuits and this arrangement appears in the layout illustrated. It is necessary to use an insulated coupling between the two condenser shafts of the R.F. circuits and also to ensure that no part of the shaft touches one side or the other of the outer conductor at the same time. Since the condensers are not mounted at a completely "earthy" point (although nominally so) noise or lack of tracking of these circuits will result from failure to take the precautions mentioned.

The gain of the 954 pentode is approximately six times and nearly constant over the frequency range, whilst the conversion loss of the diode is about 6db compared with the I.F. As the I.F. sensitivity is

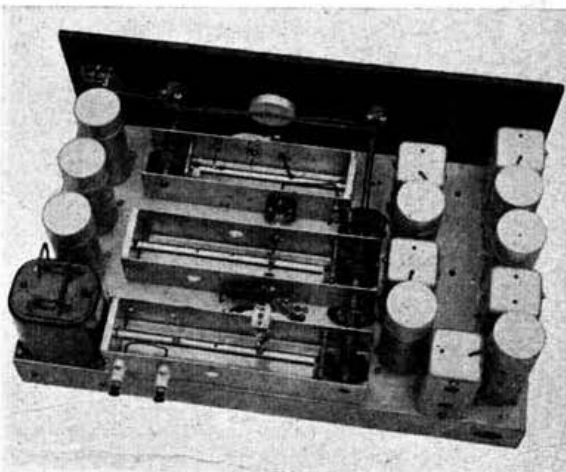


Fig. 9.

Plan view of a receiver employing concentric-tuned circuits, looking from the rear of the chassis. The rear tuned circuit is the aerial tuning with aerial coupling loop; the R.F. amplifier 954 "Acorn" is mounted under the trimmer between this tuned circuit and the middle one which is ganged to it. This is the tuned anode circuit. The diode frequency changer can be seen mounted between this tuned circuit and the oscillator tuned circuit nearest the panel. The oscillator, a 955 "Acorn" is mounted on the side of the outer conductor between it and the front panel. The valves and coils on the right are the 31 F. stages and the detector and I.F. beat oscillator; those on the left are the output stages and noise limiter. On the front panel are the A.F. and R.F. gain controls and dial pilot lamps.

about 9 microvolts, this gave a sensitivity from the aerial of under 1 microvolt, allowing for the aerial step-up. The circuit of the R.F. end of the receiver is shown in Fig. 10.

A few comments regarding the use of a diode frequency changer may not be out of place. Since a diode can be used as a rectifier or detector, it can also be used as a frequency changer because in any non-linear device, beats between two applied sources will be produced. In the case of the circuit shown, the R.F. input is applied to the anode, the cathode being connected via a coupling loop to the oscillator through the I.F. transformer primary to a diode load resistance R_8 shunted by a suitable by-pass condenser C_{13} . The purpose of this resistance is to provide a D.C. load

for its ease of construction and partly because it lent itself well to experimental work.

The outer conductor is made of 16 S.W.G. copper sheet, bent into U section around a hard wood block—in many cases, the supplier will do the bending if required. The end plate is made of $\frac{1}{4}$ " thick copper which is frequently obtainable as odd pieces of bus bar; the inner conductor is $\frac{3}{8}$ " copper tube with 18 S.W.G. walls supplied hard and is quite rigid. The end plate is secured to the outer conductor by three 6BA screws which are used to hold it in position whilst the joints are thoroughly sweated and soldered. The inner conductor is also sweated into the end plate. It is usually better to tin, and wipe clean, all the soldered edges before attempting the final sweating.

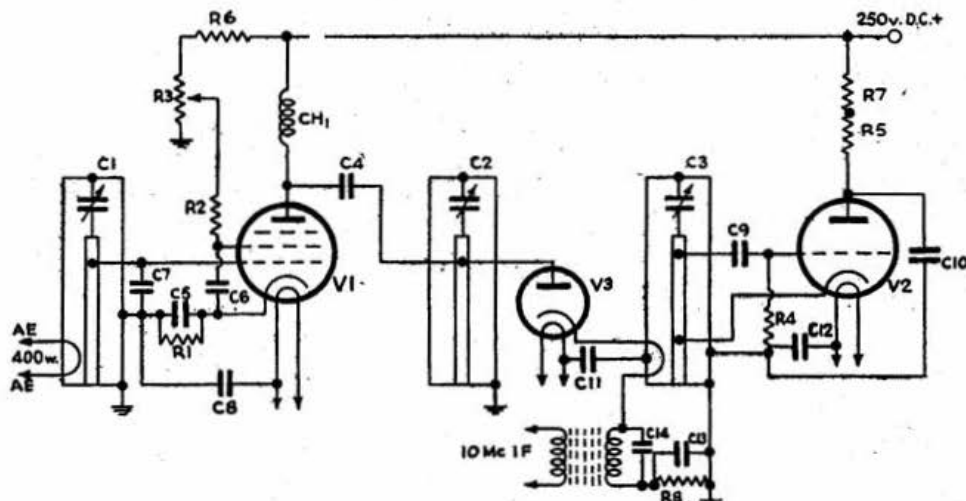


Fig. 10.

Circuit for the R.F. portion of the receiver shown in Fig. 9.

C1, 2, 3	100 μ F Eddystone Microdenser.	R1	600 ohm $\frac{1}{2}$ -watt Erie.
C4	25 " Erie Ceramicon N680.	R2	1,000 " "
C5	50 " " " "	R3	25,000 " Potentiometer.
C6	50 " " " "	R4	50,000 " $\frac{1}{2}$ watt Erie.
C7	3-30 " Trimmer Cydon.	R5	1,000 " "
C8	100 " Erie Ceramicon N680.	R6	20,000 " 2 watt "
C9	25 " " " "	R7	20,000 " "
C10	100 " " " "	R8	10,000 " $\frac{1}{2}$ watt "
C11	100 " " " "	CH1	Eddystone 1021 R.F. Choke.
C12	100 " " " "	V1	954 " Acorn."
C13	500 " T.C.C. type M.	V2	955 " "
C14	50 " Erie Ceramicon N680.	V3	EA50 Mullard.

for the diode, and a bias which is self adjusting to suit the heterodyne voltage input from the oscillator.

It has been established that as a frequency changer (in the same way as for a detector) the input impedance of a diode is to all intents equal to half the D.C. load resistance; this applies in this case also to the output impedance I.F. and the effective oscillator load. The diode frequency changer has a low noise factor; is indifferent, within reason, to the magnitude of the peak heterodyne voltage; will operate quite efficiently on oscillator harmonics if required; has a conversion loss of 6 db; (providing it is operative into a high impedance I.F. transformer); and an input capacity in the case of the "Acorn" type (such as a Mazda D1 or Mullard EA50), of the order of 2μ F. The value of D.C. load chosen, viz. 100,000 ohms gave an input impedance comparable with that of a 954 pentode, which is 55,000 ohms at 60 Mc/s. and 14,000 ohms at 120 Mc/s.

Construction

The type of concentric tuned circuit employed in the apparatus described above was partly chosen

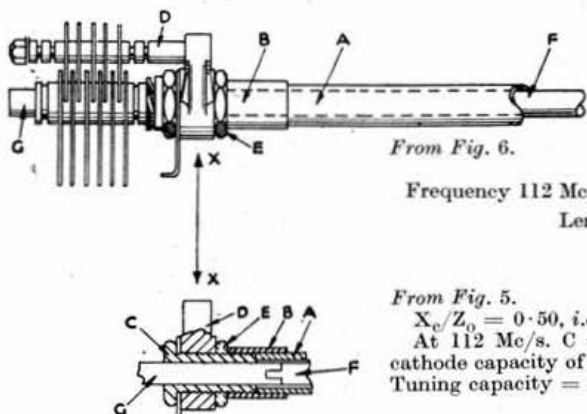
Copper is used throughout because of its lower losses; any other material, except silver, is to be avoided. Particularly does this apply to brass unless it is evenly silver plated at least $2/10,000$ " thick. The complete tuned circuit may be silver plated, although it has only a small effect on the "Q," but a coat of lacquer is recommended in any case. During experimental work it is often convenient to utilise small clips for the tapping points on the inner conductor, but as a permanent arrangement it is recommended that these taps be attached with 6BA screws drilled and tapped into the tube. In the case of the type which has the operating spindle via the inner conductor, Fig. 11 shows a section of the method of attachment of the condenser to the inner conductor.

The inner conductor (A) has a sleeve (B) sweated on to it. This sleeve is threaded for half its length to suit the one-hole fixing bush (C) of the Eddystone microdenser (D). (E) is the locknut supplied with the condenser. The condenser shaft is drilled out centrally with about a $\frac{1}{4}$ " hole and the tuning spindle (F) has a

spigot on the end which is either soldered or screwed into the condenser shaft (G).

Where concentric tuned circuits are used with "Acorn" type valves, the valve socket should be mounted on one side of the outer conductor, and all earthed points connected directly to this conductor. With larger types the valve should be mounted parallel with the tuned circuit, the cathode "earthy" point being connected with a short heavy lead to a point near the "cold" end of the outer conductor, the top cap either anode or grid (as the case may be) being connected by a short lead to the desired point on the inner conductor.

The type of tuned circuits referred to, although undoubtedly more trouble to construct than coils, give a performance which well repays the work involved, and it is hoped that the information on the types employed by the Author may be sufficient to encourage their use by others.



Method of mounting a condenser on the inner conductor of a concentric tuned circuit such as shown in Fig. 8.

For Your Bookshelf

SHORT WAVE WIRELESS COMMUNICATION—Including Ultra-Short Waves. (Fourth Edition). By Ladner and Stoner. Chapman & Hall; 573 pp., 342 illustrations; 35/-, postage extra.

Note the italics! The authors, recognising the great interest which is being shown in V.H.F. technique and being aware of recent wide developments, have wisely decided to bring into the latest edition of their classic publication an extensive account of V.H.F. theory and practice. Chapter IV deals with the propagation of short and ultra-short waves over short distances, while Chapter V gives some interesting data on the propagation of similar waves through the atmosphere.

The Appendices include propagation curves for 2, 4 and 6 metres; curves for the prediction of optimum wavelengths; data for the calculation of characteristic impedance of different types of feeders and feeder efficiencies, and short and ultra-short wave valve data.

It is interesting to note that Mr. R. L. Varney, G5RV, provided details of Transmitting Equipment. Acknowledgments are also made to another well-known member, Mr. Eric Megaw, for information on Electron Oscillators.

This war-time edition contains 180 new diagrams and a wealth of new material, although the authors express regret that the exigencies of the times have prevented them from making reference to many new and interesting developments. We sympathise!

A change in chapter sequence is noted, which has resulted in a more logical arrangement. For example, the chapters on H.F. Feeders, Aerials and Aerial array follow immediately after the chapters on propagation.

There is a particularly good chapter devoted to electron coupled oscillators, whilst an extensive chapter dealing with Modulation circuits includes references to Frequency Modulation, the Cathode Follower and the Negative Feedback amplifier.

Crystal band pass filters do not appear to be discussed, neither is any reference made to the more recent work carried out by radio amateurs on the short and ultra-short waves. The chronological table showing the development of short waves "cuts off" with a reference to the commencement of Television in 1936. Brief acknowledgments to the achievements of amateurs during the three years preceding the war would have given a more complete picture. However, the new "Ladner and Stoner" (by which name this book is generally known), is assured of a warm welcome from the amateur fraternity, who have for years regarded previous editions as "their bible."

J. C.

[Copies of the above book may be obtained through the Society, but as the demand will undoubtedly be considerable, no delay should occur in placing an order.—ED.]

Bibliography

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Electronic Engineering, Data sheets No. 4-8.

Appendix

Calculation example:—

Consider the tuned circuit shown in Fig. 8. Length of line including condenser shaft (moving vanes) 8", inner conductor diameter 0.375" and outer conductor (taken as circular) 2".

$$D/R = \frac{2.0}{0.375} = 6.3$$

From Fig. 6.

$$Z_0 = 100 \text{ ohms}$$

$$\text{Frequency } 112 \text{ Mc/s. } \lambda = 2.68 \text{ metres} = 268 \text{ cms.}$$

$$\text{Length} = 8 \text{ inches} = 20.3 \text{ cms.}$$

$$L/\lambda = \frac{20.3}{268} = 0.076$$

From Fig. 5.

$$X_c/Z_0 = 0.50, \text{ i.e. } X_c = 50 \text{ ohms}$$

At 112 Mc/s. $C = 28.5 \mu\mu\text{F}$. Deducting anode-cathode capacity of valve 4074A (RK34) = $4.2 \mu\mu\text{F}$. Tuning capacity = $24 \mu\mu\text{F}$, approx.

In practice this circuit tuned with the $40 \mu\mu\text{F}$. condenser slightly more than half-way in.

WIRELESS TERMS EXPLAINED. (Second Edition). By "Decibel." Pitman; 74 pp.; 2/6.

The new edition of this popular book contains an explanation of many recently introduced technical radio terms. Useful for reference purposes, and as an arbiter in "Radio Quizzes."

PROBLEMS IN RADIO ENGINEERING. (Fifth Edition). By E. J. A. Rapson. Pitman; 150 pp., 18 diagrams; 5/-.

The problems are drawn from examination papers of the City & Guilds of London Institute, in Radio Communication, the I.E.E., in Electrical Communications, and the University of London, in Telegraphy and Telephony. Descriptive examples have been included to guide readers engaged in private study. The new edition contains problems set by the above authorities since the previous edition appeared.

The book is divided into some 40 sections, each dealing with a specific aspect of radio engineering. Answers are given to the mathematical questions set in the text.

SOFT SOLDERS. British Standards Institution. 2/-, by post 2/3.

This is a War Emergency B.S.S. for Soft Solders—Grades C., D., G., M. and N. The relevant specification (BS. 219) has, at the request of the Non-Ferrous Metals Control (Ministry of Supply), been reviewed in order to effect economy in tin. As a war measure soft solders are being restricted to five grades which are considered adequate under present conditions to meet the great majority of needs.

The War Emergency Specification gives details of the chemical composition and chemical tests of the five grades. An analysis of British Soft Solders is included.

"Radio" Handbook 1942

Members who have placed orders for the above publication are asked to note that the first printing has been exhausted. A new printing was due to be published on August 8.

The new address of Editors & Engineers, Ltd., publishers of "Radio" is 77 Bedford Street, Stamford, Conn., U.S.A.

Strays

On Saturday, July 18, between the hours of 14.00 and 19.00 B.S.T., D. Garfitt, BR84906, logged speech and music transmissions (some in French) on frequencies ranging from 38.6 Mc/s. to 30 Mc/s.

During past years the month of July has proved good for 56 Mc/s. communication over long distances.

A MORSE INSTRUCTIONAL UNIT.

By A. V. DYER, BERS379.*

THE Morse Code instructional unit described in this article was devised primarily for A.T.C. purposes.

The circuit, shown in Fig. 1, consists of an audio frequency oscillator of conventional design, and a low frequency—low gain amplifier which functions in effect as a buffer stage between the oscillator and the load. In addition, a modulator stage is included to permit local speech, or an external signal, to be superimposed across the output. The primary winding of the oscillator transformer acts as part of a choke capacity coupling to the L.F. stage.

Switching

By means of switches, Morse or telephony may be sent to the whole class, or to selected points. In addition external signals such as from a gramophone record or from the output of broadcast receiver may be relayed to the whole class. In the latter case the output from the receiver must be choke capacity or transformer coupled.

Although the actual output from the L.F. amplifier has not been measured, the original model provided an ample signal for 25 pairs of low resistance headphones, without any variation of note occurring when all positions were being keyed independently for transmission practice.

By the aid of the switches multiple operation can be undertaken simultaneously—an important point when pupils are at various stages of progress.

Construction

In view of the fact that the original model was made up from oddments collected from the junk box, it is

* 96 Bladindon Avenue, Bexley, Kent.

not proposed to discuss constructional details. Slight interaction between the oscillator transformer and the output transformer of the modulator stage was overcome by enclosing the former in a screen.

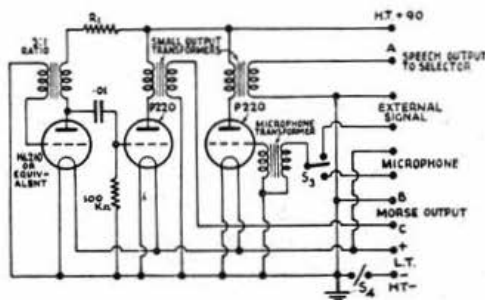


Fig. 1.

Circuit of Morse Instructional Oscillator-Amplifier-Modulator for Group Instruction. The switch S3 permits either local speech or an external signal to be superimposed across the output. S4 is a filament on-off switch. The value of R1 is found by experiment.

Selector Unit

This unit comprises a paxolin panel measuring 9 in. x 6 in. drilled and fitted with 25 sockets—four rows of six and one isolated—as shown in Fig. 2. Twenty-four sockets are connected to the instruction points, whilst the remaining socket is connected to the instructor's key. The sockets can be of the standard type. Those used in the original model were made by *Chix*, red tops being used for the 24 instruction lines and a blue top for the instructor's key connection.

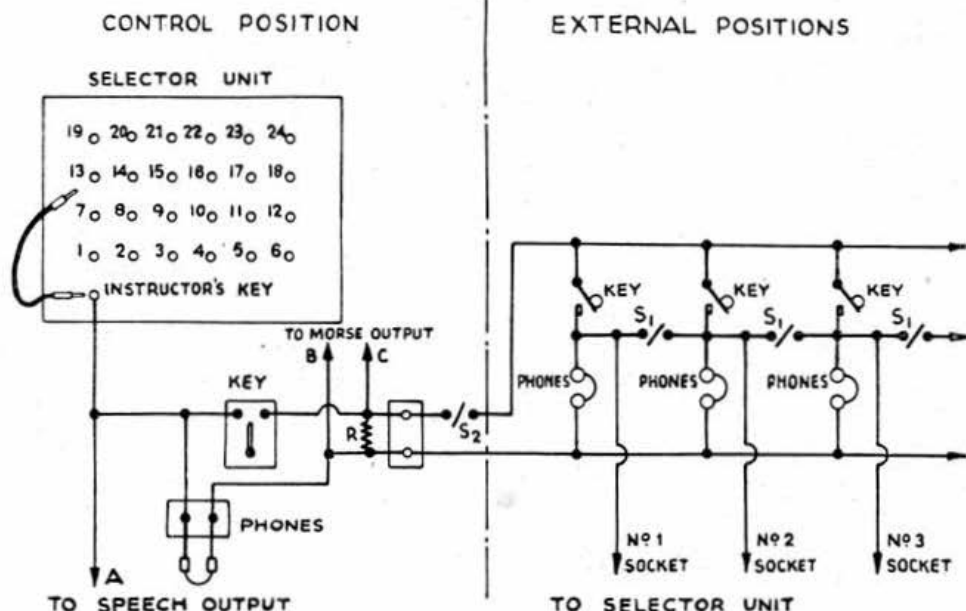


Fig. 2.

Schematic of Selector Unit and External positions.

S1 Key isolator switches.

S2 External keying circuit isolator switch.

R Load matching (varies from 5 to 250 ohms).

Wiring

Wiring was carried out with rubber covered wire. Slight interaction effects during independent keying were cleared by the insertion of an output matching resistance across the output from the unit. The value of this resistance must be found by experiment.

A certain amount of trouble was experienced with the instructor's position due to the magnetic field radiated from the unit, but this was cleared satisfactorily by wiring the control bench with braided cable. An initial test showed that a metal plate between the unit and the wiring was a partial cure which would seem to indicate that if the whole unit had been enclosed in a metal cabinet the trouble would not have been present.

Operation

Operation can be considered under five headings:—

(a) *Normal*.—This is the condition which is used for transmission of buzzer exercises to or by the class as a whole. Pupils are not required to answer.

(b) *General*.—Used for the conduct of procedure training. Pupils must hear one another and be able to answer.

(c) *Individual*.—This allows pupils to carry out individual transmitting practice. It also permits the instructor to correct any individual without interrupting the rest of the class.

(d) *Grouping*.—Reference to Fig. 2 shows that the "linking" line is broken between each position by means of the switches (S1). As each switch is "made," successive positions are linked up to the preceding position, thus any number of positions (providing they are successive) can work together. The limiting factor is the number of positions in the series.

If the instructional room is fitted with 20 points then when alternative switches are "open," pupils work in pairs. If every third switch is opened pupils work in groups of three. If, for example No. 10 switch is opened then the pupils working on points from No. 1 to No. 10 operate as one class and those working

on points from No. 11 to No. 20 operate as a second class.

(e) *Link Grouping*.—It is often desirable that points other than adjacent, should work together. To accomplish this arrangement all key isolator switches are broken and the desired points connected up by links at the control panel. Thus if positions No. 5 and No. 14 require to work together then the two appropriate contacts on the control panel are bridged over. Any number of groups can thus be linked up, the limiting factor being the number of plugs available. When these are exhausted the grouping can be co-opted for the remaining points.

It will thus be seen that "the exchange system" allows exceptional facilities for all types of instruction in procedure, and it is particularly useful where mixed classes have to be catered for.

When the link method of grouping is used it is an easy matter to demonstrate the various types of controls that are likely to be met with in practice, as well as Group or Command organisation. It also permits the linking up of various groups (each of which can be given a different frequency) to demonstrate the organisation of a large Signals Office.

Switch Controls

The table below gives details of the positions of the various switches referred to earlier.

Operation	Position of		
	S2	S1	Control
(a) Normal	Broken	Made	Any point
(b) General	Made	Made	Any point
(c) Individual ..	Made	Broken	Selected
(d) Grouping ..	Made	Selected	Selected
(e) Link grouping ..	Made	Broken	Links

Throughout the whole scheme the instructor "makes" the speech switch and "breaks in" either to the whole class or to a selected position.

DIRECT READING CAPACITY BRIDGE

By L. W. SMITH (2FSI)*

FIG. 1 illustrates a simple, direct reading, capacity bridge, which is capable of measuring capacities from 50 μF to 16 μF in three ranges.

The potentiometer P_1 forms the ratio arms of the bridge circuit, and it is on this potentiometer that the capacity is measured. P_2 serves to balance out the conductance of the condenser under test, thus giving a quieter minimum. In most cases, where the conductance is a reasonable figure, a silent point is obtainable.

The addition of condensers C_4 - C_7 gives the circuit a "balanced to earth" condition, and serves to swamp out the capacity unbalances introduced by the input transformer and phones, thereby ensuring accuracy on low readings.

C_1 - C_3 are the offsetting condensers, arranged so that with no capacity in the "x" arm of the bridge, the potentiometer P_1 is set at one end of its travel for balance—this point being marked as zero for the three scales. These condensers are switched in, one for each range, in conjunction with R_1 and R_2 , which are introduced to ensure that the zero balance falls on the same point on the dial for each range.

The values given for these components are those

found by experiment by the writer, but it should be borne in mind that the values of the condensers are interdependent, and will vary with different con-

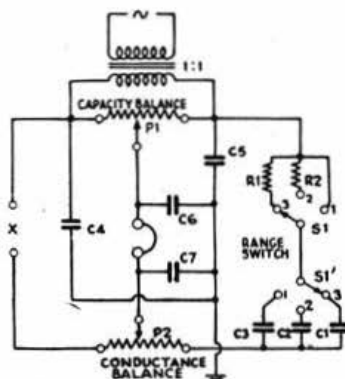


Fig. 1.

Circuit of simple capacity bridge.
 R_1 25,250 ohms P_1 5,000 ohms C_1 .001 μF C_5 .5 μF
 R_2 2,250 ohms P_2 2,000 ohms C_2 .01 μF C_6 - C_7 .01 μF

*161 Old Dover Road, Blackheath, London, S.E.3.

condensers even if they have the same nominal capacity. The resistance values are best found by trial and error, until the values required to bring the potentiometer back to the zero position are obtained.

In the case of the writer's bridge, the $0.5 \mu\text{F}$ condenser was found to unbalance the potentiometer very nearly to its mechanical zero, so to save time, this position was marked as zero, and R_1 and R_2 were adjusted accordingly.

Components

It is necessary to use good condensers, preferably mica, whilst C_4 - C_7 should be chosen as near the same value as possible. The resistances may be of the carbon variety. S_1 and S_2 are the two leaves of a three position, two gang switch of the Yaxley variety. The potentiometers P_1 and P_2 should be of the wire-wound type, and smooth in action.

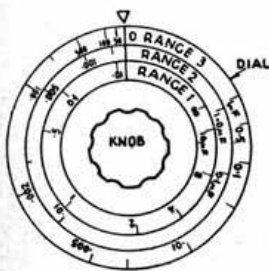


Fig. 2.
Potentiometer dial-marking.

THE RADIO BRAINS TRUST REPLIES

WE publish below a further selection of replies given by members of the Radio Brains Trust at its first session on May 30, 1942.

Q.: Is it possible to obtain receiver selectivity with quality when the system of Frequency Modulation is employed? (Submitted by D. Werschker, GSWR.)

A.: It can be proved mathematically that the transmission of a single audio frequency signal, by means of frequency modulation, produces an infinite series of sidebands. If any benefit is to be derived from the use of frequency modulation, a greater radio-frequency spectrum will be required than if the same programme is transmitted using amplitude modulation. It is for this reason that such transmissions are generally made in the ultra-high frequency bands.

If the frequency modulation receiver were to be made too selective to receive this wide range of sidebands, the resulting quality would necessarily deteriorate. It can thus be said that a simultaneous improvement in quality and selectivity cannot be obtained by the use of frequency modulation. It should be realised, however, that an amplitude modulated transmission will not be received very readily by a well designed frequency modulation receiver, so that the preceding remarks can be held to apply only to selectivity as between two frequency-modulated transmissions.

Q.: What is Magnetostriction? Are the principles used extensively to-day? (Submitted by R. C. Harris, 2BAB.)

A.: Magnetostriction is an effect noticed to a varying degree in most ferrous metals. When a piece of iron is magnetised its length changes very slightly. The change in length depends upon the degree of magnetisation.

Magnetostriction is sometimes a disadvantage but it can be turned to useful account in some applications. Magnetostriction oscillators have been constructed for frequency control in a similar manner to electrically driven tuning forks. A steel bar is constructed with suitable dimensions to have a mechanical resonance at the frequency required. A valve circuit is made to magnetise the rod, which slightly changes its size due to the magnetostrictive effect. This in turn causes a small e.m.f. to be induced in another coil which can be fed back into the valve circuit and so maintain oscillation.

Magnetostrictive transmitters are also used as sources of high frequency, under-water, sound waves in echo-depth sounding devices. The small movements of a steel structure, due to A.C. magnetisation, cause sound waves to be propagated from a ship through the water to the sea bottom from which they are reflected back to the ship, where a similar device is used to reconvert the vibrations back into weak alternating currents. The time between the transmitted and received impulses can be interpreted in terms of the distance to the bottom.

The audible noise developed by transformer cores provides an example of the disadvantageous effect of magnetostriction. Even when firmly, mechanically clamped, small changes in dimensions, due to magnetostriction, can cause appreciable sound radiations at audible frequencies.

Calibration

The bridge is calibrated by connecting condensers of known value across the "x" terminals and marking the point of balance on the appropriate scale of P_1 (Fig. 2). The accuracy of the bridge is, of course, dependent on the accuracy to which the values of the test condensers are known, and the care with which the balance points are marked.

Operation

Having connected an oscillator (or H.F. buzzer) to the appropriate terminals, the condenser to be measured is placed across the "x" terminals and the bridge balanced. The value is then read straight off the appropriate scale of the potentiometer. It will be found necessary to rotate P_1 and P_2 alternately in order to obtain the exact balance point.

The bridge described has been found very useful at the writer's station, and the fact that it is of the direct reading type obviates the necessity for calculation, thereby making the measurement of doubtful condensers a very simple process.

How Was It Done?

One of the questions set to the Radio Brains Trust read:—
"A member who is training Air Cadets asks whether the world record speed of over 75 words per minute set up by Ted McElroy was achieved by using specially abbreviated Morse characters or international Morse."

As the question appeared to stump the Brains Trust and because it has interested a number of members we have endeavoured to correlate information concerning the contest which established Ted McElroy as World Champion.

From *Radio and Television* dated December, 1939, we learn on the authority of L. R. McDonald, WSCW (who was runner-up with a speed of 75 w.p.m.), that "we used a Creed type transmitter and upon testing it out with a test tape found the relay out of adjustment. It was finally adjusted to our satisfaction but caused a certain amount of trouble during the contest."

Radio News dated November, 1939, carried an eye-witness story from J. W. Harrison, W4FSE, who wrote:—"The Code Machine had been adjusted to deal out high speed, the judges made sure that the tapes were intact as received from the F.C.C. office in Boston."

As far as we have been able to discover no reference has appeared in print to the nature of the material transmitted, the duration of the test, or the duration of Ted McElroy's personal effort in copying at 75.2 w.p.m., but it is highly probable that a photographic reproduction of the champion's copy appeared in amateur publications.

As tapes prepared by F.C.C. were used it seems certain that international Morse characters were used for the contest.

The record was established at the Second Annual "Hamfest" of the Asheville Amateur Radio Club held in Asheville, North Carolina, U.S.A., on July 2, 1939.

Both McElroy and McDonald were students of the late Walter Candler whose system is well-known to many members. At the time of the contest the Candler System Co. was located at Asheville. The address of the Company is now Box 928, Denver, Colorado, and the London office is at 121 Kingsway, W.C.2.

The British Institute of Radio Engineers

London Section meetings will be held at 21 Tophill Street, London, S.W.1, on Saturday, September 26, at 3 p.m., and on Friday, October 23, at 6.30 p.m. At the former meeting Dr. J. Robinson, M.I.E.E., will deliver a paper entitled "Modulation." Mr. L. H. Bedford, M.A., will lecture on "Time Bases" at the October meeting. Society members are cordially invited to attend on both occasions.

The Institute's Graduateship Examination will be held on November 20 and 21 in principal centres throughout Great Britain and in Cairo, Bombay and Madras. In addition to the President's and L.R.C. prizes, a medal has been offered by Vice-Admiral the Lord Louis Mountbatten, G.C.V.O., D.S.O., A.D.C., M.Brit.I.R.E., A.M.I.E.E., R.N. (Vice-President of the Institution). This medal is awarded to the candidate who has proved himself the best candidate amongst those in the Royal Navy, Army or Air Force who have presented themselves for Graduateship Examinations of the Institution held during the year.



IS YOUR SUBSCRIPTION DUE?

PROMPT PAYMENT ASSISTS HEADQUARTERS

ISLAND BLUE

● F./Lt. Jack Hum, **G5UM**, writing from an R.A.F. station near Dunfermline, reports having met several hams during recent duty tours. **G3ZK** (who was with him in TF) and **5HM** are Sergeants at stations within his territory. **VE4AGZ** is one of his unit Signals Officers, **GM4HB** and **VE1LY** (a keen R.S.G.B. member) are at Command H.Q. **VE3FR** is C.O. of a very isolated unit in the North of GM. **VE4NU** was met on a boat coming away from an outlying island which was about the last place where one would expect to meet a member of the fraternity. Jack has also had several contacts with U.S. Army officers including **W1LYG** and **8EYU**. His usual approach when meeting a S.O. for the first time is to ask him what his radio background was in "Clivvy street." If he has been a ham he invariably mentions the fact.

● From *The Daily Telegraph* we learn that Cpl. Ted Wake, **G5RP**, has been reported missing. His parents received a cable from him dated February 19, whilst serving in or around Java, since when no other news has come to hand. Ted was a member of the R.A.F.C.W.R. and was one of the original members of No. 1 S.D. before going overseas. His parents who live at The Old Gaol House, Abingdon, Berks, would welcome news from any member in a position to give it.

● Ft./Lt. John Curnow, **G6CW**, has advised by cable that he is now stationed in Iraq. An earlier letter carrying VU stamps, but presumably written from a country other than India, brought the news that until his recent move he was in frequent touch with another Notting-ham Ft./Lt. Stan Henton, **G5VU**. They have met **SU1WM** and many other amateurs.

● After a spell of duty at various stations in North and South Wales, Cpl. H. F. Collard, **2CVA**, has landed up at W.D. where he is seeking ham contacts. Whilst in GW he met Bill Rees, **GW3CR**, W. F. Holdaway, **2CWF** (a civilian working for the A.M.), and a pre-war member of the Ilford R.S., P./O. Ted Williams, **2XC**, and Ft./Sgt. Gould, **2FQH**. **2CVA** would like to hear from any South African amateur now in the U.K.

● Pte. Fred Wingfield, **G3CX**, writing from a General Hospital in the Middle East reports having met **G2PA**, **3LK**, **3NX**, **3SS**, **5YC**, **8BA** and **2FQZ**. He says that **3LK** is attempting to organise a Ham Convention. Fred gives no explanation for his presence in a military hospital, but presumably there is nothing seriously wrong as he writes in his usual cheerful vein. Ham conversations, he tells us, centre around the status of amateurs after the war. All of his associates feel that high power permits should be issued to old stagers, but a technical examination should be held to ensure that a satisfactory standard is reached. They favour the introduction of a probationary C.W. period for newcomers.

● James McNab, **2CQI**, now stationed with the R. Signals near Bury St. Edmunds, informs us that the "Bachelors All" gang has been dispersed. **G8PP** is in Scotland, **GMSMQ** in Wales, **2DJV** in Somerset, while **8CK**, **2RD**, **8JI** and **2FWX** are near Swindon.

● From the parents of R. M. Strickland, **2CBQ**, whose home is in Sheffield, we learn that on three occasions recently he lost all his belongings as the result of sinkings.

● From Ismailia comes news of "Early Bird," L.A.C. Harry Willets, **2FPI**, who mentions that another of the old A.S.F. gang, J. Raven, **G3HG**, was "in town" recently. He had just come in from the desert and was hoping to stay put for a short while but is now back in the sandy wastes once again. He reports that L.A.C. Darvill, **3856**, had a narrow escape when he "got across" 6,000 volts. Fortunately the contact was on his thigh, so he escaped with burns and a severe shaking. A very lucky lad! Harry wishes to be remembered to all "Early Birds," and especially to Les Coupland who he congratulates on his marriage.

● A.C.2 K. A. Day, **4832**, seeks news of his brother, 2nd Lt. F. E. Day, who was serving with the 30th H.A.A. Battery, 3rd Regiment, when Singapore fell. Information to 64 Skinner's Lane, Ashted, Surrey, please.

● Sympathies are extended to Mr. G. H. Jolliffe, **VS7GJ**, of Ceylon, whose son, 2nd Lt. George Jolliffe, Gurkha Rifles, was killed in action during February.

● B. H. Rowell, **G5RL**, of St. Ives (recently promoted to Corporal) would be glad to meet members passing through No. 10 O.T.C. He can be contacted via S.H.Q. Signals. **G5RL** informs us that Capt. F. J. Mustill, **XZ2DY**, R.Sigs., late of Burma, has arrived safely in India.

● H. N. Gant, **3759**, was fortunate to escape when H.M.S. "Edinburgh" was sunk, but he lost all his belongings including his valued collection of notes and cuttings. Particularly he feels the loss of the whole series of "Radio Data Sheets" published by *Electronic Engineering*. He asks whether any member possessing these data sheets would loan them to him for copying. His home address is 50 St. Catherine's Road, Winchester.

● Ft./Lt. Frank Adams, **G2YN**, Upper Croft, Thruxton, near Andover (Phone: Andover 2321), would be glad to meet any amateur serving in the Salisbury Plain or N.W. Hants area. It is hoped to arrange a representative meeting shortly.

● Mrs. Nisbet, mother of Cpl. Nisbet, **GM3SW**, R.A.F., informs

us that her son lost his kit, including all his radio books, at Sumatra. He is now in Peshawar, after a period of rest in Karachi. Letters should be addressed to him c/o 35 Malcolm Street, Dunfermline, Scotland.

● From R.A.F.H.Q. in the M.E. comes news of our "Index Compiler," Cpl. Reg. Griffin, **G5UH**. At the time of writing (date April) he had just reached SU, but he expected to be posted to a Squadron almost at once. Reg. spent some time in ZS before travelling north, but as he reports no ham contacts we presume he was unlucky in that respect.

● A letter from Cpl. S. C. Geddes, **G3RI** (R.A.O.C.), brings news of Wilton Persson, **SM5KP**, whose station was well known to many G's prior to the war. He is on radio work in the Swedish Army, and wishes to be remembered to all old friends. **G3RI** hopes to meet Cambridge members before he leaves that town.

● Friends of Cpl. D. W. Carr, **G8UC**, who has been a prisoner in Germany for some months, will be glad to hear that he has now received his first two P.O.W. Fund parcels. In acknowledging receipt he writes: "For this kind thought I thank you from the bottom of my heart. You really cannot appreciate how much these parcels mean to us prisoners."

● Capt. C. D. Walkington, **BERS255**, whose address in West Africa can be obtained from H.O., is anxious to obtain a battery model short wave receiver giving about 6 watts output. In lieu of a receiver he would appreciate a reliable circuit covering 13-100 metres. Any offers?

● N. F. Young, **G8VM**, of 2 Aubrey Road, Crouch End, N.8, who expects to finish his flying training somewhere abroad, wishes to be remembered to his friends in Districts 12 and 15 and promises to furnish an overseas address at an early date.

● Mrs. Briscoe, **BR3484**, reports via **G6SO**, that her husband **G8KU** writes as cheerfully as ever from Germany, where he is a prisoner of war. His full address is Telegraphist P. B. Briscoe, British P.O.W. 448, Marlag Und Milag Nord, Wehrkreis, Germany. Having, at last, received his address **G8TL** is arranging for him to receive monthly P.O.W. Fund parcels.

● W./Cdr. Rowley Scott-Farnie, **GW5FI**, recently returned to England from Cairo by air, bringing news of **G2LC**, **5BR**, **5HI**, **5VU**, **5ZJ**, **6CW**, **SU1WM** and many other well-known amateurs now in the M.E. He returned at the end of July.

● Members serving in the Middle East are asked to get in touch with Mr. W. E. Marsh, **SU1WM**, 3, Rue Kattini, Tanta, Egypt, who hopes to arrange a convention in Egypt later in the year.

● Lt. G. Haworth, **G5XC** (R.A.O.C.), who is on a Wireless Maintenance Officers' Course in Derbyshire, has Capt. Reagh, **VE4OG**, with him. Whilst at Base Ordnance Workshops in Scotland, he met Lt. Collins, **G8SC**. He sends 73 to all old friends.

● A.C.1 Mal Geddes, **G2SO**, reports that his brother Dick, **BR34023**, has been wounded in the leg by shrapnel and is now in hospital somewhere in the M.E. Quick recovery, O.M. Mal has just discovered that his C.O. is **G2UP**.

● Under date of July 7, P.O. H. G. Cunningham, D.S.M., R.N. (ex **G5CI**), wrote to report the arrival of his first two P.O.W. parcels, containing cigarettes and books. He wishes to be remembered to all old friends.

LINCOLNSHIRE MEETING

For the special benefit of the large number of members and other amateurs serving in Lincolnshire and neighbouring counties, arrangements have been made to hold a

PROVINCIAL DISTRICT MEETING

at

The Saracen's Head, LINCOLN

on

Sunday, August 23, 1942. Commence 3 p.m.

Reservations to Dr. Arthur Gee, **G2UK**, Stonehaven, Horncastle Road, Boston.

Charge 2s. 6d. a head.

● Hold tight, you DXCC wallahs—Harry Baker, **BERS451**, who was recently reported as having taken over at AC4YN when Reg Fox went sick, is now Wireless Officer at The Residency, Gangtok, Sikkim. Unless we are much mistaken Sikkim is in the most elusive of all DX zones! Baker's letter also brought the good news that Reg is now out of hospital and back at Lhasa. An earlier reference to him being in Bombay was incorrect. He asks whether any news has been received recently from the operator of that other elusive DX station—Andrew Young, **VR6AY** (Pitea)?

● From Advanced A.H.Q., Levant, comes news of Ft./Lt. Stan Henton, **GSVC**, who reports fit and well. He asks that his 73 be passed to all old friends.

● From Calcutta comes the first news for some time of Capt. J. G. McIntosh, **VU2LJ**, one time B.E.R.U. Representative for India, and a well-known DX worker. Mac is serving with the 6th Rajputana Rifles, but he hopes to obtain a transfer to R. Signals. He has met a few amateurs in recent months, including **XZ2EM**, **VU2AM**, **VU2BG** and **VU2FS**. He recently had the novel experience of hearing his old transmitter on the air. Although taken over by the Government at the beginning of the war, Mac used it for local Service schedules until he joined up.

Very Much Alive

Due to a misunderstanding, a note appeared in the last issue of THE BULLETIN to the effect that John C. Barron, Radio Officer, M.N., **GM4MG**, had been reported "missing, presumed killed." We are most happy to report that John is very much alive, and in accordance with his request his name again appears on the mailing list!

Royal Society of Arts

The Council of the Royal Society of Arts offer a prize of £50 to any person of British or Allied Nationality who may bring to their notice an invention, publication, diagram, etc., which in the opinion of the judges is considered to be an advancement in the Science or Practice of Navigation, proposed or invented by himself in the period January 1, 1937, to December 31, 1942.

Competitors must forward their proofs of claim, between October 1 and December 31, 1942, to the Acting Secretary, Royal Society of Arts, John Adam Street, Adelphi, London, W.C.2.

The Council of the Royal Society of Arts, as Trustees of the Thomas Gray Memorial Trust, are desirous of recognising the remarkable skill which is constantly being displayed at sea during the present struggle. They have, therefore, decided to offer an award of £50 to any member of the British Merchant Navy for any deed brought to their notice which, in the opinion of the judges to be appointed by the Council, is of outstanding professional merit. The period to be covered by the offer will be the year ending September 30, 1942, and the judges will proceed to consider their decision on or after January 31, 1943. Deeds of the type to be considered in connection with this offer may be brought to the notice of the Council by any person not later than December 31, 1942. They will not, however, be considered by the judges unless they have been endorsed by a recognised authority or responsible person able to testify to the deed to be adjudged.



KHAKI AND BLUE AT PRESTATYN

The Services were well represented at the North Wales P.D.M. held in Prestatyn on June 21. Front row (left to right) **VK3JQ**, **BR54040**, **G6CL**, **ZL2RI**, **G8JV**, **GW3CF**. Back row (left to right) **BR54444**, **3044**, —, **1060**, **G2WVR**, **6HQ**.

**MENTION THIS JOURNAL WHEN
WRITING TO OUR ADVERTISERS.
— THANKS. —**

MEMBERS ON ACTIVE SERVICE

Thirty-fifth List

WE publish below our thirty-fifth list of members on Active Service. Additional details and corrections should be advised to Headquarters as early as possible. The present list contains information received up to July 29, 1942.

Rank and Name	Regiment or Branch of Service	Pre-war Call or B.E.S.
Pte. G. R. Banks	R.A.O.C. ..	5283
Sig. J. Black	R. Sigs. ..	5204
A.C.2 W. H. Bland	R.A.F. ..	5262
Cpl. J. Bradbury	" ..	5201
L.A.C. F. P. Bramley	" ..	2FMX
Cpl. K. Bunston	R. Sigs. ..	5254
A.C.1 C. L. Chappell	R.A.F. ..	5272
Pte. W. H. Cherry	R.A.O.C. ..	5260
P.O. Tel. G. G. Childs	R.N. ..	5286
Cpl. R. A. Clarke	R.A.F. ..	6410
Cpl. R. H. Clifton	" ..	5243
Sig. J. W. C. Cropper	R. Sigs. ..	63BY
Sig. D. Croxson	" ..	5271
Cpl. A. D. S. Cullis	R.A.F. ..	5267
A.C.1 G. M. Denison	" ..	4447
Cpl. T. W. Draycott	" ..	5245
Lt. E. G. Ewing	R.N.V.R. ..	68MO
Pte. R. J. Forbes	R.A.O.C. ..	5252
S. Sgt. F. J. Galpin	" ..	5232
A.C.2 W. Girvan	R.A.F. ..	2FVV
A.C.1 L. Hainin	" ..	5199
F./Sgt. H. F. Hambleton	" ..	5216
A.C.1 W. H. Hambleton	" ..	5228
Sig. A. A. Hammond	R. Sigs. ..	66AH
O./Seaman L. J. Harper	R.N. ..	5227
A.C.2 C. R. Heath	R.A.F. ..	3822
Cpl. H. Hipple	" ..	5276
A.C.1 R. I. Holburn	" ..	5207
Sgt. E. C. Ibbotson	" ..	5212
F./Sgt. W. Inglis	" ..	5244
A.C.1 F. M. Jackson	" ..	5280
Lt. J. L. T. Jackson	R.N.V.R. ..	5285
Sig. C. E. Jefferies	R. Sigs. ..	65JF
Capt. B. A. Lane	2BLP ..	5219
Ldg. W. T. Meech, E. J. Long	R.N. ..	5278
Cpl. K. C. J. Madgett	R.A.F. ..	5231
Ldg. Seaman W. A. Masters	R.N. ..	5213
Pte. R. A. Mills	R.A.O.C. ..	4219
Cpl. R. V. Nordon	R.A.F. ..	5282
L.A.C. G. W. Parker	" ..	5210
Sig. G. W. Parkes	R. Sigs. ..	63XL
Lt. R. A. S. Platt	R.N. ..	5253
A.C.2 F. W. Porteous	R.A.F. ..	5284
Sig. B. Ratcliffe	R. Sigs. ..	4795
Sgt. P. R. K. Rouse	R.A.M.C. ..	5221
Pte. S. P. Shackelford	R.A.O.C. ..	2HAX
Sgt. D. J. Sole	R. Sigs. ..	5202
Radio/Mech. H. Soulsby	R.N.A.S. ..	5275
2nd/Lt. G. W. D. Spurrell	R. Norfolk ..	5205
A.C.1 C. W. Stacey	R.A.F. ..	5249
Pte. G. M. Stitcher	R.A.O.C. ..	5220
Ldg. W. T. Meech, E. A. J. Steward	R.N. ..	5277
Lt. F. Taylor	R.E. ..	5265
Cpl. J. Taylor	R.A.F. ..	5270
Cpl. F. J. Thorn	" ..	5281
A.C.1 R. Trevitt	" ..	5268
L.A.C. G. E. Tumber	" ..	5200
L.A.C. A. R. Watson	" ..	5274
L./Cpl. W. A. Weatherley	R. Sigs. ..	5200
Sig. J. V. Wild	" ..	63WG
P.O. Tel. L. E. Wileman	R.N. ..	5230
Sgt. J. J. Williamson	R.A.F. ..	5229
L.A.C. D. Wilson	" ..	5230
2nd/Lieut. J. B. Wilson	R.A.O.C. ..	2AOW
L.A.C. F. Witts	R.A.F. ..	5226
Cpl. G. S. Wood	" ..	2DNZ
L.A.C. F. H. Worker	" ..	5234

73.

G3CX (Rose Cottage, Old Heathfield, now with M.E.F.), to **G2AO 2AX**, **PA**, **3AT**, **GB**, **4FV**, **5IH**, **JZ**, **6GO**, **GW5KJ** and **5OC**.

G4FN to **G2IZ**, **YH**, **3GF**, **GW**, **4AK** and **5IL**.

2AKK (R.A.F.), to **G2HW**, **TM**, **4CJ**, **FD**, **JS**, **8FI** and Blackburn friends.

3583 (R.A.F.) to **G3NR**, **5RD**, **6GR** and **8CK**.

3825 (R.A.F.) to **G3CQ**, **8BQ**, **NM**, **2CUB**, **DBM**, **HGQ**.

3880 (Louth) to **G2UK**, **2XS**, **2XV**, **5UF**, **6ZF** and all old friends in Districts 9 and 17.

Prisoners of War Fund

DONATIONS.—The General Secretary acknowledges with thanks on behalf of Council, receipt of donations from:—C. S. Wood, 2DNZ, 5s.; J. W. Mavis, ZE1JE, 7s. 6d.; J. Cairns, G3UC, 5s.; Edgware Society per G4KD, £2 2s.; E. F. Watson, 2AGS, 6s. 6d.; E. A. Lever, 2CVD, £1 1s.; D. McInnes, BR509, 5s.; G. C. Eyre, G80J, 5s.; Northern Ireland per G15X, 12s. 6d.; W. G. Sherratt, G5TZ, £5 5s.; I. Hennell, 2HJP, 15s.; Anon, £1 5s.; 56 Mr. Propagation Group, Egypt, per R. Distech, SU1RD, £5; F. W. Garnett, G6XU, £2 2s.; District 7 per G2DP, 10s. 6d.; H. Mackay 5029, 7s. 3d.; E. S. Elliott, 3341 (one time G5LT), 10s.; District 5 per G6RB, £1 10s.; E. G. Finch 2755, 10s.; J. Wright, 4552, 2s. 6d.; A. Taylor, G8TZ, 3s. 6d.; M. Farquharson for G3MF, 10s.; A. R. Yates, G3LB, 5s.; W. C. G. M. R. Scott-Farnie, GW5FI, £1 1s.; District 13 per G2GZ, 10s.; H. Binns, G8TF, 10s.; Previously acknowledged £350 9s. 8d. Total to date, £377 9s. 8d.

THANKS.—Are extended to Mr. W. O. Wright, G6FQ whose bid of £10 secured Bulletin Offer No. 2, announced in our last issue. The P.O.W. Fund has benefited by Mr. Wright's generosity. The other collection offered is still available.

In forwarding to the fund a cheque for £5 5s., Mr. W. Gearing Sherratt, G5TZ, of Newport, I.O.W., wrote: "Enclosed is the result of electricity saved by not cluttering up the air with 40-metre Sunday fone!"

BOOKS.—Mr. C. H. Edwards, G8TL, "Speedways," St. Bartholomews Lane, Sudbury, Suffolk, acknowledges with thanks, the receipt of parcels of books from G2UK, 88C, 2FJR and BR5831. Further gifts of books will be warmly appreciated.

Congrats

● To Bill Craig, GM6JJ, and Ben Wallich, G6BW, who have recently been promoted to the rank of Squadron Leader. Bill is now in his native land, whilst Ben has been posted to Fighter Command. The latter would be glad to hear from any member living in the Stanmore-Bushey area who can recommend a suitable civilian billet. Letters via H.Q.

● To C.P.O. Tel. Hedley Punch and Mrs. Punch on the arrival of Christopher Hedley at 22.15 hours, July 10.

Strays

● His friends in the Tyneside area, and elsewhere, will be interested to hear that Mr. W. Smith, G5WZ, left England on July 24, for service abroad. His ultimate destination was not known when he sailed. G5WZ asked that his 73 be conveyed to all who know him.

● Friends of L. P. Zimmerman, G8NB, will be sorry to learn that he is at present in hospital with a damaged lung brought about as a result of enemy action. He will be glad to receive visitors or letters at King George V Sanatorium, Milford, Godalming, Surrey.

AIR TRAINING CORPS

Third List

THE following members are serving in the R.A.F.V.R. (Training Branch) or as Civilian A.T.C. Instructors. Additions or corrections to this list or to the previous lists published in the July and October, 1941, issues of THE BULLETIN, should be communicated to Headquarters.

Squadron No. and Name	Name	Call or BRS
11 Brooklands ..	R. J. Denny ..	G6NK
35 Edinburgh ..	P./O. G. Bissett* ..	4450
66 Croydon ..	P./O. H. Stopher* ..	G5GF
85 Southgate ..	P./O. S. Howard ..	G8TY†
173 Orpington ..	E. F. Gadsden ..	4690
244 Manchester ..	F./Lt. C. M. Denny* ..	G6DN
262 Ipswich ..	P./O. A. G. Wood* ..	G6TI
296 Stoke Newington ..	P./O. R. C. Harris* ..	2BAB†
393 Finchley ..	F./O. S. C. Ash* ..	G6OV
558 Llandudno ..	P./O. R. G. Norman* ..	ex G5DP†
738 Middlesbrough ..	P./O. K. A. Sowerby ..	2DMY
1066 Hitchin ..	P./O. E. Johnson* ..	G2HR†
1137 E. Belfast ..	S. J. Mitchell ..	4196
" ..	P./O. F. A. Robb* ..	G16TK†
1155 Cheshunt ..	F./O. H. T. McFarlane* ..	G8SK†
1281 City of London ..	F./O. P. R. Solder ..	G5FA†
" ..	L. T. Mantion ..	G3UH
1288 Enfield ..	P./O. T. Vickery* ..	G5VY†
1355 Hackney ..	J. L. De Leeuw ..	2BDX
Burton-on-Trent ..	F. R. Joyce ..	3831
Reading ..	B. W. P. Mainprize ..	G5MP
Romford ..	R. C. Giles ..	2HLX

* Denotes commissioned R.A.F.V.R. (Training Branch).

† Denotes previously recorded as Civilian Instructor.

HAM RADIO CROSSWORD—No. 1
NEW SERIES

Solution to Last Month's Puzzle

TRIBUTE TO
THE LATE MR. E. J. SIMMONDS, G2OD

The death on July 7 of Mr. E. J. Simmonds, G2OD, deprived the Society of a member who for over 20 years had given of his best in advancing the science of Amateur Radio. No new development in the field of radio communication escaped his attention, and it was largely due to his patience and persistence during the early "twenties" that the superonic receiver, the master oscillator, and later the crystal oscillator controlled transmitter eventually reached a high state of efficiency for short wave amateur work.

One of his greatest friends, Mr. Gerald Marcuse (Past President), G2NM, writes:—

"Few amateurs knew and understood him as I did, and since the earliest 440 metres days we worked closely together. He was a brilliant man in every respect and a talented musician. We often enjoyed his piano and organ recitals which he used to broadcast. G2OD was one of the pioneers of amateur radio and did his fair share of first two-way communications both on morse and telephony, always on low power.

"Those of us who knew him and were fortunate enough to have worked with him will realise what his loss means, not only to the amateur movement, but to scientific development generally."

Mr. H. Bevan Swift, G2TI, another Past President, recalls that Mr. Simmonds established his first station at Acton in 1912. His outstanding work, however, took place from Gerrards Cross where he was in business after the last war. It was from G2OD that the first contact was established between Great Britain and Canada. Many members will remember his morning schedule with 1BQ Halifax, Nova Scotia. In October, 1924, he received a cable from New Zealand informing him that his signals were being heard in that country on 95 metres. He was thus the first British amateur to transmit successfully to the Antipodes. A month later he established the first two-way contact with Australia. In the following year he added Mexico to his growing list of "first contacts" and shortly afterwards made the first telephony contact with Australia. His early work as an officer of the Society is well known to many members. He served on the Council for a number of years and was Hon. Treasurer in 1924 and 1925. He was elected a Vice-President in 1926.

He frequently lectured before the Society and it was at one of his early lectures that he described and demonstrated the principles of the super-heterodyne for short wave reception. In more recent years he concentrated on V.H.F. problems, his station playing a prominent part in 56 Mc/s Field Days prior to the war. His sound knowledge of theory was only excelled by his outstanding ability to produce high precision equipment.

Mr. Simmonds was a Fellow of the Royal Society of Arts and a Member of the Institute of Radio Engineers.

All who came into contact with him will remember his quiet and earnest manner, and his great interest in the Society and all that it stands for.

His passing will be mourned by radio amateurs throughout the world.

J. C.

BRITISH ISLES NOTES AND NEWS

DISTRICT 1 (North Western)

D.R.: H. W. Stacey (G6CX), "Sandless," Edisbury Road, West Kirby, Cheshire. Hoyaake 337.

It is hoped to arrange a P.D.M. in Chester on September 20. Full details will be published next month. Meanwhile, please book the date now. A post card to the D.R. would be appreciated.

Whitehaven.—Best wishes are offered to G6ZT, who joined the R. Sigs. on August 1. As his reports will be missed, it is hoped that some other member will carry on the good work done by him so well. He desires to express his thanks to all who helped to make his sojourn in the locality such a pleasant one.

Barrow and District.—2BHJ has put 3593 in touch with a number of members and there has been a meeting between 2BMU, 2BHJ and 3593. It is understood that G3PZ is also in the neighbourhood and he, too, will receive a cordial welcome if he joins this little group. 2BHJ's address is "Fairfield," Pennington, Ulverston.

Bolton.—A letter from 2FPI reports his intention of emulating his colleague G5Y and of claiming the second WAC in beer-bottle labels! 4795 has recently been home on leave from the "Farmyard." The next meeting will be held on September 6 at 32 Bromwich Street at 2.30 p.m. Via 2DVQ.

Ashton-U-Lyne.—The D.R. is glad to have a report from G5PX of "Moston," 8 Hutton Avenue, and hopes there will be more to follow. Fifteen members of the local Society are now R.S.G.B. members. G5PX and 3PM spend much of their time on A.T.C. work. 4567 is with the Home Guard, but finds time to indulge his fancy for the V.H.F.'s. 6DV has taken up work of national importance for the duration. 2HAP is building a super-super complete with crystal gate. 5043 and 4609 are also building receivers on the lines of the American "Silver Super." 4681 is occupied with radio full time, but manages to interest himself in spare-time radio as a change from his work! 3BY, who entered the Services at the end of July has recently added to his gear a four range V.T. volt meter, a 100 kc/s. oscillator with multi-vibrator, and a resistance coupled super. for the V.H.F.'s.

The local Society is soon to possess a D.C.-A.C. converter which will remove the disadvantage of being on a D.C. supply. This fact has so far prevented members from demonstrating their gear.

DISTRICT 2 (North Eastern)

Acting D.R.: A. O. Milne (G2MT), 1 Kent Drive, Harrogate, Yorks.

A welcome letter from 3MY brings news of several Sheffield members. 3RP is now with the Ferranti Co. whilst 3RZ and 3MY are at Sheffield University. All three recently visited 2MF who has taken up photography as a war-time hobby. 3MY mentions that 3RP, 3RZ and himself obtained their "full tickets" at the age of 16, whilst still at school. As they were all at the same school together, this must be something of a record. G2MT is back in harness again after six weeks' sick leave, otherwise there is no news from Yorkshire. G2MT.

DISTRICT 3 (West Midlands)

D.R.: V. M. Desmond (G5YM), The Chestnuts, Hanley Castle, Works. Hanley Swan 41. Scribe: E. J. Wilson (2FDR), 48 Westbourne Road, Olton, Birmingham, 27.

Birmingham.—At the meeting of M.A.R.S., held at the "Hope & Anchor," on Tuesday, July 14, Mr. C. Young, G2AK, delivered an interesting lecture on multi-range measuring instruments, and gave some suggestions for making up a universal multi-range instrument. Sixteen members were present.

It is expected that the Annual General Meeting of M.A.R.S. will be held at 11 a.m., on Sunday, September 13, 1942, at the "Hope & Anchor." 2FDR.

DISTRICT 4 (East Midlands)

Deputy D.R.: W. M. Vandy (G6VD), 9 Cecilia Road, Clarendon Park, Leicester.

Mansfield.—G4DS and 8XS have started a "round the Services" letter, which will circulate monthly and then be sent to the Deputy D.R., to enable him to make references in these notes. G3FR, 3WK, 8UZ and 8GO are asked to communicate with 8XS in connection with this project.

Nottingham.—Only six members were present at the last meeting when after a discussion, 2AOO's paraphase amplifier and Class "B" modulator were demonstrated. The next meeting will be held at G8DZ, 14 Epperstone Road, West Bridgford, at 6.30 p.m. on August 30. Members should keep an eye on the Nottingham Evening Post wireless column on Monday evenings for further notes.

Derby.—G2OU who is building a multi-range meter recently had a visit from 2CVV, home on leave. 8S1 has met several hams "up north" including 61M. (What about a few lines, O.M.?—6VD).

Leicester.—A rather crowded meeting was held at 6VD last month. We hope the attendance will be at least as good next time. Suggestions for future meetings will be welcomed. G6VD.

DISTRICT 5 (Western)

D.R.: R. A. Bartlett (G6RB), 31 King's Drive, Bishopston, Bristol. Bristol 46960.

Bristol.—The attendance at the July meeting was an improvement, but we should like to see still more at the August meeting to be held on the 23rd. A hearty invitation is extended to all members who happen to be in the locality.

Apologies are offered to Service members who scan these notes for District news. There isn't any, or if there is the T.R.s have failed to send it on. G6RB.

DISTRICT 6 (South Western)

D.R.: W. B. Sydenham, B.Sc. (G5SY), "Sherrington," Cleveland Road, Torquay. Torquay 2097.

The D.R. acknowledges with thanks reports from Plymouth and North Devon.

Plymouth.—The now scattered local group will be interested to hear that 3464 was recently married. 3547 after a spot of leave has now been transferred to District 14 where he is assured of a warm welcome.

2FKO, although still busy, has found time to construct a C. & R. Bridge, a double I.F. superhet, and a V.T. Voltmeter. The latter, which appears to be a very interesting instrument, employs a MHL4 in a bridge circuit with a 0-1 milliammeter and has six ranges, the lowest being 0-1 volt and the highest 0-300. The input resistance, even on the 1-volt range, is about 9 megohms. The instrument normally measures D.C., or, with a diode at the end of a lead, peak A.C. This certainly looks promising material for a BULLETIN article. (Agreed.—Editor.)

3TX reports some interesting contacts with ON4FT, and mentions that he has installed a lathe in his shack.

North Devon.—G8US, who has been home on leave again, is looking very fit, and now sports a couple of stripes. An airgraph from 3AM gave the news that he, too, is quite well. As his part of the M.E. has been quiet he has been making good use of his sketch book. Remember his caricatures of N.F.D.?

Those who have met H. E. Bennett, 8PF, are glad to note he is now a P.O. and has been Mentioned in Despatches.

Torquay.—The only matters of importance to report, apart from the usual routine, are visits to the town by G6LL and G3JD. "LL spent a week's leave with the D.R., and old hands will be able, without difficulty, to imagine that much swapping of tales took place. A most enjoyable week! 3JD's visit was a short and unexpected pleasure. His many friends will be glad to know that he looks very fit indeed—and is as cheerful as ever! G5SY.

DISTRICT 7 (Southern)

D.R.: W. E. Russell (G5WP), "Milestones," Mayford, Woking, Surrey. Woking 1589.

Bournemouth.—BRS4694 is now enjoying life at No. 1 S.S. 2HMX recently spent a well-earned holiday at home. The T.R. urgently needs notes. (Via 2HNO.)

Croydon.—The June meeting, held at 5BT, was attended by 2DP, 2LW, 2VB, 3FK, 4NI, 5BT, 6NF, 2FWA, 1545, 3003, 4324, 4584, 4603, 5159. 6NF was cordially welcomed and several interesting topics were discussed with him. We hope something comes of the discussion. Sgt. Robinson, 5159, from West Hartle-

Forthcoming Events

- | | |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| August 23 | District 13, 3 p.m., at G3DF, 30 Carninia Road, Balham (5 minutes from Balham Station). |
| August 23 | District 5, 3 p.m., at 6 Stapleton Road, Bristol. |
| August 23 | Provincial District Meeting, 3 p.m., at Saracens Head, Lincoln. |
| August 30 | District 4, 6.30 p.m., at G8DZ, 14 Epperstone Road, West Bridgford Nottingham. |
| August 30 | District 10, 3 p.m., at GWSUH, 39 Lady-smith Road, Cardiff. |
| August 30 | Scotland "A" District, 3 p.m., Room 149, Royal Technical College, George Street, Glasgow (entrance in Montrose Street). Lecture by E. Bradshaw, Esq., Ph.D., M.Sc., A.M.I.E.E., "The Cathode Ray Oscillograph." |
| Sept. 6 | District 7, 3 p.m., at G2DP, 6 Dunheved Close, Thornton Heath (near Pond). Telephone: Tho. 2849. |
| Sept. 20 | North Western P.D.M., Chester (details next month). |
| Sept. 26 | Radio Brains Trust Meeting, 2.30 p.m., at the Institution of Electrical Engineers, London, W.C.2. |

pool, was also welcomed. 4324 demonstrated his new amplifier by attempting to lay eggs! Lucky 3724 has had a holiday. See Forthcoming Events for date of September meeting.

(Via G2DP.)

Coulsdon.—Members will have read the good news in last month's issue that Sqd./Ldr. Wilkinson, G4HW, is safely back in this country. 2PL has been on holiday at his old QRA in Cambridge. 4458 has joined the H.G. Welcome to new member 5124.

(Via 3003.)

Guildford.—The "petrol drought" hit the July meeting at Guildford, consequently the attendance was poor. It was agreed that as the possibility of continuing the series of meetings was remote, members should try to meet at the I.E.E. 5CM and 2ZC have been on the sick list. 6GS is now reported to be in 2C6, whilst 6LK still seems to be chasing around SUL. 5WP has been talking "salvage" around the district with 10 watts (of audio) from his car. G5WP.

DISTRICT 9 (East Anglia)

D.R.: H. W. Sadler (G2XS), The Warren Farm, South Wootton, Kings Lynn, Norfolk. Castle Rising 233.

Gt. Yarmouth.—We are glad to note that Mr. Thompson, 2BXJ, of Gt. Yarmouth, has rejoined the Society and appreciate his letter giving news of many of our members whose homes are in or around that town. He tells us that G3RW is in Heliopolis. We understand that 5QO is occasionally in Yarmouth although we never hear from him. We wish him the best of luck. From Mr. Buck, 3821, we learn of the re-opening of local meetings, as reported in last month's issue. We hope that Service members will attend when duty permits. 3821 has finished a superhet and in an effort to start up the time-old argument again 4991 is thinking of making a "super-straight" with which to beat it!

Norwich.—G2MN has survived the various raids but unfortunately is now down with sciatica, due, we imagine, to living rather a sheltered life of late. 2MN reports a visit from 51X.

King's Lynn.—G2JS is back home again. We hope he is well on the way towards recovery from his long illness. 2XS has visited Mr. Lovell, 3765, of Swaffham, and was glad to see all the evidence of a complete post-war "ham"! Now then 5UD, where have you got to this time? G2XS.

DISTRICT 10 (South Wales and Monmouth)

Scribe: S. Howell (G5FN), 90 Coleridge Avenue, Penarth, Glam.

Due to a variety of reasons it has not yet been found possible to arrange a District Meeting. Any member with "bright ideas" for catering and accommodation should communicate with the District Scribe.

A local meeting will be held at GWSUH, 39 Ladysmith Road, Cardiff, on August 30.

W9EHQ is welcomed to the area as will be other amateurs if they "make their number." G5FN.

DISTRICT 11 (North Wales)

Deputy D.R.: C. Spillane (BRS1060), "Woodside," Meliden Road, Prestatyn.

The July meeting held at BRS4762 brought an attendance of 12, which included G6HQ, 2HCZ, 2HIY, BRS1060, 2731, 4027, 4414, 4762, 4516 (Liverpool) and 4884 (Birmingham) were welcomed as visitors. 4410 exhibited some new valves and 1060 displayed a NC81X, which he has recently obtained.

The next meeting will take place at BRS4762, "Vale View," Meliden Road, Prestatyn, on Sunday, August 23, at 3 p.m. All welcome.

GSDZ, whilst on holiday in Prestatyn, called on BRS1060, 2HIY and GW3CF. 2HIY has volunteered for radio duties in the R.A.F. and expects to leave during August. ZL2RI has moved off to a station near York. (QRA from BRS1060). Congrats. are extended to 3044 on his promotion to corporal.

4110 (R.C.S.) recently left Prestatyn but he is now back in another part of the District on a new job.

Members who took group photos at the P.D.M. are kindly asked to send prints of the best ones to the writer. BRS1060.

DISTRICT 13 (London South)

A.R.'s: L. H. Sherry (G2GZ), 41 Reverdy Road, S.E.1 (South Eastern); S. E. Langley (G3ST), 62 Dunbarton Road, S.W.2 (Central); E. H. Simmonds (G8QH), 17 Roedean Crescent, Roehampton, S.W.15, Prospect 1990 (Western).

South-Central and Eastern Areas.—Seventeen members attended and enjoyed the July meeting. Last month's notes re G5WG were incorrect due to a misunderstanding. He has been recommended for a Commission but has not yet taken it up although he has passed his technical tests. G2JB sends 73 to all. 3CI is now back from T.F. See "Forthcoming Events" for August arrangements. G2GZ and G3ST.

DISTRICT 14 (Eastern)

D.R.: R. L. Varney (G5RV), 184 Galleywood Road, Chelmsford, Essex. Chelmsford 3394.

Chelmsford.—The July meeting was attended by the "old faithfuls"—6LB, 5RV and BRS3650. 280 seems to have disappeared! 5HF took time off from work recently to fall out of

canoe into the Chelmer with full kit on! 5RV attended the wedding of P. O. "Tiny" Tremaine, 8PIB, and Sally, his YL on July 10. We join in wishing the happy pair all good fortune. 2KG writing from the M.E., still complains bitterly of the flies and heat! 2292 has rejoined the Society and is happy to have been re-allotted his old BRS number. He wonders what has happened to the East London gang and in particular, SAB, 8JM, 6AH, 6ID, 6UT, 5DY, 2BZK and BRS563. 2292's home QRA is still 12 Vicarage Road, Stratford. 2FSR, who is now stationed "somewhere in the Home Counties," miles from civilisation, asks whether the R.S.G.B. Philatelic Section still functions. (The answer is "Yes." G2MI, 1 Kent Drive, Harrogate, is the organiser and about 40 members contribute packets.—Ed.) He has recently heard "ham" QSO's between stations using LA, D4, HA, CT1, CT4, and HB prefixes on 7 Mc/s.

It is with deep regret that we record the death, at an early age after a short illness, of Esme, only daughter of Mr. and Mrs. H. A. Savage (G2SA), of Burnham, Essex. Esme will always be remembered, by those amateurs who were fortunate enough to experience the hospitality of her father's home, for her kindly and cheerful nature and her great interest in Amateur Radio. On behalf of all members, the D.R. extends sincere sympathy to Mr. and Mrs. Savage in their very sad loss. G5RV.

DISTRICT 15 (London West, Middlesex and Buckinghamshire)

D.R.: H. F. Wilkins (G6WN), 539 Oldfields Lane, Sudbury Hill, Greenford, Middlesex. Byron 3369.

Letters have been received from new members, BRS5027, 5148 and 5224, all of whom are welcomed to the District. We hope to see them at meetings when their duties permit.

From 2BAJ comes a note informing us that he was married in June when home on leave from the R.A.F. (Congrats to the XYL and yourself, O.M.) 2BAJ is a Signals Corporal stationed somewhere in Somerset. 5027 is in the R.A.O.C. and his interest in radio dates back to 1923, but unfortunately he has suffered a head injury which has ruined his chance of promotion. (Hard luck, O.M.) 5148 is a L.A.C. and stationed within the district; his home is in Chiswick. 5227 who was a regular Army instructor in 1907 and now a Police W.T. operator wishes to meet someone of his own age to discuss radio theory. 6IF reports that 2FV and 6OU are now located with him at High Wycombe together with a few BRS and A.A. members. We welcome them all. They are anxious that meetings be held in that locality. How about it, 5VZ or 6JK—can we do anything? G6WN.

DISTRICT 16 (South Eastern)

Deputy D.R.: W. A. Searr, M.A. (G2WS), 8 Beckenham Grove, Shortlands, Bromley, Kent. Beckenham 1131.

A note from the Brighton and Hove T.R. (G6CY) reports that 2RU has achieved the rank of C.S.M. and that 6SU is again actively interested in radio. Other Sussex members are carrying on their individual experiments.

E. H. Trowell, 2HKU, 27 Unity Street, Sheerness, has exchanged visits with 4721 and is anxious that other members should call on him.

A. J. Hill, G3RC, who has just left Orpington Military Hospital, after five weeks, has been in the R.E.'s since February. He sends best wishes to old friends. G2WS.

DISTRICT 17 (Mid East)

D.R.: Dr. A. Gee (G2UK), "Stonehaven," Horncastle Road, Boston, Lincs.

The D.R. is looking forward to meeting many members at the Provincial District Meeting to be held at the Saracen's Head, Lincoln on August 23 at 3 p.m. It is hoped to show the R.S.G.B. films.

Boston.—For the information of those who have enquired, 2BQC's address is c/o The Grove, White Waltham, nr. Maidenhead, Berks.

Louth.—BRS3880 has a superhet under construction, but is at present in hospital. He hopes to be out in time for the Lincoln meeting.

Lincoln.—G8GI reports from Swindon that he has had an airgraph from G6GH. 2AUR sends best wishes to all old friends. He expects to be at No. 1 S.S. shortly for W.O.M. course. G2UK.

Northern Ireland

D.R.: J. N. Smith (G15QX), 19 Hawthornden Drive, Belmont, Belfast. Belfast 63323.

New arrivals to N.I. include G3AH, 3TN, 5UG, G6MNX, BRS3607 and 3863; all are cordially welcome. Congrats to F. A. Robb, G16TK, who has been granted a commission in the R.A.F.V.R. (Training Branch); to G2FS and his XYL on the arrival of a Junior Op., and to G13ML who has become engaged to a little W.R.E.N. The following wish to be remembered to their GI friends—VU2AN, G5IV, 8PR, 2AMW and 2FJS. GI sends 73 to all those who have been on our guests and are now in divers places. G15QX.

(Continued on page 32)

HEADQUARTERS CALLING

June Council Meeting

Résumé of the Minutes of a Council Meeting held at the Institution of Electrical Engineers, on Monday, June 8, 1942, at 5.30 p.m.

Present.—Messrs. A. D. Gay (President), E. L. Gardiner, H. A. M. Clark, A. E. Watts, G. A. Jessup, S. K. Lewer, W. H. Matthews, W. A. Scarr, E. H. Simmonds, A. J. H. Watson and J. Clarricoats (General Secretary).

An apology was received from Mr. J. W. Mathews who was prevented by Service duties from attending.

1. One hundred and twenty applications for membership were approved. Ninety-seven applications were sponsored by Corporate members and 23 were supported by references.

2. It was reported that of the 536 applications for membership approved during the period February–May, 1942, 51 applicants had not yet forwarded their subscriptions. A large proportion of these applicants were on Active Service.

3. It was agreed to convey an expression of appreciation to Mr. H. H. Phillips, GW4KQ, for the work which he is carrying out as leader of the newly-formed V.H.F. and Micro-wave Sub-Group of the Experimental Section. The Council recognises the importance of the work being done by the members of this sub-group.

4. It was reported that a P.D.M. had been arranged to take place in Prestatyn on June 21. The Secretary was authorised to attend as Headquarters' representative.

5. It was agreed to offer an honorarium to Mr. A. O. Milne, G2MI, in recognition of his past services as BULLETIN draughtsman.

6. It was agreed to hold a further Radio Brains Trust meeting on September 26. No meeting would be held in August.

Radio Brains Trust

The Second Session of the Radio Brains Trust will take place at the Institution of Electrical Engineers on Saturday, September 26, at 2.30 p.m. Members are cordially invited to submit questions, which should be addressed to the Chairman, Radio Brains Trust, c/o R.S.G.B., 16 Ashridge Gardens, London, N.13, and sent in a sealed envelope containing no other correspondence. Members should give their name, address and call sign.

Ham Hospitality

For the past two years it has been our practice to publish lists of members who offer "Ham Hospitality." For a variety of reasons many of those whose names have been listed are now unable to extend hospitality. In order to bring our records up to date, with a view to the publication of a consolidated list at an early date, all members in a position to extend hospitality are asked to send a postcard to Headquarters *without delay*. This request applies to those who have previously written in this connection as well as to others who are now able to offer hospitality.

The following particulars are required:—

Name.	Pre-war call or B.R.S.
Full Postal Address.	Telephone Number.
Days or Times available.	Whether previous notice is required.

The consolidated list will appear in our September issue.

Returned "Bulletins"

Members are asked to assist Headquarters in tracing the following members whose BULLETINS have been returned from the address on file:—

P. F. C. Sale, The Ship, Stone Bridge, Soham, Ely.
R. D. Scott, 4 Weyhill Road, Andover.
W. J. Gibbons, c/o 20 Cambeys Road, Dagenham.
B. G. H. Rowley, Lyness, Orkney (new member).
C. Clark, 2ASU, R.A.F.
A. Baracz, SP3FB, Polish Squadron, R.A.F.
P. J. Bulow, 61 Broughton Avenue, Aylesbury.
Cpl. F. Hill, R.A.F.
Lt.-Col. F. E. B. Jones, "Greystones," Four Oak Road, Sutton Coldfield.
J. H. Bryce, late of Cyprus.
Sgt. G. Rudolf, R.A.F.

I.E.E. Meetings

An attendance of about 70 members was recorded at the London meeting held at the Institution of Electrical Engineers on Saturday, July 25, when Mr. H. V. Griffiths, Engineer-in-Charge, B.B.C. Station, Tatsfield, lectured on the subject of "Frequency Measurement." An interesting discussion followed.

Mr. A. D. Gay (President and Calibration Manager to the Society) was in the chair, supported by Mr. E. L. Gardiner (Executive Vice-President), who was responsible for moving a cordial vote of thanks to the lecturer. Mr. H. A. M. Clark (Hon. Treasurer) supported the motion which was carried with acclamation.

At the invitation of the President, Mr. H. V. Griffiths is to offer his paper for publication in this Journal.

NEW MEMBERS

Home Corporates

D. BILTCLIFFE (G6NB), Dunmar, Nursery Close, Horsell, Sy.
C. PROSSER (G8KV), 48 Durham Road, Bromley, Kent.
E. G. EWING (G8MO), Adm. Sig. Est. c/o G.P.O., London.
J. B. WILSON (2AOW), 1 Sterling Grove, Hestington Lane, York.
C. J. D. FLETCHER (2BCZ), 7 Charnmouth Road, Bath, Som.
B. A. LANE (2BLP), 2 Savile Row, Halifax, Yorks.
W. BLACKLER (2FJN), 18 Eton Street, Walton, Liverpool.

Home Corporates (B.R.S.)

L. HAINIX (5199), 72 Forburg Road, London, E.5.
G. E. TUMBER (5200), 175 Bradeside Avenue, Pateham, Sussex.
J. BRADBURY (5201), 189 Lower Wyke, Bradford.
D. J. SOLE (5202), 22 Halsall Lane, Formby, Lancs.
B. A. COLALUCA (5203), 27 Julian Road, West Bridgford.

A CORDIAL WELCOME IS EXTENDED TO THE

99

NEW MEMBERS WHOSE NAMES ARE LISTED

J. BLACK (5204), 69 Love Street, Paisley.
F. W. D. SPURRELL (5205), The Dales, Sheringham.
J. F. WHITEHEAD (5206), 22 Duncan Court, London, N.21.
R. L. HOLBURN (5207), 40 Grahams Road, Falkirk.
D. B. KENNEDY (5208), 111 Old Toiv Road, Maidstone.
W. A. G. WEATHERLEY (5209), 75 Limbury Road, Luton.
G. W. PARKER (5210), 34 Shanklin Drive, Nuneaton.
G. S. COOKE (5211), 44 Ridgeway Moor, Ridgeway, Yorks.
E. C. IBBOTSON (5212), 12 Moss Lane, Orrell Park, Liverpool, 9.
W. A. MASTERS (5213), Burlington Cottage, Foxton, nr. Royston.
L. E. WILEMAN (5214), 26 Lindsay Ave., Abington, Northampton.
S. GILL (5215), 46 Church Road, Thornton, Blackpool.

H. F. HAMBLETON (5216), c/o 50 St. Thomas Rd., West Hill, Hastings.
B. H. DAVIES (5217), 73 Arden Road, Smethwick 41.
A. F. APPLETON (5218), The Gardens, Christian Malford, Chippenham.
B. GREENHILL (5219), Mendips, Nailsea, Som.
G. M. STITCHER (5220), c/o 49 The Avenue, London, E.4.
P. R. K. ROUSE (5221), 42 Cranbrook Road, Hounslow, Middx.
A. O. BRIGHTON (5222), 6 Arlington Gdns., The Mount, Saltdean.
D. G. CLELAND (5223), 23 High Street, Oban, Argyll.
F. W. J. COOPER (5224), 248 Kenmore Av., Belmont, Harrow, Mx.
C. L. GRIESHABER (5225), 126 Southampton Street, Reading.
F. WITTS (5226), Lucky Lane, Mildenhall, Marlborough.
L. J. HARPER (5227), 106 Olyffe Avenue, Welling, Kent.
W. H. HAMBLETON (5228), 19 Coopers Lane, London, S.E.12.
J. J. WILLIAMSON (5229), 41A Westgate, Seaford, Lincs.
D. F. WILSON (5230), 25 Hayes Road, Bromley, Kent.
K. C. J. MADGETT (5231), 44 Hatherley Gardens, London, E.6.
J. F. GALPIN (5232), 19 Lyde Road, Yeovil, Som.
J. C. TAYLOR (5233), Stanley Cottage, Stanley St., Atherton, Lancs.
F. H. WORKER (5234), 63 Manor Road, Friar Park, Wednesbury.
W. E. GRIMES (5235), 18 Langford Crescent, Cockfosters, Herts.
W. HALEY (5236), 43 Hyde Tree, Gosforth, Newcastle-on-Tyne 3.
J. R. RICE (5237), Athgarvan, Shawford, Winchester.
P. J. WILSON (5238), 23 Fairway, London, S.W.20.
W. J. PUGH (5239), Cranford, Lodge Hill, Kingswood, Bristol.
T. W. C. HUMPHREYS (5240), 32 Corporation Row, London, E.C.1.
S. R. CHOULES (5241), 99 Guinions Road, High Wycombe, Bucks.
F. E. SMITH (5242), 40 Stewart Road, Chelmsford, Essex.
R. H. CLIFTON (5243), 311 Banbury Road, Oxford.
W. INGLIS (5244), 48 Steinhause Place West, Edinburgh 11.
T. W. DRAYCOTT (5245), 200 Adelaide Road, London, N.W.3.
H. C. BOSTOCK (5246), 20 Meadfield Avenue, Langley, Bucks.
D. J. DUCKETT (5247), 3 Elm Grove, London, S.W.19.
K. R. W. SWIFT (5248), 50 Overdown Road, London, S.E.6.
C. W. STACEY (5249), 34 Cranborne Way, Hayes, Middlesex.
A. MANSALL (5250), 46 Empress Avenue, The Drive, Ilford.
A. SIMMONS (5251), 65 Bramcote Avenue, Chilwell, Nottingham.
R. J. FORBES (5252), 6 Craighall Gardens, Edinburgh 6.
R. A. S. PLATT (5253), Waddon, Chudleigh, Devon.
K. BUNSTON (5254), Gable Cottage, Broad Hinton, nr. Swindon.

R. J. GLOVER (5255), 2756 Fulham Court, London, S.W.6.
 J. W. BARLOW (5256), 515 Fernside Road, Swindon, Wilts.
 J. R. TYZACK (5257), 143 Birchington Avenue, S. Shields.
 E. N. AVERY (5258), 12 Grenville Avenue, Wendover, Bucks.
 E. HENSHAW (5259), 7 Wharncly Road, Ilkeston, Derbyshire.
 W. H. CHERRY (5260), Top House, Seaview Cres., Preston, Devon.
 R. F. NOTLEY (5261), Derreen, Belle Vale, Haslemere.
 W. H. BLAND (5262), 338 Trowell Road, Wollaton, Nottingham.
 P. ALDORTH (5263), Admiralty Signal Est., Hants.
 P. F. SKEEDOM, M.A. (5264), Rodborough, Wiltshire Road, Banwell, Som.
 F. TAYLOR (5265), 1 St. Peter's Walk, Droitwich Spa.
 N. COXALL (5266), Turner's Field, Downley, High Wycombe.
 A. D. S. CULLIS (5267), 106 Kenilworth Road, Edgware, Mdx.
 R. TREVITT (5268), 14 Canterbury Avenue, Liverpool 22.
 S. RAYNER (5269), The Cottage, Hoo Lane, Otley, nr. Hitchin.
 J. TAYLOR (5270), 23 Welbeck Road, Hyde, Cheshire.
 D. H. CROXSON (5271), Shaftesbury, Shrewsbury Rd., Nantwich.
 C. L. CHAPPELL (5272), Seaford, Meols Parade, Hoylake, Ches.
 T. W. MURCATROYD (5273), 60 Imperial Rd., Marsh, Huddersfield.
 A. R. WATSON (5274), 75 Elwyn Road, March, Cambs.
 H. SOULSBY (5275), 9 Monument Terrace, Birtley, Co. Durham.
 H. HIPPLE (5276), 10 New Street, Wellingborough, Northants.
 E. A. J. STEWARD (5277), 2 West Park Lane, Worthing.
 E. J. LONG (5278), 72 Arthur Street, Ryde, I.O.W.
 W. G. ALLEN (5279), 24 Dickinson Avenue, Croxley Green, Herts.
 F. M. JACKSON (5280), 79 Storer Road, Loughborough.
 F. J. H. THORN (5281), c/o The Grange, Northwoods, Winterbourne, Glos.
 R. V. NORDON (5282), 24a Carlton Terrace, Carlton, Barnsley.
 G. R. BANKS (5283), 79 Longton Avenue, London, S.E.26.
 F. W. PORTER (5284), 3 Mills Grove, London, E.14.
 J. L. T. JACKSON (5285), 21 Offham Slope, London, N.12.
 C. G. CHILDS (5286), 7 Coombe Gdns., Ensbury Pk., Bournemouth.

Dominion and Foreign

LT. R. H. REYNOLDS, JR. (W4BRT), U.S. Army.
 T. PETTIGREW (BRS500), R.C.A.F., England.
 W. M. BRUNETTE (FRS55), C.T.C., England.
 J. ROTHLEISCH (FRS56), 88 Broad Walk, London, N.21.
 F. KATLAN (FRS57), Czechoslovak Forces (previously listed as YR56J).
 Correction to July list.—P. A. Downes (BRS5075), address should read, 5 Bellfield Avenue, Harrow Weald, not 6.

Letters to the Editor

The Disposal of Government Surplus Radio Equipment after the War

DEAR SIR,—Many of us now in the Services are handling really fine equipment, and one often hears one ham say to another "Just wait until this stuff gets on to the disposal market!" I wonder if they will not be badly disappointed when it does.

In those happy, and we hope, not too far distant days, we shall probably find Government surplus bought up by some financial concern whose only scientific interest is in money-making. Components will then be retailed to us at a price far in excess of that which the Government (which, after all, means ourselves) received for them.

I suggest that the amateur could ensure a fairer deal for himself if the Society could, at a suitable date hereafter, approach the authorities in the capacity of a scientific body, and endeavour to purchase and retail to members, disposed components at a reasonable price. Surely we who have used them in our country's cause, and who wish to use them for a scientific purpose, should receive consideration in preference to a money-making concern.

Yours sincerely,
 H. S. CHADWICK (GSON).

Flash Test on Transformers

DEAR SIR,—It might be useful to remind readers of an experimental Flash-Test which can be used when no high voltage transformer is available. If several condensers are connected in series—but insulated from earth—they can be charged, one at a time, through a resistance from any suitable eliminator or D.C. source. By charging them so that they are like electric batteries, and positive connected to negative, the voltages add up, and a very high voltage can be built up at the extreme ends of the condensers. This voltage will persist for a short time if the condenser insulation is satisfactory. This period is usually more than sufficient to test a single experimental item.

Yours faithfully,
 VOIGT PATENTS LTD.,
 P. G. A. H. VOIGT,
 Director.

Transmission Line Tuned Circuits

SIR,—I should like to comment on Mr. Corfield's use of the term "line of infinite length."

There is no such thing as an infinite quantity. Quantities may increase without limit—which is what is usually meant by this term—but Mr. Corfield says that a line of infinite length is "somewhat cumbersome." I should think it would be, if manufacture of it could ever be completed!

Surely the difficulty is overcome by considering a line of very great length and then considering the alternating current that would flow with a given applied voltage before reflection can take place: this is then expressed as an impedance in the usual manner, i.e. V/I .

Yours faithfully,
 L. W. MELVILLE.

Mr. Corfield comments as follows:

Whilst there is no such thing as an "infinite quantity" in that such quantity cannot be defined as to magnitude, it is usually accepted as a mathematical term and is considered as being of a magnitude very large compared with others under consideration. A line of very great length would have no reflections in any case, as all the energy would be absorbed as a resistance loss.

Some More Reflections

DEAR SIR,—After reading "Random Reflections" in the June issue (an article with which we heartily agree) we consider that there is one aspect of the situation, not raised in the article in question, which has a distinct bearing on the attitude of the "man in the street" towards ham radio.

We refer to the British amateur as seen through the eyes of the writers and film producers of this country. If they are to be believed, possession of an amateur licence is an unmistakable sign of the moral depravity of its holder! In the only two British films which we have seen in which amateur radio has played a part, the amateur was either an accomplice of criminals or a simple-minded fellow who allowed his transmitter to be used by enemy spies as an aircraft beam station. We have found three references in books by British authors to the moral turpitude of the ham fraternity. The authors depict him as (a) a murderer, prepared to use his hobby as an alibi, (b) a dope-smuggler, who was not averse to using the 160-metre telephony band to convey information to his associates, and (c) a thoroughly nasty piece of work who threatened to beat his wife on more than one occasion.

In contrast to this unfriendly attitude, consider the glamour with which Hollywood invests the ham. Technical difficulties no doubt preclude him from wearing a halo on the screen, but we are left in no doubt as to his worthiness and title to such a distinction. We cite, for example, the films: *Love Finds Andy Hardy*, by M-G-M, *Men of Boys' Town*, *Everybody's Hobby*, *Great American Broadcast*, *Grand Jury Secrets*, etc. The American public is left in no doubt as to the sterling qualities of the amateur, whereas the British public is led to believe that the local ham would gladly murder his own grandmother for the sake of the gold in her teeth!

So it seems a case of the dog having been given an undeserved bad name, by persons who have, quite possibly, no accurate knowledge of amateur radio.

And as the public is influenced to a greater or lesser extent by both films and literature, we think this is a point to which attention should be paid when cultivating a more friendly attitude towards the amateur radio movement by the general public.

Yours faithfully,

GEORGE E. SHACKLE (2DVQ), BERNARD RATCLIFFE (BRS4795)
 MABEL C. SHACKLE (MISS) (BRS4618).

The Extremes of Visible Light

SIR,—On reading the Editorial in the July BULLETIN, I notice that Dr. G. Bloomfield is quoted as saying: "The two extremes of visible light do in fact differ by about 1 Mc/s., etc." Surely 1 Mc/s. should read 1 Octave, i.e. 4,000 to 8,000 Angstrom Units. This vast part of the range of E.M. waves lies between the ultra-violet and infra-red regions, or from 0.00004 to 0.00008 centimetres, or 750,000,000 to 375,000,000 Mc/s. Thus the two extremes differ by about 375,000,000 Mc/s.

Yours faithfully,
 J. S. W. NUTTALL (G4BO).

[Dr. G. Bloomfield who expresses his regrets for the error and thanks Mr. Nuttall for his comments, says he appears to have omitted the not insignificant factor of 10^8 !—Ed.]

A Q. Story

The young daughter of W9DBD (Hon. Sec. Y.L.R.L.) was sent to get her sugar ration card but by mistake she joined a blood transfusion queue. When it was all over she said: "Now where's my sugar ration card?" thinking she had to give a pint of blood to qualify for one!

Article Wanted

The General Editor will be pleased to consider for publication an article describing methods of checking V.H.F. equipment by means of a cathode ray oscilloscope.

DISTRICT NOTES—(Continued from page 29)

Scotland

Scottish Records Officer: J. Hunter (GM6ZV), 51 Camphill Avenue, Glasgow, S.1. Langside 237.

"A" District.—The July meeting held in the Royal Technical College, Glasgow, heralded the beginning of a recruiting drive in "A" District which is already bringing in many new members. A record attendance of 72 was registered. The speaker was Mr. J. S. Tait, B.Sc., A.R.T.C., A.M.I.E.E., who chose as his subject Radio Transmitters. By means of two cathode ray tubes, numerous receivers and transmitters, and a large miscellaneous array of equipment, he provided one of the most outstanding talks "A" District has yet had. He traced the path of the signal from the microphone to the aerial, showing its nature at each stage by means of numerous practical experiments. It is hoped that we shall have the pleasure of further talks from Mr. Tait. The August meeting will also be held in Room 149, Royal Technical College, George Street, Glasgow (enter by door in Montrose Street) on Sunday, August 30, at 3 p.m. prompt, when E. Bradshaw, Ph.D., M.Sc., A.M.I.E.E., will speak on the "Cathode Ray Oscilloscope." A cordial invitation is extended to all members and visitors to attend what promises to be another most interesting meeting. A notable visitor to the July meeting was BRS25, who hopes to share our climate for a time, other members present included G6AZ, GM5YX, GM6MD, GM6WD, 2BOF and G5TC. To the last named we are greatly indebted for arranging this and the August meeting. We have another letter from BRS4333 who is busy teaching Morse to the H.G.

"B" District.—A recent arrival in the District is Mr. L. G. Stoodley, G8DM, who looks forward to meeting local members.

"H" District.—A most welcome report is to hand from the D.O., Mr. A. Lawson, who writes "Greetings to all 'H' members, abroad, at sea, and at home. Yes, a long period of silence from your D.O., but just as long a silence from some of you chaps! So what about it? Letters will be welcome, also notification of 'Hams you have met' would be appreciated as this will keep many of us in contact in the future. The D.O., during his meanderings has met up with the following in South West England, G2AA, 2NJ, 3CC, 3KO, 3SJ, 3ZO, 5IL, 5SF, 5UO, 6LV, 8NA, 8VV, 2FAO and 2CPT." "H" members who may desire to get in touch with any of the foregoing can do so via the D.O. at his usual QRA, Makora, Kinghorn, Fife. At present he is busy "Somewhere in Scotland." GM6ZV.

THE LATE MR. E. H. SHAUGHNESSY

The death on July 29 of Mr. E. H. Shaughnessy, formerly Assistant Chief Engineer G.P.O., severs yet another link between the Society and that enthusiastic band of civil servants who co-operated so well in the difficult years following the last war.

Mr. Shaughnessy had been a Vice-President of the R.S.G.B. and in the early days had much to do with the issue of licences and frequency allocations. He was very sympathetic towards the amateur movement and it was largely due to his efforts that permission was granted for the use of the high frequencies by British amateurs.

Mr. Shaughnessy lived at Hatch End, Middlesex, up to the time of his death. H. B. S.

The Copper Development Association, Grand Buildings, Trafalgar Square, London, W.C.2, has recently issued a classification of copper and copper alloys which should prove of considerable interest to members engaged in the radio industry. The enormous range and variety of the copper and copper-base alloys which are in commercial use, has in the past always presented a problem to engineer-users, and designers, faced with the task of specifying materials, and at the present time when many firms are engaged in the fabrication of products and materials with which they are not fully familiar, the difficulties of the situation are more widely experienced.

The tabulated data presented in this C.D.A. publication (No. 36) concerns the more important copper-base materials with a citation of the appropriate British specification.

A copy will be sent, free of charge, to those making application to the Association.

AMERICAN PUBLICATIONS

CURRENT PRICES

Radio Amateur's Handbook	...	10s. 0d.
"Antenna Handbook"	(Defence Edition)	8s. 6d.
"Radio" Handbook	...	4s. 0d.
"Radio" Handbook	...	11s. 0d.

All the above items are ordered direct from America. Delivery about 3 months. Cash with order. Service addresses must not be used.

R.S.G.B.

16 ASHRIDGE GARDENS, LONDON, N.13

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ALL KINDS OF PRINT.—Send your enquiries to G6MN, Workshop.

BROWN "A": Adjust. Phones 4000 new, 50s. Premier Mod. Transformer 25-watts, 17s. 6d. Rich Bundy 500v 250 mA. 6v, 7.5v, 4v, 45s. Rothermel P.U., £3. Cosmocond P.U., £2. new. Rewinds new Trans. Driver Chokes, etc., made. Specification wanted Gram. Motors, A.C.—GSTF, H. BINNS, 119 Raistrick Common, Brighouse, Yorks.

HAMMARLUND, Comet. Pro. 8-valves. Xtal. Gate. Separate speaker, beautiful job. What offers?—KAY, 24a Watcombe Road, Bournemouth.

LADNER AND STONER, third edition, 12s. Newnes Electrical Engineering, 1937, four bound volumes, 20s.—G3LF, 16 Greenhill Crescent, Harrow.

RAYMART.—Owing to paper restrictions our advertisements can only appear in alternate issues. See our Front Cover announcement in the July issue.

SALE.—Three Townsend Buzzers on small bases, as new, 6s. each. Small Key, ex Mark III, 4s. £1 the lot.—G4DC, 48 Foxholes Avenue, Hertford.

WANTED.—Diagram of Phillips 585HU, also Mullard PEN 26-valve or equivalent.—BRS4030, 7 Eastbourne Terrace, Seaford, Sussex.

WANTED.—Transformers, "Thordanson," 57A41, 58A70 or "Stanco" A1206, A4208, tubes 76, 6A3, Mazda, TP25. Must be perfect.—MARK, 114 South Street, St. Andrews, Fife.

WANTED.—Good Communication Receiver, Test-meter, Oscilloscope, Amplifier or parts, A.C. Gram. Motor. Few Potentiometers and Bulgin Multiple Switches.—GMI, 131 Bloomfield Road, Blackpool.

WANTED.—Two 6F6 metal tubes in good condition. Write with price.—RICHARDS (2AAW), 3 College Street, Burnham-on-Sea, Somerset.

WANTED.—Hivac Harries All-stage valve-type A15, two if possible.—BARNES, 53 Kingshill Avenue, Kenton, Harrow.

WANTED.—A.R.R.L. Handbook, 1939, 1940. QST's 1939, 1940, complete.—J. R. LACROIX, BRS4294, Brockhurst, Templewood Lane, Farnham Common, Bucks.

WANTED.—Hallcrafters S29 "Sky Traveller" or any good quality modern Battery Communication Receiver. Must be in good condition.—Box 77, PARRIS, 121 Kingsway, London, W.C.2.

WANTED Urgently.—National 1-10 Receiver, complete with coils, power pack, etc.—Offers to Box WB1, c/o 16 Ashridge Gardens, London, N.13.

PATENTS AND TRADE MARKS

KING'S Patent Agency Ltd. (B. T. King, G5TA, Mem. R.S.G.B., Reg. Pat. Agent), 146a Queen Victoria Street, London, E.C.4. Handbook and Advice on Patents and Trade Marks free. Phone: City 6161. 50 years' refs.

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