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extends from 300 to 3,000 Mc/s.) is designated, in terms of wavelength, the "decimetric," not the "micro-wave," band.

The system suggested by Mr. C. Fleming Williams does however, include a micro-wave band, although it does not coincide with the U.H.F.-decimetric band of the C.C.I.R. system. In the Williams system of classification, which embraces both audio and radio frequencies, each band is given a number, and that number may be found by expressing a frequency (in cycles per second) as a number between 1 and 10 multiplied by a power of 10. The band number is given by that power of 10.

In allocating a number to each frequency band Mr. Williams has gone a step nearer to the provision of a memory-link between wave-bands and frequency bands, but we believe that an even better method would be to give a name to each of the recognised bands. The letters of the Greek alphabet would seem to provide a convenient means of carrying this suggestion into effect. Precedent for this suggestion is to be found in the spectrum table which assigns the letter "gamma" to those rays which are emitted by radio active substances.

It should be reasonably easy to select seven Greek letters (ten if the Williams system is used) which are easy to remember and easy to pronounce. It might even be feasible to use the alphabetical sequence, calling the highest frequency (lowest wavelength) band, the "Alpha band." Should objections be raised to the use of "gamma" this letter could be omitted.

If this nomenclature, or something similar, could be adopted, and the C.C.I.R. system used as the basis of frequency and wavelength classification, the table would be written as follows:—

Name of Band.	Wavelength. Metres.	Frequency. Mc/s.
Alpha ..	0.1 — 0.01	3,000 — 30,000
Beta ..	1.0 — 0.1	300 — 3,000
Gamma ..	10 — 1.0	30 — 300
Delta ..	100 — 10	3 — 30
Epsilon ..	1,000 — 100	.3 — 3
Zeta ..	10,000 — 1,000	.03 — .3
Eta ..	Above 10,000	Below .03

For all practical purposes Beta, Gamma and Delta would be the only bands generally so described, "Beta Band" would, for example, replace the present "untidy" and confusing expression "U.H.F.—Micro Wave Band."

The views of members interested in this suggestion would be welcomed. J. C.

CAN WAVELENGTH & FREQUENCY CLASSIFICATIONS BE CLARIFIED?

ENTITLED "The Classification of Radio Frequencies," the leading article in the December issue of *Wireless World*, focused attention on a subject which is of interest to all radio amateurs, especially those who are using equipment designed to operate on very high or ultra-high frequencies.

After referring to the C.C.I.R. system of radio frequency classifications (adopted in 1937) and to a system suggested by C. Fleming Williams as recently as last May, our contemporary pointed out that there is still no convenient, and easily memorised, link-up between frequency bands and wavelength bands.

Editorially we have been a little concerned at the rather loose way in which our own U.H.F. Equipment group describes itself. The fault cannot be attributed to the Group Manager, because the phrase "U.H.F. and Micro-wave" seems to be in general use. Nevertheless it is wrong as reference to the C.C.I.R. system will show. In this system the U.H.F. band (which

TROUBLE TRACING

PART III

By A. H. MASON (GM6MS)*

The Battery Receiver

THE diagram of Fig. 5 depicts a fair representation of a modern battery receiver circuit, from which, for the sake of simplicity, the R.F. portion has been omitted although the two associated valves V1 and V2 are shown. In the better class of instrument it is the usual practice to employ separate mixer and oscillator valves whilst, in portable sets, where space and current consumption are carefully considered, a heptode frequency changer is often used. V5 is a quiescent push-pull pentode valve providing a reasonable output with low H.T. current drain. This valve is driven by a transformer T1 with a parallel-fed primary (a common arrangement with battery sets). C1 is the bias decoupling condenser of from 25 to 50 μ F capacity and C16 (which is across the H.T. supply) is generally 8 μ F.

The writer has found that a number of battery receivers are used at sea and the effects of a salt-laden atmosphere have to be seen to be believed. Weaknesses at fine wire soldered joints are revealed by the all-too-familiar green spot. One sea-going engineer got over the difficulty of poor valve contacts by soldering the valve pins solidly to the holders! Referring to Fig. 5 it will be seen that automatic bias is employed. In this connection it is worth noting that, should the condenser C16 develop a leak, more current will flow through the resistors R1 and R2 which, in turn, will increase the bias voltages. The result is very distorted reproduction. This fault can be traced by temporarily removing all the valves and measuring the H.T. current which should normally be of a very low order.

Another puzzling fault is when slight distortion is

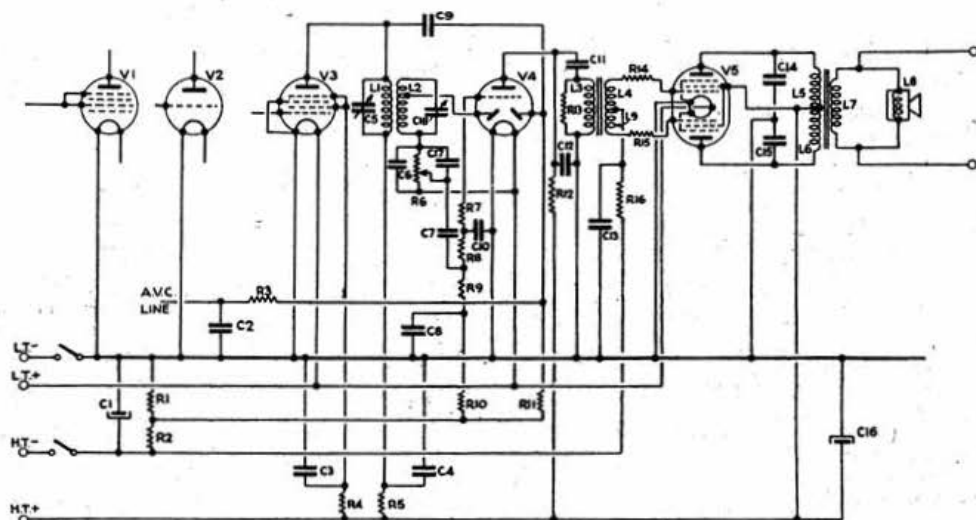


Fig. 5.

Modern battery receiver circuit with R.F. portion omitted for reasons of simplicity.

Usual Troubles

It may be said, without fear of contradiction, that a battery-operated receiver suffers more from breakdowns, due to poor contacts, than any other type of set. This can be attributed, firstly, to the low filament voltage which is employed, being controlled, in many cases, by a switch with relatively small contacts. This in itself, with properly plated and strong spring contacts, would not be serious if the accumulator and high tension battery were out of harm's way. Unfortunately, practically all B.C.L. sets have sufficient extra space in the cabinet for the batteries, and most people take advantage of this fact, with the result that, after awhile, valve pins, wave-change and on/off switch contacts are liable to suffer. The remedy, of course, is to fit extensions to the battery leads and keep the batteries outside the cabinet. A considerable number of years ago one was advised to open up valve pins with a pocket knife in order to improve contact. This practice should not be followed where the holder has sprung contacts, which are easily distorted by bulging valve pins.

present and voltages and currents are, apparently, normal. Check whether the L.T. polarity is correct. The smartest of engineers have been caught by assuming that a red spade tag indicates positive and a black one negative. Trace the leads and make sure. Also, before connecting the H.T. battery make certain the leads are properly marked; condenser C16 is of the polarised type and must have voltage applied in the correct direction. H.T. wrongly connected is not good for the battery and the condenser C16 is liable to be destroyed.

In the older types of battery sets it will often be found that the intervalve L.F. transformer primary is series-fed and subject to breakdown due, presumably, to the rapid making and breaking of the circuit when the associated wander plug is connected and removed. A similar transformer has been found to stand up much better in an A.C. receiver where the rectifying valve heating and cooling gradually gives a cushioning effect.

* 390 Kings Park Avenue, Rutherglen, Glasgow.

The Communications Receiver

The term "communication" is, generally, applied to a receiver which is designed for the special purpose of receiving messages either in speech or Morse code. In order to receive C.W. signals a beat frequency oscillator is incorporated and in this respect such a set differs from a purely broadcast receiver. The calibration, usually made in kilocycles and megacycles, is of a high order which again, sad to relate, is not found in the average B.C.L. receiver. Except in the cheapest class of communications set it is usual to have at least one R.F. stage, whilst with the higher priced instruments two stages are common. In addition, two I.F. stages of amplification with crystal filter are considered necessary to give a "single signal" effect. Facilities are provided for connecting different types of aerial systems and the whole receiver is well screened in a metal case.

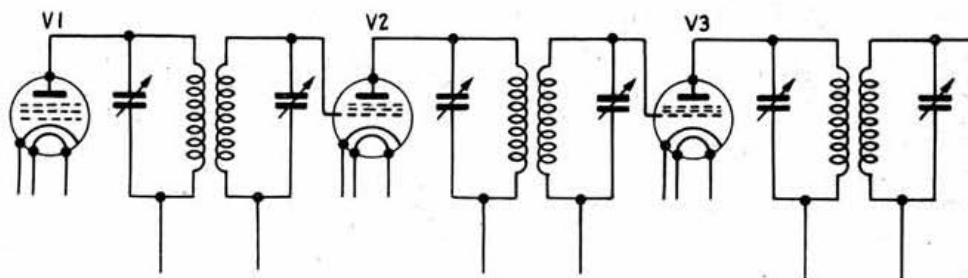


Fig. 6.

Temporary makeshift repair with multi-stage R.F. or I.F. circuit.

After being in use for a considerable time it may be found that a communication receiver gradually falls off as regards signal strength. Assuming that the valves are not at fault, it is interesting to check whether the I.F. or R.F. circuits are out of alignment. Owing to the inherent selectivity and the cumulative effect of numerous stages of amplification, detuning will be very noticeable. Before proceeding to re-tune the receiver read the manufacturer's instructions carefully—most makers of communication instruments issue a booklet giving useful data, such as intermediate frequency used, whether oscillator frequency is above or below the signal frequency, etc. One can often take short cuts with simple three or four-valve superhets but not so as regards a communication receiver worthy of the name. Use an accurately calibrated signal generator, and tune for maximum output by means of a meter *not* by ear. It is surprising what a difference it makes to the overall sensitivity and selectivity.

Where a receiver is wanted urgently for a special job and it has more than one I.F. or R.F. stage it is interesting to note that a faulty stage can be cut out temporarily. Fig. 6 shows a typical circuit of two I.F. stages. Assuming that a fault exists in the coupling between V1 and V2, transpose the anode lead from V2 to V1 anode leaving the original anode connection of V1 disconnected. Signals will, of course, be reduced in strength but with the gain controls at maximum it should still be possible to obtain reasonable results, and

a proper repair can be carried out at a later date. This makeshift arrangement can, in a similar way, be applied to R.F. stages. In many instances, the change can be made from the top of the chassis, i.e. if the relevant anode or grid connections to the valves are available.

Equipment Required

Before seriously commencing the task of checking an instrument it is advisable to have a certain number of tools and meters available. A universal testing meter would be most satisfactory for the purpose but as this type of instrument is very difficult to obtain at present it may be necessary to make use of several meters of comparatively low sensitivity and accuracy. First, if a moving coil 0.2 mA. meter is available, it could be used, with suitable series resistances, to cover D.C. voltage readings of 0-10, 0-100, 0-250 and

0-500 volts. In this case the resistance is 500 ohms per volt—a rather low figure, admittedly—consequently if a milliammeter with a reading of 0-1 mA., or lower can be procured, by all means use it. With shunts, the meter could be arranged to read 0-10 mA. and 0-50 mA. In addition, a resistance tester can be constructed, using the milliammeter, by reference to one of the many articles on the subject.

For A.C. voltage and current checking the moving coil meter can also be used in conjunction with a metal rectifier. Alternatively, a moving iron meter of about 100 ohms per volt resistance, reading 0-500 volts, can be employed. (In practice, an A.C. milliammeter is rarely required for normal servicing work). This meter will be found most useful for supply transformer voltage tests—where meter consumption is of little importance.

Fig. 7 illustrates a case where the voltmeter could be usefully employed. The mains transformer T1 is found to be overheating and on test the voltage across L2 is noted to be much less than that at L3 and, after disconnecting the leaking ripple capacitor C3, voltages are normal. The receiver should be left on test for several hours after clearing the fault, in case a winding of the transformer has been damaged.

To check A.C. filament voltages a cheap pattern moving iron meter is satisfactory, especially if the meter error is known.

A service oscillator when required could, no doubt, be borrowed. In actual fact it is surprising how seldom it is required.

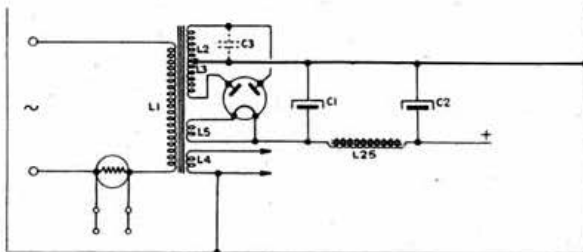


Fig. 7.

Using a voltmeter for tracing faults at mains transformer.

(Continued on page 112)

A SIMPLE COIL WINDER FOR HAND OR POWER OPERATION

By L. W. SMITH (2FSI)*

THE coil-winder to be described may be arranged for power or hand operation, or both. Provision is made for direct hand drive, when required, for handling thick wire such as is used for mains transformer heater windings.

Driving Mechanism

The only components about which there may be some difficulty are the three main gear wheels A, B, and C, in the sketch. In the original model, these were obtained by breaking down an old generator from a field telephone set. The actual sizes are unimportant, except that A and C should be of the same size to preserve the one-to-one ratio, while the main driving wheel B should be large enough to give a ratio of 4 or 5 to 1 when the hand drive is employed. The actual dimensions may be varied to suit individual requirements and available material.

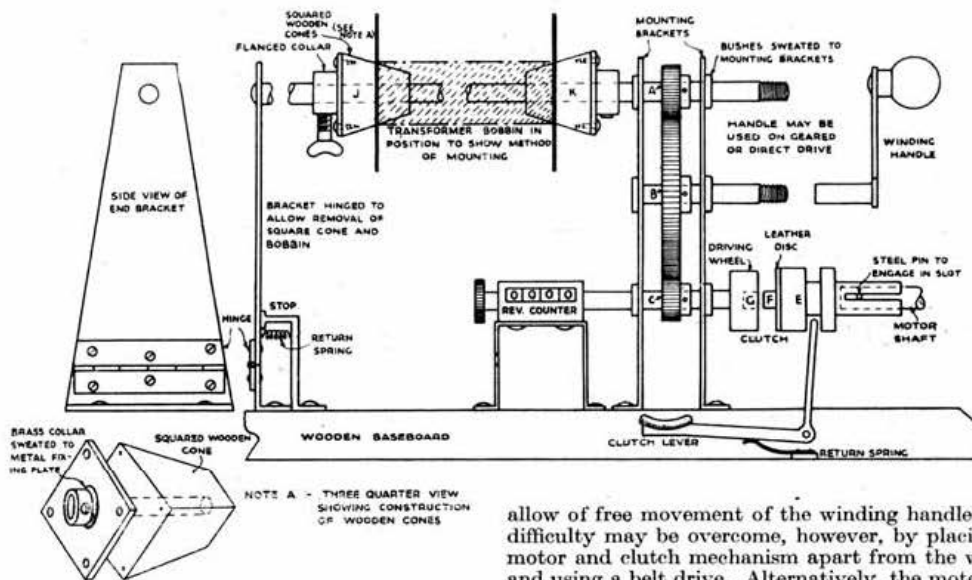
The former is secured by pressing the cones firmly into the core space and tightening the fixing screws, to hold them in place.

It should be mentioned here that the other cone (K) may be fixed with a grub screw or permanently pinned to the spindle. This method of mounting the former has been found quite satisfactory even when the core space is circular instead of rectangular. By making the cones a suitable length, any size of former may be catered for.

Hand or Power Operation

The original model was constructed primarily with a view to power operation only, and with the form of construction as shown, the following difficulty presents itself.

If power operation is being used and it is desired to use hand operation, the motor must be uncoupled to



The Clutch

The operation of the clutch mechanism is clearly shown in the sketch. The shaded portion E is rotated by the motor shaft, and at the same time is free to move along the shaft, controlled by the clutch lever. When this is depressed, section E is moved along until the leather disc is pressed against the driving wheel, with F engaging in the hole (G) to ensure a central drive.

This method of taking up the drive, safeguards against the risk of wire breakage when starting, for, without some such device, the inertia of the wire spool is sufficient to snap the wire on all but the heavier gauges.

Mounting the Former

To mount the former for winding, the end bracket is pulled back, and the squared cone (J) removed. The former is placed in position, and the cone replaced.

allow of free movement of the winding handle. This difficulty may be overcome, however, by placing the motor and clutch mechanism apart from the winder, and using a belt drive. Alternatively, the motor may be mounted under a brass strap which can be easily released, to allow removal of the motor when hand operation is desired. Hand operation is, however, only necessary as a rule, when very thick gauges of wire are being employed.

Readers interested in hand operation only, can ignore the clutch mechanism entirely.

Mounting the Spool

To carry the wire spool, two brackets should be mounted at a convenient distance from the winder carrying a spindle ($\frac{1}{4}$ in. diameter is satisfactory). If desired, two ordinary cones (not squared) may be fitted to allow smooth running of the spool, otherwise, if the hole through the spool is larger than the spindle, a jerky movement results, which places extra strain on the wire and causes undue rattling.

The writer records his thanks to Mr. S. G. Fenn for his assistance in developing the original model which has been in use for some months with very satisfactory results.

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

A WINTER'S TALE, 194?

By L. J. FULLER, (G6LB).

THE clock in the distant village struck three. The wind moaned through the poplars, causing little flurries of snow to fall from their heavily laden branches. The pale moon sank towards the horizon, its light glinting and gleaming on the swaying ladder of wood and wire that descended from the darkness of the starlit sky as if held by some mystic hand, to disappear through the window of the thatch-covered gable. Inside the bedroom, undisturbed by the striking of the distant clock, and discernible only as a hump beneath the blankets, slumbered our hero, one Pygmalion Fothergill, Captain of his soul, owner and operator of G9XXX, —and "Porky" to all Hamdom.

As the chimes of the village clock died away, there was a faint click in the far corner of the darkened bedroom, the dial-light of a radio receiver sprang to life, while inside the open framework of a short-wave transmitter, heaters glowed dully in a row of valves. In the topmost shelf of the frame, a larger valve, big brother to the smaller fry below, lit up with a brighter yellow glare which reflected the outline of the nearby table, with its receiver, log book, key and headphones —mute testimony to the prowess of the sleeper. A few seconds later, there was a second click, and as the pointers in the twin meters at the top of the framework slowly climbed in unison to midway round the scale, the key, as if moved by a phantom hand, commenced to chatter and dance, while a faint whirring sound came from the dim background *Test Test Test de G9XXX G9XXX G9XXX* — the key clicked away merrily — *ARRKKK*. As the key ceased its rhythmic song, the receiver took up the refrain, its tuning dial sweeping from side to side, as though in silent harmony with the swaying feeders outside the window.

Suddenly, the dial stopped, stilled by some unseen power, and the room was silent, save for the gentle breathing of the slumbering "Porky." Again a click, and again the key chattered, to cease after a few minutes. This time, the receiver dial did not move, but coming from the idle headphones were faintly audible whispers — *XX de XUP5ZZ gm om — psed to qso u — sigs 459 — nw 73 es cu — AR VA*. Once more the key danced its joyous tattoo, and as the last clicks sounded, there was a loud whirring sound followed by a rustling noise, and a gaily coloured card dropped neatly out of a slot on the edge of the table and fell into a wire tray on the floor below. Twice more, as the hands of the clock above the receiver showed the half and three-quarter hours, the key repeated its chattering song, and each burst of merriment was followed by the slow majestic evolutions of the dial, but on each occasion the receiver completed its task without interruption, no unseen hand staying its stately progress.

As the creeping hands of the clock reached four a.m., another strange drama was enacted at the bedside of the sleeper. A long steel bar, which was fixed to the wall beside the sleeper's head, and which had as its terminal decoration a very fair imitation of half a brick, suddenly pivoted downwards, like a striking snake, catching the slumbering "Porky" a vicious thwack across the ear. "Porky" stirred, and made as though to brush away a fly, while the disturber of his peaceful dreams sprang back into its socket. Ten seconds passed, and then again — Whmmmmmm — This time "Porky" snorted, neatly dodged the third descent of his tormentor, by taking cover under the pillow, and reached for the switch that would put an end to its gyrations. "Porky" sat up in bed,

shivering and rubbing his head reflectively. Yes — *Cubbs* had made a good job when they brought out the Super Hamdinner — Guaranteed to rouse the heaviest sleeper — their earlier model the Hamrouser was not half so effective, with its lighter spring and padded end piece — lots of good DX he had missed before he installed the 'Dinner.

Leaping from beneath the warm blankets like a startled snail, "Porky" scrambled into his thick, dressing gown, pulled on a pair of grey flannel trousers and encircled his neck with several folds of his Old Puberawlians muffler. Thus arrayed he crossed the room, and pausing before he switched on the light, peered out of the window. A light gleamed across the fields. "Porky" swore under his breath — Gosh-darn it — that blighter "Snoopy" had beaten him to it again. Did the perisher ever sleep? He must have been at it for some time, to have his light on already, and he didn't use a 'Dinner, but put his faith in an old alarm clock — "Porky" fumed. If only he hadn't been such a twerp as to go to the flicks last night, but had gone to bed early instead of being lured from the paths of Stern Resolve by the thrilling adventures of "Daredevil Dan the DX Demon," in serial four of *Hams of Hell* — an all-talking, all-singing, all-dancing, blood-stirring epic — in Hideous Multicolour — but what's the use — too late now anyway, and "Snoopy" had probably pulled in about five planets already. So long as Jupiter was not among them "Porky" didn't care. He was engaged in a cut-throat battle with "Snoopy" for the honour of the first Anglo-Jupitern contact, and with a JRS report to the credit of each station, feeling was running high, and the excitement was tense.

After the close of the Second World War, international Hamdom soon tired of world-wide DX, and looked around for fresh fields to conquer, and when the combined A.R.R.L.—R.S.G.B. Expedition to Mars was launched, with its slogan *Hams for the Planets*, there was keen competition for the 12 seats in the Blue Flier Trans-Planetary Rocket, as the tickets were distributed by ballot. Bemusing thus, "Porky" sat down at the table, and frowned at the Autolog. The frown left his face, and his eyebrows raised as he saw, in the neat teleprinted entry, that Hoo Flung, with his yak-back rig, portable in Upper Mongolia, had been honoured unto death to receive his celestial signals, which had brought light into the darkness of his miserable receiver to the tune of 459 — that the said Hoo Flung had been delighted beyond expression at this most noble of QSO's with his unworthy self, and that he would be honoured at the prospect of a further contact if the Sun of all the Suns would so far lower himself to reply again to his, Hoo Flung's, nauseating signals.

"Porky" picked his QSL card from the basket on the floor, and checked the details with those shown in the Autolog. All O.K. and ready for the post, but he didn't like the idea of tramping through four inches of snow. Dash it, he'd see *Cubbs* about that new Postallog. The one that not only printed the cards, but posted the bloomin' things as well. Switching the receiver controls from Auto to Manual, "Porky" swung the dial to and fro, biting his lip the while. Not much about, except old "Snoopy's" back-wash at its usual strength. He swung the dial to the other end of its travel, pausing a moment at the small black strip that marked Forbidden Territory. The bedlam that assailed his ears beggared description. Squeaks, groans, grunts

and growls, bursts of music mixed up with snatches of song, raucous voices shouting to the world the merits of Bulldog Beans, and Piffles Potted Paste, "each one making the most of his chance" — gee, what a commotion. This was the broadcast band, where the whole of the world's broadcast services were packed cheek by jowl, like sardines in a tin. "Mustn't disturb them" thought "Porky" — Gosh, it must have been tough on the Hams in the old days, when they were in the same tough spot—but the boot was on the other foot now, by Heck, and the gratitude of the Powers that Be, for the wonderful work done by the Hams during the Great Scrap, had shown itself in a practical and welcome form.

Just as he was about to resume spinning the dial, a slight break in the signals caused "Porky" to sit up with a jerk. He knew it. Weeks ago similar trouble had warned him that number 3 of the five Acorn/Pens in the R.F. stages was getting troublesome. Bust, bother and blow. That meant smoking another box of those disgusting *Nitwit* Minors, and at 50 for a bob, plus 10 for your worst enemies, and with Acorn/Pens available for nothing under the Gift Scheme, they were rank bad value. Bah — "Porky" gave the innocent receiver dial a vicious flick, spinning it violently. Next moment he grabbed the spinning knob, tense, shaking with excitement, searching feverishly around the spot he had mentally fixed in his mind's eye. Perspiration ran down his face as he ferreted among the signals that blotted out what he thought he had heard. Like a terrier at the mouth of a rat-hole he quivered with anticipation — could it be? — had he heard? — yes — no — yes, there it was, just under that Tibetan guy — curse these locals—ah, that's better—a faint scratching whisper, *CQ CQ CQ de JP238* — Jupiter by Jove, at last — "Porky" licked his lips, gone suddenly dry, and gripped the edge of the table, his knuckles tensed white, lest he yield to the temptation to try and improve the faint whisper, and thus lose it altogether in the static and QRM. His thoughts flashed to "Snoopy," across the fields—Had he heard it? He hoped not, with all due respects to his bosom pal. Hardly able to contain himself until the faint *AR K*, "Porky" fidgeted in his seat, and before the final *K* was properly formed he had thrown over the switch to the PA — *JP238 JP238 JP238 de G9XXX* — the call was flung through the ether—"Porky's" hand shook so that he could hardly control the key — *AR KKK* — The Great Moment had arrived at last—with his eyes shut tight, his face screwed, and his teeth clenched together in a frenzy of anxiety, "Porky" listened — *Dah di dah di dah G* — the rest of the call was shattered by a loud shrieking whistle that heterodyned across the band, wiping out the magic signal. "Porky" gasped, a sob choked him, tears ran down his face—Great Jumping Cats—to be robbed of his Contact of Contacts when he had it within his grasp. Oh the blankety blank twizzit who would run his ECO across the band with the juice on, Horror of Horrors, it was getting louder, rising and falling like the cry of a Lost Soul in its death agony—"Porky" snapped the switches on and off, threw the controls from side to side in a frenzy of desperation—anything to dodge this awful racket—and—What The—the dial was actually grinning at him, a nasty looking face spread across its countenance, a grinning figure with an ugly black forelock and small black moustache, its lips curled in a malicious leer, and as "Porky" stared in horror-stricken fascination, the face receded and another formed in its place, a fat, bemedalled figure, who rocked with laughter at his plight, and all the time the wailing cry went on — a voice was coming through as if superimposed on the ghastly racket in the phones

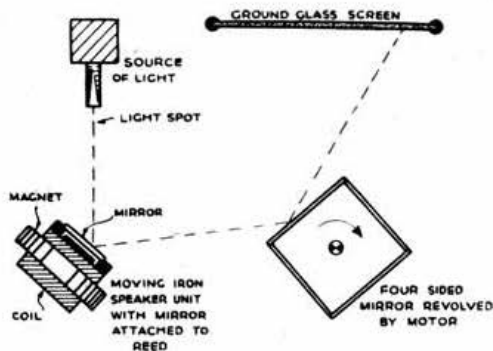
— "Never again the DX will you work, Funf has spoken" — it was too much, "Porky" smashed his fist through the front of the receiver and with a gibbering cry, fell off the chair onto the floor — someone was shaking him by the shoulder and a voice was saying "What the blazes are you doing rolling about on the floor like this? You've smashed the *Whatnot*, and the warning's just gone! You'd better buck up, you're on Fire Watch to-night." "Porky" woke up.

L.F. OSCILLOSCOPE

By R. H. HAYWOOD (BRS4688.)*

READERS who are unable to build an oscilloscope owing to shortage of components or cash, may be interested to read a description of a simple device developed by the writer which operates on similar principles to that of the Cambridge "Duddell" oscillograph.

The source of light is a 12 volts 36 watts lamp. The light spot (produced by means of a screen, small hole and lens) is focused on to a small mirror attached to the reed of a moving iron loud speaker unit, complete less cone.



Diagrammatical arrangement of the low frequency oscillograph developed by the author.

As the armature vibrates according to the L.F. current fed to the coil it has the effect of varying the angle of incidence vertically. This reflected beam is thrown on to a four-sided mirror turning at approximately 500 r.p.m. which is arranged to reflect the light spot on to a small ground glass screen acting as a scanning device.

With the armature of the loud-speaker unit motionless, the effect on the screen will be a line of light traversing from left to right or *vice versa*. Movement of the armature causes the angle (vertical) of the light spot to vary in sympathy and this will produce a sine wave form on the screen in accordance with the L.F. input.

The construction of this device should present no difficulty providing care is taken to ensure that the square four-sided mirror has exact angles, otherwise the line of light on the screen will be blurred.

An electric motor with direct drive was used by the writer to rotate the scanning mirror.

The unit is suitable for depicting the L.F. wave-form of receiver outputs but it cannot be used for the study of H.F. or R.F. wave-forms.

AN AUTOMATIC MORSE KEY

By G. H. STANTON (G8QY).*

THE automatic key to be described is not particularly difficult to construct, and where dimensions are given, they are intended more for general guidance than for rigid adherence.

The mounting plate which is of nickel measures $3\frac{1}{2}$ in. \times 6 in. \times $\frac{3}{32}$ in., but other metals could be substituted. Upon this plate the entire mechanism is mounted. Two pieces of $1\frac{1}{2}$ in. \times 1 in. \times $\frac{5}{16}$ in. steel are used as supports (Fig. 1a) for the adjusting screws, and the top pivot bearing. The supports are secured to the mounting plate by means of screws from underneath, holes being tapped in the supports for this purpose. Care should be taken to fit the supports squarely. A triangular plate, (Fig. 1b) is screwed to the top of the supports and this serves as a fixing for the top bearing. The key lever mechanism is $6\frac{3}{4}$ in. overall.

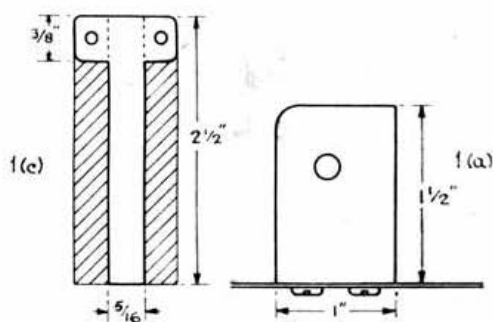
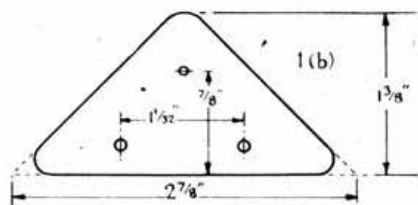


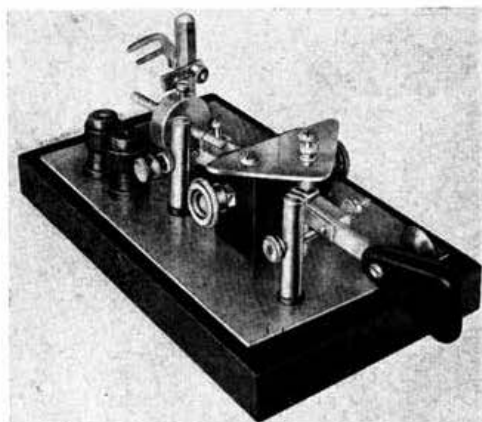
Fig. 1

(a) Shows the mounting plate with screws passing through it into the tapped holes in the supports. (b) Top bearing fixing plate. (c) Dash lever showing method of construction. The two ears at the end are bent at right angles to main portion and fit over armature.

The dash lever which is constructed from a piece of $2\frac{1}{2}$ in. \times $\frac{3}{8}$ in. \times $\frac{1}{8}$ in. brass is shown in Fig. 1c. The holes are clearance holes for the spindle, to allow the lever to pivot. A small piece of flat spring with contact is soldered to the lever for the dash contact, and a piece of tapped rod screwed into the lever and soldered, carries the dash lever return spring with a nut and washer for tension adjustment.

A piece of clock spring to give the pendulum action for dots, is sweated into a slot sawn in the brass armature, which measures 2 in. \times $\frac{5}{8}$ in. \times $\frac{1}{4}$ in. The other end is similarly fixed in the rod carrying the adjustable dot speed weight. The slots should be made with a fine saw blade such as an Eclipse Jeweller's saw. Cuts made with the usual hack saw blade are much too big. The dot contact spring is soldered to a collar,

which allows adjustment for contact alignment, the collar itself is locked with a grub screw. An armature restoring spring is fitted over the left-hand adjusting screw, and its tension arranged to restore the armature at the conclusion of the dot operation.



Front view of automatic Morse key.

A supporting pillar is fitted at the back end of the mounting place, and to this is fitted the vibration damper, and a catch with which to lock the rod and weight.

The mechanism is fitted into a base measuring $6\frac{1}{2}$ in. \times 4 in. \times $\frac{3}{4}$ in. suitably recessed to allow fixing screws, terminals and connecting wires, to drop into position.

A screw in the side of the armature is used to lock it to the spindle. One pivot cup is soldered to the mounting plate, the other being fitted to a screw which passes through the triangular top plate and is locked by a terminal nut.

The adjustable screws which have knurled heads, are made by sawing the heads off screws of suitable length and thread size; brass terminal heads are then screwed over one end and neatly soldered.

The dash lever paddle is shaped from a piece of ebonite $1\frac{1}{2}$ in. \times 1 in. \times $\frac{1}{4}$ in. and is slotted so that the dash lever fits flush into it. This gives it a neat finish and prevents any chance of the paddle moving out of the horizontal. Four screws through the base register

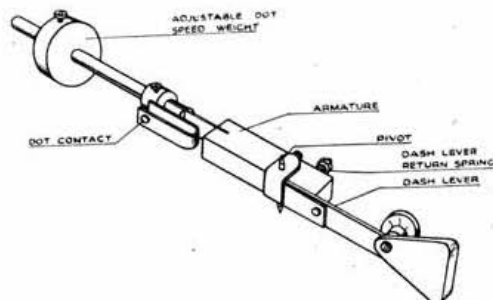
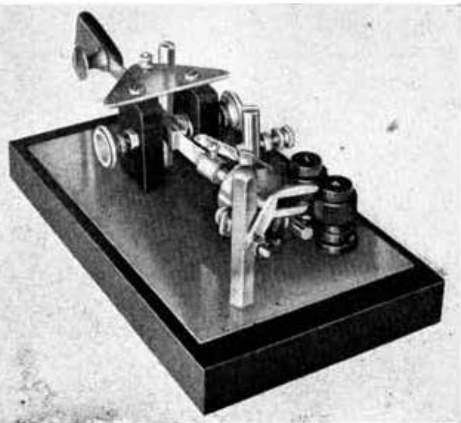


Fig. 2

Sketch of operating arm.

with four nuts soldered to the bottom of the mounting plate, and by this means the mechanism is firmly clamped to the base. Hard wood could be substituted as material for the base, and would be more easily recessed.



Rear view of automatic Morse key.

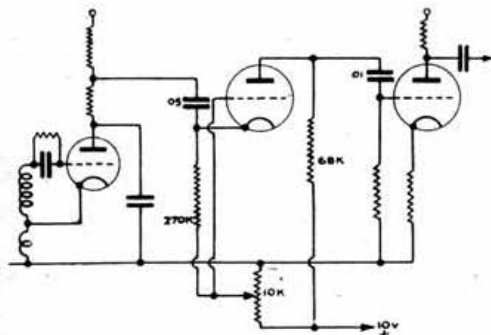
The two contact pillars are insulated from the mounting plate with ebonite collets, and connected together; this connection is taken to one of the terminals, which is also insulated, the other terminal being in contact with the frame.

The key illustrated has a base of steel, crackle finished. The total weight is 7 lb. which is sufficient to prevent the key from wandering about the table when in use.

Series Noise Limiter

"Spenny" submits a circuit of a modified Dana Bacon noise limiter which he claims gives a greater control than the original. It can be used to follow a detector stage with positive output and works satisfactorily with even small receivers of the 1-v-1 type.

The limiter valve can be any triode such as a 76, MH4 or HL2 and values are not critical.



University College, Southampton, Amateur Radio Society

The Council has been pleased to grant affiliation to the newly formed U.C.S. Amateur Radio Society, whose Chairman is Prof. A. M. Taylor, M.A., Ph.D. The Club has a membership of approximately 20.

Record attendance at No. 1 S.S. Meeting

The Chief Instructor (Wing Commander J. E. Kirk), VE5OR, QA, LA2UA, G2WY, 4HY, 8ON, 2APU, 2CIW, 2FCV, 2FIN, 2FNS, 2HJN, BR54169, 4234, 4691, 5316, 5467, 5577, 5700, 5737, 5792 and BR5502 were among the 96 who attended the meeting on January 4 to hear a lecture by Ft./Lt. Thorndyke on "Frequency Modulation." Speaking for 100 minutes on a very wide subject, Ft./Lt. Thorndyke discussed the theoretical advantages of F.M., leading up to practical circuits typical of present day design. At the conclusion of the lecture a hearty vote of thanks, proposed by Cpl. Cole, 2HJN, was carried with well merited applause.

It was with regret we heard that our old friend "Bob" Hope, LA2UA, is leaving us, and we wish him the best of luck. He has been one of our most constant supporters since G6CL "discovered" him during his visit to the school last August.

The writer on behalf of the committee wishes to apologise to all concerned for the unfortunate cancellation of the two December meetings. In each case the circumstances were beyond our control. In view of the fact that, if a lecture is to be advertised in THE BULLETIN, it has to be arranged well in advance, it is not proposed to advertise specific talks in future, as Service requirements etc. make it impossible to say whether a certain prospective lecturer will be with us in, say, two months time. Accordingly, the dates of meetings *only* will be published. Details are well published throughout the camp and the authorities at the camp cinema have been kind enough to allow us a screen advertisement. If any section of the camp does not get notices of meetings, these can be obtained by applying to Cpls. Ball, Cole or Chadwick at the Corporals Club, 1 Wing Institute, East Camp. G8ON.

The British Institution of Radio Engineers

The address of the British Institution of Radio Engineers has been changed to 9 Bedford Square, London, W.C.1, where adequate facilities are available for the Institution's work. Lectures will, in future, be held at the Institution of Structural Engineers, 11 Upper Belgrave Street, London, S.W.1.

The London Section programme for the next few months is as follows:—

Modern Condenser Technique with Special Reference to Electrolytic Condensers—J. H. Cozens, B.Sc., A.M.I.E.E. January 23.

Industrial Application of Electronics—J. H. Reyner, A.C.G.I., B.Sc., A.M.I.E.E. February 19.

The Functions and Properties of Acousto-Electric Transducers—L. C. Pocock, A.M.I.E.E. March 26.

Selective Methods in Radio Reception—E. L. Gardiner, B.Sc. April 29.

Cathode Coupling and Decoupled Amplifiers—S. Hill, A.M.I.E.E. May 28.

Pulling Power

Some months ago G6WXA advertised in our Small Advertisements section for a copy of the *Call Book Magazine*, publication of which has now been suspended. He recently received an offer by airgraph from L./Tel. Scholes, VE5OY, located in Esquimalt, British Columbia, Canada.

* * *

Mr. E. W. Fair, 4095, 50 Ashlands Road, Harpfields, Hartshill, Stoke-on-Trent, asks: "How is the A.C. voltage from the grid system, frequency time-controlled to 50 or 60 c.p.s.? Is it controlled by means of a governor on the turbo alternator or by a reactor?" Can any member supply the required information?

Thanks

The General Secretary and Miss Gadsden thank all members who sent them Christmas and New Year greetings. They were particularly pleased to receive a number of artistically-designed Airgraphs from friends abroad.

OUR FRONT COVER

This month the British-made Raymart "Speed" Key forms the subject of our front cover illustration.

The contacts of this excellent key are of $\frac{1}{4}$ -in. solid sterling silver. A high grade of spring is fitted and gap adjustment is easily and accurately carried out. The base of the key is drilled for two-hole screw fixing. The appearance of the instrument is all that can be desired, and the metal parts are instrument lacquer finished. The Price is 8/6, post paid. There is also a Raymart KIT OF PARTS available for building your own G.P.O. Type Morse Key. Price only 7/6, post paid.

We take this opportunity of wishing all members of the R.S.G.B. a Bright New Year and an early return to the piping days of peace. Raymart Ltd., 48 Holloway Head, Birmingham, 1.

KHAKI AND BLUE

● Writing from the Falkland Islands, C.Q.M.S. Harry Counce, **G5KS**, pre-war T.R. for Liverpool, reports meeting VP8AD and SAJ. He says: "This spot is just right for DX, despite all the high ground that is to be found here. I only wish the old TX could be brought down here for a wee while to test it out with a VSS call tacked on it." Don't we all!

● From North Africa comes news of "Early Bird" Sgt. Ernie Dolman, R.A.F. **2DCG**. Up to the time of writing (early December) he had made only one ham contact and that with Maurice Newman, **G3DZ**, who is—or was—in the Air Sea Rescue Service. Ernie's chief concern seemed to be that no broadcast set was available to bring in news from home, but knowing something of his early training with the B.E.F. we anticipate receiving word soon that this deficiency has been made good!

● P./O. The Hon. John Forbes, **G4JL-E18N**, (now at No. 1 S.S.) would be glad to hear from old friends, who are asked to write via R.S.G.B. H.Q. Members serving at No. 1 S.S. will be able to contact him c/o the Officers Mess.

● Sgmn. G. V. Haylock, **2DHV**, who was recently reported to be in India, is now serving with the Persia and Iraq Force under canvas in the wilds. He sends 73 via **2HKU** to all old friends.

● S. Pearson, **2FJS**, who was on the same course at No. 1 S.S. as **GM6JL** and **2BIB** has been granted his commission as P./O. He would like to hear from **G2LK**, **3QV**, **3RY**, and **ZL1L**. Letters should be sent c/o 20 Windsor Road, Victoria Park, Dorchester. **2FJS**, who was Secretary of the Stockport Radio Society, sends greetings to all ex-members of that Society.

● In a letter dated early December F./Lt. Ken Walker, **GW2WO** (brother of **G5JY**) sent news from Malta. "To-day," he wrote, "was a red-letter day, for a copy of **THE BULL**, arrived—the first I have seen for 14 months. Things have been very hectic but now it's quiet." Jack Sutton, **GW2NG**, who was on the island for a long time has now left to fill a S./Ldr. position elsewhere. During an earlier spell of duty in Egypt Ken met **G2GB**, **5HI** (now a Wing Commander), **5VU**, **6CW**, **SU1WM** and many W amateurs.

● After two years and ten months service in Gibraltar Percy Greenwood, **2BUJ** (not **2BAP** as stated last month) is now back in England. Shortly after his arrival he contracted a chill which put him into hospital in Swindon (his home town), for a while.

● Cpl. E. Puller, **4631**, now on a pre-con. course at No. 1 S.S. sends greetings to all in numbers who are or were at 20 O.T.U. His friends will be glad to learn that his wife presented him with a daughter—Rosamond—two days before Christmas.

● L.A.C. J. D. Trelease, **5815**, Hon. Secretary of the Advanced Air Headquarters, Western Desert, Amateur Radio Society, reports by air mail that the Society was formed last September. Technical lectures are features of their meetings whilst several members spend their leisure time on constructional work. Morse instruction and lectures on elementary radio theory are given weekly. The Club hopes to make many contacts through the medium of posters displayed in Services Clubs in Alexandria. Five members of the Club including the President—F./Lt. Bean—have recently joined the R.S.G.B.

● P./O. Peter Halliday, **G8PI** now with a Heavy Mobile W./T. Section attached to the P. & I. Force wishes to be remembered to all old friends. He has met John Curnow, **G6CW** in his travels. ● L.A.C. S. White, **4512**, in answer to L.A.C. Newman's enquiry in the November issue, mentions that he has served as a W.O.M. in the Air Sea Rescue Service for the past year. He finds the work very interesting as the radio equipment used in the high speed motor launches provides opportunities for studying its operation under rather unusual conditions.

● F./O. Ted Williams, **G2XC** writing from an R.A.F. station in Berwickshire, reports meetings with P./O. Bishop, **VO2F** and P./O. Smith, **YK1LA**. As **W9BFU** is also on the staff many interesting rag-chews have taken place. Ted seeks news of **G6NZ**. As far as we know the "elusive Leon" is at No. 7 S.S.

● "Ham" Whyte, **G5WY**, now S./Ldr. i/c Technical Section, No. 2 S.S. hopes to meet members serving at the school. He reports that S. Ldr. **G2OH** Clarence Goode, known to all "Early Birds," has left No. 2 and is now in **VE5**.

● Fred Wingfield, **G3CX**, recently invalided home after being knocked about in Libya, has been discharged from the Army. We hope he will soon be fully restored to good health.

● S./Ldr. G. S. Woolf, **G3ZI** (H.O., R.A.F., Ceylon), sends New Year greetings to all old friends and would be glad to receive letters from them.

● In an airgraph dated November 22, Chm. R.M. Jeremy, **2CMJ**, offended a sensitive censor by referring to a couple of call signs! The gist of his letter is, however, very clear—he wishes to have his thanks recorded to Alex Hoekstein, **SU1AX**, for the many kindnesses which he has shown to him during his stay in **SU**. We, too, appreciate the way **SU1AX** has helped many G's now serving in the M.E.

● On New Year's Day Wing-Commander G. M. R. Scott Farnie, **GW5FI**, broadcast from hospital a message of greeting to his wife in the programme "Cairo Calling." **5FI**, who is a member of Council, was recently involved in an air crash whilst serving in the Middle East. We wish him a speedy recovering.

73.

G2GK (Torquay), to **G2VV**, **3JG**, **5WP**, **6WN**, **8SM**, **2DLX**. **G6SO** (10 Sydney St., Scarborough), to **G3MI**, **4FO**, **4HK**, **6LN**, **6QF** and all absent friends.

G15HU (260 Grosvenor Road, Belfast), to **G2LT**, **3PR**, **SS**, **IV**, **5QU**, **LP**, **6UC**, **8PI**, **GW3CP**.

GM2NQ to **GM3LG**, **3ND**, **3SW**, **3XO**, **8SQ** and **G5IL**.

GW2WO (R.A.F., Malta), to **GW2IP**, **OP**, **SN**, **UL**, **5FI**, **KJ**, **OC**, **G3GH**, **5AK**.

2FJS (R.A.F.), to **G2FS**, **SHG**, **G15HU**, **6TK**.

Ham Hospitality

Following the publication in our October issue of a comprehensive Ham Hospitality List, we received several additional offers which are now recorded.

CARDIFF.—P. R. Jenkins (**GW3VL**), 14 Keynsham Road, Whitechurch.

HENLOW, BEDS.—S. Richards (3723), 7 Pollards Nurseries, Henlow Camp.

PEMBROKE.—Capt. G. C. Price (**GW2OP**), Bank House, Meyrick Street.

READING.—R. C. Horsnell (**G2YD**), * 21 Nelson Road, Caversham. (Reading 72871).

SWANSEA.—W. Bowen (**GW4CC**), Thistle Dhu, Killay.

SHEPPEY.—E. H. Trowell (**2HKU**), 27 Unity Street.

* Previously listed under **CAVERSHAM**

Silent Keys

We record with regret that the following members have been killed, or have died on active service.

Flying Officer S. W. Clark, R.A.F.V.R., **2AMW**, of New Malden, Surrey.

Sergeant E. Cowan, R.A.F.V.R., **5019**, of Great Ayton, nr. Middlesbrough. Killed September 5, 1942.

L.A.C. A. M. Fyfe, R.A.F.V.R., **4230**, of Dumbarton.

2nd Lieutenant F. Horky, Czech Forces in Great Britain, **OK2HY**.

Lieutenant M. F. Somerville, R.N., **G5SV**, of Yarmouth, I.O.W.

Pilot Officer J. E. Walford, R.A.F.V.R., **2FVN**, of Bicester, Oxfordshire. Killed during October, 1942.

Sergeant E. C. Ibbotson, R.A.F.V.R., **5212**, has been reported missing from air operations.

A tribute to F/O Stanley Clark, 2AMW

One of the first to volunteer for the C.W.R., Stan Clark was called up in September, 1939, and like many other amateurs, served on Fitting Party duties in the R.A.F. In September, 1941, he was granted a commission and posted to Aden on signal duties. He fell seriously ill a few months later and was brought home for a delicate operation. He arrived in England on December 14, but succumbed on the 22nd of that month in Oxford Military Hospital.

Prior to the war, **2AMW** was Assistant Editor of *The Short Wave Magazine* and it was largely due to his efforts that its circulation reached a very healthy figure.

Stan's quiet, cheerful disposition, and ready smile will be missed by his many friends everywhere.

Our deepest sympathy goes to his widow and two children. **G3BR**.

ARE YOU AT

No. 1 S.S. OR No. 1 R.S. ?

If so, you are invited to attend Meetings in Hut 165 (No. 1 S.S.). Details from Cpl. Chadwick (**G8ON**), Cpls.' Club, East Camp.



MEMBERS ON ACTIVE SERVICE

Fortieth List

WE publish below our fortieth 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 December 31, 1942.

Rank and Name	Regiment or Branch of Service	Pre-war Call or B.R.S.
P/O R. W. Bell	R.A.F.	GM3MX
Cpl. N. T. Bence	"	5849
F./Sgt. Bradford	"	5842
Ldg. Radio Mech. I. D. Bristow	F.A.A.	5833
L.A.C. D. Brown	R.A.F.	5852
Major D. A. L. Dwyer	R.A.	4654
A.C.1 C. W. Finch	R.A.F.	5834
L.A.C. R. B. Forge	"	4616
A.C.2 P. J. Frost	"	5744
NA.II S. J. Garner	F.A.A.	3770
Cpl. W. L. Grummitt	R.A.F.	2CMP
Sig. R. Gurney	R. Sigs.	4607
P.O. Tel. J. Haw	R.N.	454
L./Cpl. J. P. Hawker	R. Sigs.	G3VA
L./Cpl. T. F. Higgins	"	G8JI
Sig. K. Hoole	"	5841
L.A.C. J. Jackson	R.A.F.	2CFF
L./Cpl. S. E. Jones	R. Sigs.	2FWA
P/O K. J. Jenkins	R.A.F.	4047
Sig. R. T. Jenks	R. Sigs.	2DYZ
A.C.2 A. Johnson	R.A.F.	4013
O./Tel. K. Knott	R.N.	5748
A.C.1 H. G. Leven	R.A.F.	5851
L.A.C. G. C. Manning	"	G2IK
L.A.C. L. S. Massingham	"	5743
Tel. D. H. Matthews	R.N.	5836
P.O. R./Mech. J. E. Maxwell	"	G13ML
L./Cpl. J. M. Miller	R. Sigs.	GM4MM
A.C.2 C. J. Mitchell	R.A.F.	5829
A.C.2 W. H. A. Morehouse	"	G4DK
Cpl. D. H. Morley	"	4634
L.A.C. P. C. Morton	"	G3DY
Cpl. J. R. Muddell	"	2AOY
L.A.C. J. Norman	"	5746
Lieut. S. O'Hagan	R.A.M.C.	G2CR
Sgt. L. A. G. Parnell	R. Sigs.	G8PP
Sig. W. W. Peat	"	3740
T./Cpl. D. R. C. Pettigrew	R.A.F.	G4BQ
Sig. W. C. Phillips	R. Sigs.	5847
Sgt. R. M. Smart	R.E.M.E.	5853
Cpl. F. Smith	R.A.F.	2CZF
Sig. G. Spriggs	R. Sigs.	G4KG
Cpl. L. J. Stevens	R.A.F.	G3YH
A.C.2 R. W. Tanner	"	5423
Dvr. J. O. Thomas	R.A.S.C.	4005
L.A.C. A. L. Thwaites	R.A.F.	5848
Tpr. W. W. Turner	Royal Tank	2CBH
Sgt. C. L. Turville	R.A.F.	3482
Ft./Lt. G. E. Veasey	"	4016
A.C.1 D. C. Whitehouse	"	5747
A.C.1 W. H. E. Wilgoss	"	5830
Sgt. R. A. Wilkinson	"	5447
A.C.1 C. Wilson	"	4008
Cpl. C. Wright	"	4645

Congrats

● To C. C. Algar, G6AU of Cheadle, Surrey, who has been commissioned Pilot Officer after having gone right through the ranks. His many friends, especially those who knew him as an instructor at No. 1 Radio School, will join us in wishing him every success in his new sphere of activity.

● To R. M. Bangay, G3DW, on his promotion to Wing Commander. He has recently returned to England with his family after serving for two years in Canada. Letters should be addressed c/o Lloyds Bank, Berkhamstead, Herts.

● Also to "Early Bird" H. Fenton, G8GG, who is now a Pilot Officer. He recently left for a destination abroad where he hopes to meet S./Ldr. Maurice Brookes and others who were with him in France during the early months of the war. After the evacuation he served as a Sergeant instructor at No. 1 S.S.

● To Sgt. and Mrs. Greenaway, G2LC, on the safe arrival of their second Junior op. Roger Sinclair, on November 24. Cyril, who is now in the R.A.F. is living at 56 Jubilee Drive, Ruislip, at which address he will be glad to receive news of old friends.

● To F./Lt. J. N. Walker, G5JU, who was Mentioned in Despatches in the New Year's Honours list. No details are available but "Jerry's" many friends in the R.A.F. will be glad to learn that his work has been officially recognised.

PRISONERS OF WAR FUND

THANKS.—The General Secretary acknowledges with thanks on behalf of Council, receipt of donations from:—Anon., 10s.; District 11 Junk Sale (per BRS1060), 10s.; District 4 (per G6VD), £1; A. E. Ashford, G5AB, 5s.; London Telegraph Training College (per Maurice Child), £2; E. S. Elliott, 3341, 10s.; J. Longridge, G3DN, 5s.; G. E. Veasey, 4016, £1; Anon., 3s. 7d.; Mrs. Flower and Dennis, £5; E. G. Finch, 2755, 10s.; Mrs. Woolatt, BRS4807, Bazaar and Party, £8 5s.; G. Taylor, 3619, 5s.; G8CY and family, 10s. 6d.; H. W. Simpson, G8D1, 10s.; Rev. N. F. Waring, E18J, 2s. 6d.; J. Hamilton, 2B1J, 15s.; A. Butcher, 4218, 3s.; H. J. Packe, G3OJ, 4s.; J. Murdoch, GMSFT, 10s.; No. 1 S.S. (per G8ON), 6s.; W. F. Thomson, 3425, 5s.; W. Grummitt, 2CMP, 5s.; J. Brynildsen, LA9N, £2; P. C. Moore, G3SM, 10s.; J. Hum, G5UM, 10s.; D. Low, GW5WU, £2 2s.; District 7 (Croydon) (per G2DDP), £3 5s.; South Beds. A.R.S. (per 3538), 10s. 6d.; Mrs. Quartermaine, £5; District 4 (Nottingham via G8DZ), £1 5s.; S. O'Hagen, G2CR, £3 7s. 6d.; F. Barnard, G4FB, 5s.; P. R. Jenkins, GW3VL, 10s.; A. F. Thompson, 2BXJ, 5s.; District 13 (per G3ST), £1; J. Croysdale, G5US, £1; W. O. Wright, G6FO, £10. Receipts to date, £702 1s. 2d. Expenditure to date, £199 9s. 10d. Balance in hand as at December 31st, £502 11s. 4d.

DONATIONS.—Among recent donations received was a cheque for 20 guineas from the London Telegraph Training College, Earls Court, whose Managing Director is our distinguished Vice-President, Mr. Maurice Child. In forwarding the donation Mr. Child mentioned that many ex-pupils of the school, who are also members of the Society, are serving with the Armed Forces of the Crown. Members who were trained at Earls Court are invited to forward their names to Headquarters for the purposes of record.

Mrs. D. Woolatt, BRS4807, wife of S./Ldr. G. S. Woolatt, G3ZI, who is now in Ceylon, organised a party and bazaar at her home in Hinchley Wood, Surrey, and raised £8 5s. for the Fund. She was assisted by Mrs. Woolatt, Senior.

BOOKS.—Mr. C. H. L. Edwards, G8TL, after despatching more than 300 books to members who are Prisoners of War in Germany and Italy, again appeals for light reading material. Members who are able to assist are reminded that all markings and annotations must be removed before the books are sent in.

NON-MEMBERS.—Arrangements are being made to send parcels to three non-members who held call signs at the outbreak of hostilities. Further names and P.O.W. addresses should be forwarded to G8TL.

News from the Kreigies

Lt. Dennis Flower, G8TO, passed, with Honours, Part II of the Institute for Brewing Exam., and obtained a 1st Class Certificate in the Brewing paper set by the City and Guilds Institute, London.

L.A.C. Richardson, 2CXT, is taking four classes of students in electrical engineering.

Radio Officer G. M. Hindle, 3692, asks that his thanks be recorded to all who have made it possible for him to receive parcels.

Frank Marshall, G2XQ, reports the safe arrival of numerous parcels and expresses his hearty appreciations to all concerned. "My fellow exiles exclaim, as I do, on receipt 'good old R.S.G.B.'"

Old friends of Mervyn Campbell, VK3MR, will be pleased to hear that he has now received his first R.S.G.B. "next of kin" parcel. (Snowy was officially adopted by the Society last year.) Because his hair is biased almost beyond cut-off, we gather that the comb which was included will not be used for awhile, but since the parcel arrived he has become the best shaved man in camp! He is running advanced and elementary radio classes and expects to produce a crop of hamus after the war. He concluded his letter to G8TL with "three cheers for R.S.G.B. and 73 to all."

Tony Lister, G5LG, also reports the safe arrival of two Society parcels, one containing books. He was particularly grateful for "The History of Science" which has apparently been in great demand around the camp. In letters to his mother (she received nine in three days written at different times between October 9 and November 10), he asks that his thanks be conveyed to all members who have made it possible for him to receive R.S.G.B. Fund parcels.

MERCHANT NAVY

First List

AN attempt to compile a record of members serving in the Merchant Navy several appeals have been published in the past. Information has been slow in coming through but sufficient is now available to prepare a first list. The co-operation of members is solicited in bringing the record up to date.

Name	Rank	Call
D. Q. Aldridge	Chief Radio Officer	GM5RH
R. J. H. Baldwin	1st Radio Officer	G3WZ
J. C. Barron	Radio Officer	GM4MG
H. Burtoft	"	G8LO
A. Dunsire	"	GM8KQ
D. Gillies	4th Eng. Officer	2FZT
H. B. Lambert	Radio Officer	G8QL
K. J. Thomson	"	G13VQ
R. M. Strickland	"	2CBQ



IS YOUR SUBSCRIPTION DUE ?

PROMPT PAYMENT ASSISTS HEADQUARTERS

BRITISH ISLES NOTES AND NEWS

DISTRICT 1 (North Western)

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

Bolton.—An attendance of seven which included Mrs. Moorcroft, wife of 2ABT, was recorded at the meeting held at 2DVQ on December 6. 8PW was also warmly welcomed. The occasion was signalled by the presentation of an electric mantle clock by 2ABF (on behalf of the Bolton Radio Society), to 2ABT, as a somewhat belated wedding gift. BR54618 is fast developing into a first-class dart player as a result of joining the local YL fire-watchers.

The next meeting will be held at 2BDA, 18 Morningson Road, Bolton, at 2.30 p.m., Sunday, February 7, 1943 (B.N. or O. tram routes pass the end of Morningson Road).

The report from 2DVQ is the only one received this month, but when the other T.R.'s have recovered from their Xmas orgies no doubt further news will be forthcoming. G6CX

DISTRICT 2 (North Eastern)

D.R.: C. A. Sharp (G6KT), 316, Poplar Grove, Gt. Horton, Bradford, Yfd. 10772. Scribe: H. Beadle (G8UO), 13, Chaudos St., Keighley.

We are pleased to announce that BR52317 and G5VY have agreed to act as T.R.'s for Leeds and Morley respectively.

BR53593 who is temporarily resident in Otley wishes to meet members in that locality. QRA "Roseville," Harcroft Road. Due to an error, it was reported last month that 3KB was a P.O.W., this should have read 3RB. 8UO had as big a shock as Mrs. 3KB on seeing the "news"! Mrs. Johnson says her husband is O.K. and is attempting to attend meetings in the M.E. He sends 73 to old friends. 5GJ reports it and says a 10 or 100 watt ticket will be of little use after the things he has seen and done with the R.A.F.! He also reports that 4DY is a Sgt. Radio Observer, 8FW is in the M.E. and 8UV is in the R.A.F. 4412 recently visited H.Q. but found no "hams" there, he intends to call again and hopes for better luck. (Sorry we were out G6CL.) 2LT had a land line QSO with 4JW who reports fit and well and says that other Sheffield members are busy with work of national importance. 8IO recently visited 2LT who demonstrated his inter-communication installation made with an old BCL receiver and an extension speaker. 2LT would be pleased to hear from Sheffield members in the Forces with a view to passing forward notes for publication.

The D.R. reports meeting 2BH who wished to be remembered to old friends in Bradford. We understand that our pre-war D.R. Leslie Parry, G6PY, is an officer in the Barnsley Squadron A.T.C. 2JY and 48W are also in the A.T.C. 2FDR, now at Cambridge, has recently built a C.R. oscillograph.

The D.R. will be at home to members on Wednesday, January 27 from 7 p.m. onwards and asks all who can to attend. He suggests that similar "at homes" be arranged in other areas as representative meetings are not possible at present due to travelling difficulties. He hopes to run a P.D.M. later. In the meantime members are asked to suggest convenient times. G8UO.

DISTRICT 3 (West Midlands)

D.R.: V. M. Desmond (G5VM), The Chestnuts, Gilbert's End, Works. Scribe: E. J. Wilson (2FDR), 48 Westbourne Road, Olton, Birmingham, 27.

Birmingham.—At a meeting of M.A.R.S. held on December 13, a general discussion took place. G5BJ gave an interesting account of his early wireless days.

The D.R. sends his seasonal greetings to all members who read this column. He much regrets that notes have been few and far between during 1942, but appreciates the difficulties that exist. He would like to hear from Service members if it is only just to say in which Service they are serving. 2FDR.

DISTRICT 4 (East Midlands)

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

Nottingham.—A good attendance was recorded at the December meeting, when apparatus submitted for the contest was judged. First and second prizes were won by 5251 and 2A00 both of whom entered receivers. A collection was made for the P.O.W. Fund and the useful sum of 25s. raised. A welcome visitor was 2HHI, now a naval wireless mechanic. The next meeting takes place on January 24 at 3 p.m. at 2A00, 78 Henry Road, West Bridgford, Nottingham.

Leicester.—Although attendance at the December meeting was again low, those who did turn up were enthusiastic. 2IX demonstrated his new amplifier, thereby giving us a taste of things to come, and incidentally starting a debate on licensees after the war. The next meeting will be held at GVD, 9 Cecilia Road, Clarendon Park, Leicester, on January 24 at 2.30 p.m.

Congratulations to 4341 who has just been promoted to corporal. He would like to hear from 2FNW. 2CFC has been posted to a station in the south-west.

Thanks are extended to 2OU who still keeps us in touch with Derby, he would like to hear from 2TL. 8BN is still very much alive in the R.A.F.

GVD thanks all members who sent him Xmas greetings and takes this opportunity of wishing everyone a "much happier new year." G6VD.

DISTRICT 7 (Southern)

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

Bournemouth.—Sgt. Squires, 2DBF, who was on leave at Christmas is with the R.A.F. in a remote part of District 7 but in spite of this apparent difficulty, ham meetings are held. (via 2HNO.)

Conisford.—G8IN, bombed out during the early raids of 1940, has had his house repaired and is now living there again. A welcome is extended to 2BCU who has come to reside in the district. The T.R. has had another visit from VESKE and his wife. (via 3003.)

Croydon.—The December meeting held at 2DP's was attended by 16 members including 2LW, 3ST, 4NI, 5BT, 5PY, 5XW, 8UG, 2FWA, 2HMV, 1545, 4324, 4584, 4603, 5332, and 8U5KW. The main feature of the meeting was "Clarry's" Radio Quiz, which was enjoyed by all who took part in it. The winner (G5BT), obtained 42 points, closely followed by 8U5KW with 37, and 4603 with 36. (The North London winner scored 49. G6CL.) 5BT was presented with a 1940 Call Book, donated by 2DP. The proceeds of a small junk sale plus the usual monthly collection amounted to £3 5s., and this was credited to the P.O.W. Fund. After leaving the meeting in the black-out 8U5KW walked into a small brick wall, and fell over the top. Slight injuries and torn clothes resulted.

We welcome 8UG to the district. 2RD has been home on leave. 5BT is busy with a new frequency meter, 4584 has left this area for Diss in Norfolk where he hopes to contact members. (via G2DP.)

Kingston.—G3MF reports, via airgraph, from VU that he has met Major Jack Drudge-Coates (VU2FO, ex G2DC), ZE1JM and two or three Indian amateurs. Congrats on the commission O.M. and also on the ability to teach radio in Urdu! G5WP.

DISTRICT 9 (East Anglia)

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

From 2BXJ of Yarmouth we learn that Don Davy has been very ill in Palestine, but fortunately he is now on the road back to good health. 2BXJ wishes to inform his friends that his house is named "Hermitage" not "Hamstage" as given in a recent issue of THE BULL. (Seems to us the latter might be a better name if the wife does not object! D.R.)

Mr. Buck of Gorleston, our only regular correspondent, reports that 4991 is building a frequency meter. He received an airgraph from 3766 who is in the M.E. 4588 is now in the R.A.F. training as a Wireless Mechanic. G2XS.

DISTRICT 10 (South Wales & Monmouthshire)

Scribe: H. H. Phillips (GW4KQ), 82 Cottrell Road, Roath Park, Cardiff.

An apology is offered to District members for the non-appearance of these notes during the past few months, but it is hoped that sufficient co-operation will be forthcoming in future to permit their more regular appearance. G5FN having relinquished his post as Scribe, owing to pressure of business, all news and topics should now be sent to GW4KQ who has agreed to act in his stead.

Cardiff.—The next meeting, at which a discussion on V.H.F. technicalities will take place, is to be held at 3 p.m., January 24, at the home of GWSUH, 29 Ladysmith Road—off Penylan Hill—Penylan, Cardiff. For the benefit of Service personnel in this area, the Scribe may be reached, during business hours only, at Cardiff 2697. A hearty welcome is extended to 2AMZ, 5299 and all who have joined the Society since the date of the last meeting.

A LECTURE

entitled

"CATHODE COUPLED CIRCUITS"

will be delivered by

Mr. A. HINE, B.Sc.(Tech.), (BRS4438)

at

The Institution of Electrical Engineers
SAVOY PLACE, VICTORIA EMBANKMENT
LONDON

On SATURDAY, JANUARY 30th, 1943

at 2.30 p.m.

Swansea and Newport.—News from these areas, will be appreciated. We welcome to membership 5325, 5350, 5643, 5673 and 5701.

The Scribe sends New Year greetings to all District 10 members wherever they may be and wishes them the best of luck and good fortune during the coming year. GW4KQ.

DISTRICT 11 (North Wales)

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

Local members were pleased to welcome GM6IW, 2DGO and 4410 at the Prestatyn meeting held on December 20. Others present included 1450, 2731, 3044 and 4762. Another successful junk sale was held and these will be regular features at future meetings. Discussions took place on V.H.F. technicalities, frequency modulation and the causes responsible for interference in the audio amplifier at a local cinema.

There has been a falling off in attendances at meetings during recent months due no doubt to most members being in the Services, or out of the District on Government work, but that should not prevent them from sending in items of news.

Members who have gear for disposal but cannot get to meetings may send it to 1060 who will make the necessary arrangements for it to be auctioned by 2731. A percentage of the proceeds will be given to the P.O.W. Fund and the balance forwarded to the members concerned. Back issues of THE BULLETIN and QST sell like hot cakes!

The next meeting will be held at 4762 "Vale View," Prestatyn, at 3 p.m. on January 24. The February meeting has been fixed in advance for the 14th of that month to coincide with a spot of leave due to the writer.

New Year Greetings to everyone and please let us have some news for inclusion in our next report. BRS1060

DISTRICT 12 (London North and Herts)

D.R.: S. Buckingham (G5QF), 41 Brunswick Park Road, New Southgate, N.11. Enterprise 3112.

Arrangements have been made to hold another social gathering at The Cock, Cockfosters, on Sunday, January 31, from 3.30 p.m. onwards. In view of the strain imposed on the accommodation at the last venture of this type (when an attendance of nearly 70 was recorded), members are urged to notify the D.R. by January 28 if they propose attending. Tea will be served at 5 p.m. and the inclusive charge will be 3s. 6d. Ladies, and members from other Districts, are cordially invited to support this function. The venue which is within 5 minutes' walk of Cockfosters station (Piccadilly Line) is also the terminus for one of the 29 "bus services."

The D.R. and Mrs. Buckingham were very pleased to meet many old friends at the Christmas "get together," held at Cockfosters, on December 23. Among those present were Mr. and Mrs. Winsford, G4DC, Mr. and Mrs. Clarricotts, G6CL, Miss May Gadsden, Capt. S. Higson, GW2PH, Mr. H. A. M. Clark, G6OT, Mr. E. Woodhouse, GZ-G28X and Mr. E. Prior, G3SH. Mrs. 4DC aroused the admiration of the company by accepting a challenge from the R.A.F. in regard to a little matter connected with a pint tankard. The official "sinking" times were: R.A.F., 9 seconds, Mrs. 4DC, 55 seconds! As neither of the competitors had been in training their achievements were considered quite satisfactory! G5QF.

DISTRICT 13 (London South)

A.R.'s: (Southern Eastern and Central), S. E. Langley (G3ST), 62 Dumbarton Road, S.W.2. (Western), E. H. Simmonds (G8QH), 17 Roedean Crescent, Roehampton, S.W.15. Prospect 1990.

South Eastern and Central Areas.—The "Ann" Trophy was awarded at the December meeting to Mr. F. W. Bennister, BRS4324 whose entries consisted of a 25-watt modulator and a fine example of a rack and panel arrangement. After the presentation the company enjoyed a selection of much appreciated records. Our thanks are extended to 4324 for allowing us to meet at his home. A collection amounting to £1 was made for the P.O.W. Fund.

2FRM who is with the R.A.F. in Southern Rhodesia sends greetings to old friends. (His full address can be obtained from 38T.) G8TN and 2GZ reported by land line and asked that their 73 be conveyed to all District members. The latter, although in the R.A., is engaged on work connected with the art of "brass pounding." 4641 (B. N. Watkins) has joined the Navy and looks swell—wait until he gets into another sort of swell! News of 80R would be welcome.

G2DP (presumably with an eye to what is happening in District 12) suggests holding meetings in a p.b.—sorry inn. Well for ever more!

It is hoped that all new District members will endeavour to support local meetings. They are assured of a hearty welcome. (See Forthcoming Events for details.) G3ST.

South-eastern Area.—Your scribe acknowledges gratefully the Christmas greetings that reached him, and sends to all area members—local or DX—his 73 for '43. 5KH and 6GR (guest artists) are the only entrants in the log this month, the impact of Christmas doubtless having caused some delay! 3AD sent a wonderfully illustrated airgraph from VU which is going the rounds. 4GD and 6DT reported by 'phone. Will any member who has written, and not received a reply, please send word to 8QH, who would also be glad to have confirmation of any recently-changed addresses. Here's to another twelve months' stride on the way to peace and "twenty." GSQH.

DISTRICT 14 (Eastern)

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

Chingford.—BRS5726 and G2HR were present at the December meeting held at GSDG. In spite of poor attendances to date another meeting will take place at 8 Bosgrove, The Ridgeway, N. Chingford, at 3 p.m., January 24. It is hoped that all members living in the area will attend. Take a No. 38 bus to Endlebury Road.

GSDG reports receiving letters from G5XI now at Troon, and 2FSR who is stationed near Aylesbury.

Chelmsford.—At the December meeting which produced a record attendance for war-time, we were especially happy to welcome VE4UO and VE5PM, who enthralled us with tales of the Canadian North West. 4UO was a Forest Ranger and 5PM a N.W. mounted policeman before the war! Others present were 6LR, 5HF, 5RV, 2555, 3650 and 5242.

8PB, who reports that his receiver is progressing, is now O./C. an R.A.F. signals station. Hearty congrats, Peter. SRS is also O./C. his station and we offer congratulations to him on his promotion to Pt./Lt. 2DY (R.A.F.) was here recently and met 5RV on business and pleasure! G5RV.

Forthcoming Events

- | | |
|---------|--|
| Jan. 23 | District 8, 3 p.m., at the "Bizzie Bee" Cafe, Bury Park Road, Luton. (Buses 1, 4, 22 from the town. Members are asked to bring radio photographs for display.) |
| Jan. 24 | District 13, 3 p.m., at 18 Parkthorne Road, King's Avenue, S.W. (No. 137 bus). |
| Jan. 24 | District 15 (High Wycombe section), 2.30 p.m., at G8IF, 1 Squirrel Lane, Booker, H.W. (Bus 38 from Station Yard to Squirrel Lane). |
| Jan. 24 | District 4 (Nottingham section), 3 p.m., at 2A00, 78 Henry Road, West Bridgford. |
| Jan. 24 | District 4 (Leicester section), 2.30 p.m., at G6VD, 9 Cecilia Road, Clarendon Park. |
| Jan. 24 | District 14, 3 p.m., at GSDG, 8 Bosgrove, The Ridgeway, N. Chingford. |
| Jan. 30 | London Meeting, 2.30 p.m., at the I.E.E. Lecture "Cathode Coupled Circuits," by A. Hine, B.Sc. (Tech.). |
| Jan. 31 | District 12, Social Gathering, 3.30 p.m., at The Cock, Cockfosters. Tea at 5 p.m. (For details see District 12 notes). |
| Jan. 31 | Scotland "A" District, 3 p.m., Room 24, Royal Technical College, George Street, Glasgow. (Enter by Montrose Street). |
| Jan. 31 | District 15, 6 p.m., at G6WN, 539 Oldfield Lane, Sudbury Hill, Greenford, Middlesex. (Piccadilly railway, or 18c bus to Horsenden Lane.) |
| Feb. 7 | District 7, 3 p.m., at G5BT, 31 Sefton Road, Addiscombe. |
| Feb. 16 | Scotland "A" District, 7.30 p.m., at The Institute of Engineers and Shipbuilders, 39 Elmbank Crescent, Glasgow. |

DISTRICT 15 (London West, Middlesex and Buckinghamshire)

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

Due no doubt to the time of year the D.R. has received rather more letters than usual. First we must mention an Air-mail Christmas greeting from Dev Deven, G4HF, who is Manager of the Optimists Company of E.N.S.A. in Bagdad. Another airgraph came from 2DZN who is in the R.A.F. (P.A.I.), whilst G5FG (R. Sigs.) and 3750 and 4889 (R.A.F.), sent Christmas cards. G2LC, 2FCJ and 2FUX sent letters. The former, an R.A.F. Sergeant, billeted at home, looks forward to meeting us again. 2FCJ, a Marine Fitter in the R.A.F., sees very little of the boats, as a P.A. equipment and the station band occupy much of his time. 2FUX is at an R.A.F. station on the South Coast and although a lot of A.R.R.L. and R.S.G.B. handbooks are about, there are apparently no hams. Sgt. Sulglak (SP1QA) who is still with us, sent Christmas and New Year Greetings to the District. We congratulate 2ADL and his wife on the safe arrival of a junior op.

The many friends of G2UV and 6LR will be sorry to learn that they had to spend Christmas in hospital. The former has recently undergone a serious operation, while the latter had a bad relapse after flu. We wish them a speedy recovery. Those who wish to drop them a line should write to 2UV via his home and to 6LR via the D.R.

From High Wycombe 4781 reports that 2RL and 6JK are busy with super-regens while 5666 has obtained a receiver.

Greeting are sent to 5688 and 5736 who will be welcomed at local meetings. So far no U.S. amateurs have been contacted.

In view of catering difficulties members are asked, where possible, to notify their intention of attending meetings. A P.C. will help considerably. For details of January meetings see "Forthcoming Events."

The D.R. would like to thank all those who sent seasonal greetings. GGWN.

DISTRICT 16 (South Eastern)

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

Two particularly interesting letters have arrived this month. The first brings greetings from Major R. Postill, SNO, who was at Tonbridge School before the war and has since been attached to Signals in the Home Forces. He sends his best wishes to all members and particularly to 2UJ, 5KV, 50Q, 60B, and 4AY. He may still be reached care of Tonbridge School and would be very glad to hear from any members who are able to write. The second letter is from Mr. T. N. Lloyd, 38L, who gives an interesting account of his experiences in Madagascar, and states that in addition to himself, 4XC, a G6 and a GM6 are on the island. 38L was a member of the Ashford group and he has pleasant memories of 5LT's kindness to him whilst convalescent at Alton, Hants. Like many others he is looking forward to the time when we shall all be on the air again.

Mr. Clacy, 6CY, sends his usual letter from Brighton and Hove and reports that 4NY and 6XF have both been on leave from R. Signals and are quite happy. He has also seen 3CX who is now invalided out of the Army after service in the Middle East. Other Sussex amateurs are still busy in their respective spheres.

The Deputy D.R. sends his very best wishes for 1943 to all members. G2WS.

DISTRICT 17 (Mid East)

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

News is on short ration, so how about a few letters chaps? Boston.—G2UK is now at an R.A.M.C. Depot in Yorkshire. Whilst there he met Dr. O'Hagan, 2CR, now a Lieut. R.A.M.C. Grimsby.—G5MT is still very much alive and kicking, but bemoans the fact that ham seems scarce in Gy! G2UK.

DISTRICT 18 (East Yorkshire)

District Scribe.: S. Davison (G6SO), 10 Sidney Street, Scarborough.

A cordial welcome is extended to Mr. W. Johnson, 5636, a new member resident in Scarborough. G6SO has received a letter from Mr. G. M. Jenkinson, 2FGQ, of Hull, who is serving with the R.E.M.E. in Scotland. He rejoined the Society more than a year ago and has looked in vain most of the time for District notes. He sends 73 to all old friends and expresses the hope that the District will live up.

We again appeal for news, however trivial it may seem. Remember that it will be appreciated by the "other fellow." G6SO.

Scotland

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

We thank all those who sent seasonal greetings and extend our best wishes for 1943 to members everywhere.

"A" District.—At the meeting held on December 27, in the Royal Technical College, Glasgow, GM4JO, gave the first of a series of talks on the Radio Amateur's Laboratory. This was followed by a lecture on the Generation and Distribution of Electricity given at short notice by Dr. Bradshaw. The lecture was much appreciated.

G3SL, who regularly attended meetings some months ago, writes from Madagascar and wishes to be remembered to all members.

"C" District.—A successful meeting attended by 10 members was held on December 20, at the home of GM5SC. The response given to the D.O.'s recent circular might have been better, but many of the replies gave interesting items of news. The District has been fortunate to secure permission to hold meetings in the Dundee Wireless College. These will take place on Sunday afternoons every few weeks, commencing early in the New Year. Arrangements are also being made to hold meetings at Perth and Montrose under the guidance of GM8HM and GM3KC respectively.

The D.O. has been pleased to meet Mr. Niven, 2CHN (ex-D.O. of "A" District) and also GM4HN who was home on leave from the R.A.F. We hope to welcome GM3NH of "H" District at our next meeting, as he is now resident in "C."

"G" District.—A welcome letter is to hand from GM5FT who volunteers to try to raise interest in the District. He will be pleased to hear from any one who has news. Greetings are sent to GM3TD who has been in Gibraltar for some considerable time.

"H" District.—The D.O. will appreciate reports from members—especially those who have not yet written. From the Middle East comes the news that GM3LG has met 4NM and 8FA. He has also discovered that 2CIB is attached to his station. 3LG is well and wishes to be remembered to all in "H." A welcome is extended to new member BR55731. GM2NQ has met G3PQ in the North of Scotland. GM6ZV.

New Books

EXPERIMENTAL RADIO ENGINEERING. (Second Edition.) By E. T. A. Rapson, M.Sc.(Eng.). Pitman; 159 pp.; 8s. 6d.

Outlines a series of 80 experiments ranging in scope from Series and Parallel Circuits to C.R. Tubes and Time Bases. In the chapter entitled "Thermionic Valves as Oscillators" many old favourites such as the Tuned Grid, Tuned Plate, Hartley, Colpitts and Dynatron, come in for consideration. Two experiments with Magnetrons are especially interesting.

There seems little doubt that the second edition of this book (which contains 170 illustrations) will enjoy as much popularity as its predecessor.

D./F. HANDBOOK FOR WIRELESS OPERATORS. By W. E. Grook, A.M.I.E.E. Pitman; 84 pp.; 3s. 6d.

We confidently recommend the second edition of this book to all who are working with D./F. equipment or who wish to volunteer for this branch of the R.A.F. when their training is complete. A new chapter on Aircraft D./F. will prove especially useful to air operators. There are 111 illustrations and the book is bound in stiff card covers.

EBONITE FOR ELECTRICAL PURPOSES.

A war emergency British Standards specification (234-1942) "Ebonite for Electrical Purposes," has recently been issued by the British Standards Institution, 28 Victoria Street, London, S.W.1. Copies are available, price 2s. nett, post free. The Society is represented on the Ebonite Committee of the B.S.I.

THE AIR CADET HANDBOOK ON RADIO. By J. R. Vesselo and R. D. Morrison. George Allen & Unwin; 96 pp.; 2s.

This is the latest addition to a series of handy pocket manuals devoted to technical subjects being studied by Air Cadets. Written in pleasing style, with maths reduced to a minimum, this book should prove of value to all young men who are training to become wireless operators or mechanics. Elementary theory is followed by some notes on the application of radio to aircraft and as an aid to navigation. There are 64 diagrams.

MORSE IN SEVEN DAYS WITHOUT AN INSTRUCTOR. By H. O. Lewis. Published by The English Universities Press; 1s. 3d.

Although the methods suggested are somewhat unorthodox they will undoubtedly produce the desired result—namely a sound knowledge of the code in one week—provided the student is prepared to follow them diligently. The graded exercises are well arranged and represent considerable thought on the part of the author, who is an A.T.C. Signals instructor.

A FIRST COURSE IN WIRELESS. By "Decibel." Published by Pitman; 5s.

This book, already well-known to radio students, has recently been fully revised. The new edition covers a wide range of subjects and is fully illustrated. Strongly recommended to all newcomers to the field of radio communication. Maths. have been reduced to a minimum and explanations made very lucid.

Letter to the Editor

The Maths. Master rises to the Bait

DEAR SIR,—With regard to the letter from Mr. T. C. Clark (BR5565) in the December issue of THE BULLETIN, I sympathise with his point of view but do not agree with it.

It is necessary for an author to introduce mathematics into his articles when the inferences drawn or conclusions reached, are based on theoretical considerations. This is, of course, if he wishes to present the complete picture and not give a series of conclusions with no "link" between them. He would then be a fair target for questions such as "How do you know that?"

What is not necessary, however desirable it may be, is that the practical man, interested only in results and conclusions, should be able to follow all this mathematical theory. If he can accept any conclusions, all well and good and he is no worse off; whilst the man who wants to know "how" and "why" is also satisfied.

One point raised is surely not at all true, in fact, it is a direct reversal of truth. Mathematical expressions, even though they are involved, are simple and universal ways of stating some facts in a condensed form. If this is not believed, one should try, and give in words any well-known radio formula—and then imagine all those words used every time the user of mathematics would have quoted a formulae.

The key to the whole matter is that BR5565 calls himself the "poor inept." Why give in? The maths. often used is much easier to follow than it appears.

Yours faithfully,

T. R. THEAKSTON (2DBK).

Mr. H. W. Sadler, G2XS (District 9 Representative) supports Mr. T. C. Clark. He feels that it would be desirable to devote the maximum amount of space to articles of a "ham" nature, leaving maths to *The Handbook and Supplement*. He points out that the average amateur likes to find things out for himself and in 99 cases out of a 100, he does that without the aid of maths.

HEADQUARTERS CALLING

The Society honours Professor C. L. Fortescue and Dr. R. L. Smith Rose

We record with much pleasure that Council has conferred a Vice-Presidency upon Professor C. L. Fortescue, O.B.E., M.A., M.I.E.E., and that Dr. R. L. Smith Rose, D.Sc., Ph.D., M.I.E.E., D.I.C., A.R.C.S., has been elected an Honorary Member.

Our new Vice-President has been associated with the Society from its earliest days and has followed with close interest its development in recent years. He is Professor of Electrical Engineering at the City and Guilds College, South Kensington, and was from 1911 to 1922 professor of physics at the Royal Naval College, Greenwich. He has undertaken important research in the development of radio telegraphy and has published his findings in numerous papers read before the Institution of Electrical Engineers of which body he is the reigning President.

Like his colleague, Dr. Smith Rose can also claim very early acquaintance with the Society having been a member of the London Wireless Club and the Wireless Society of London in the years between 1913 and 1922. He received his technical education at the Imperial College, studying physics at the Royal College of Science, South Kensington. He then took an advanced course in electrical engineering at the City and Guilds College.

Dr. Smith Rose joined the staff of the National Physical Laboratory in 1919 and later became a member of the newly-formed Wireless Division of the Electricity Department. Following the formation of a separate Radio Department in 1933, he became principal scientific officer. He was appointed Superintendent of the Department in 1939.

Our new Honorary Member has been associated with the Radio Research Board since it was formed in 1920 and has been responsible for many important investigations, especially in the field of direction finding. Last October he was elected Chairman of the I.E.E. Wireless Section.

Annual General Meeting

Minutes of the Sixteenth Annual General Meeting of the Incorporated Radio Society of Great Britain, held at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, on Saturday, December 19, 1942, at 2 p.m.

Present.—Mr. A. D. Gay (President) in the Chair, Mr. E. L. Gardiner (Executive Vice President), Mr. A. E. Watts (Immediate Past President), Messrs. G. A. Jessup, S. K. Lewer, and A. J. H. Watson (Members of Council), Mr. John Clarricoat (General Secretary), and about 80 members.

1. The President called upon the General Secretary to read the notice convening the meeting, after which Mr. Cleland proposed, Mr. Winsford seconded, and it was unanimously resolved that the Minutes of the Fifteenth Annual General Meeting, as published in the January 1942 issue of THE T. & R. BULLETIN, be taken as read and approved. The Minutes were signed by the Chairman.

2. In the unavoidable absence of the Hon. Treasurer, Mr. Watson proposed, Mr. Lewer seconded, and it was unanimously resolved to adopt and approve the Audited Accounts and Honorary Treasurer's Report for the year ended September 30, 1942. The President paid a warm tribute to the retiring Hon. Treasurer—Mr. H. A. M. Clark—and thanked him for his work during the past year. On a motion proposed by Mr. Milne, seconded by Mr. Bayliss, it was unanimously resolved that a formal vote of thanks be recorded to Mr. Clark for his service as Honorary Treasurer.

3. It was proposed by Mr. Dunnett, seconded by Mr. Craig, and unanimously resolved to adopt Council's report for the year ended September 30, 1942.

4. The Chairman announced that the following members had been duly elected to serve on the Council for the year 1943:—

Officers.
 President .. Mr. A. D. Gay, G6NF
 Executive Vice-President .. Mr. E. L. Gardiner, G6GR
 Hon. Treasurer .. Mr. A. J. H. Watson, G2YD
 Hon. Secretary .. Mr. H. A. M. Clark, G6OT
 Hon. Editor .. Mr. J. W. Matthews, G6LL
Members.—Messrs. F. Charman, G6CJ, D. N. Corfield, G5CD, G. M. R. Scott-Farrie, GW5FI, J. Hunter, G2ZQ, G. A. Jessup, G4HG, W. A. Searr, G2WS, and E. H. Simmonds, G8QH.

5. It was proposed by Mr. Milne, seconded by Mr. Wilkins, and unanimously resolved that Mr. John Ockleshaw be re-appointed Honorary Auditor for 1943.

6. The Chairman proposed that a very hearty vote of thanks be recorded to the President and Council of the Institution of Electrical Engineers, for permitting the Society to use the Institution Building for meetings during the past year. The proposal was carried with acclamation.

Professor C. L. Fortescue (President of the Institution of Electrical Engineers) in reply thanked the Chairman and assured the meeting that the Council of the I.E.E. were at all times pleased to assist the Society.

7. The President announced that Professor Fortescue had been elected a Vice-President of the Society.

He also announced that Dr. R. L. Smith Rose (Chairman of the I.E.E. Wireless Section) had honoured the Society by accepting the invitation of the retiring Council to become an Honorary Member.

The announcements were received with hearty approbation. Dr. Smith Rose, in thanking the Society for the honour which had been conferred upon him, revealed that he was a member of the London Wireless Club (forerunner of the R.S.G.B.) at its formation in 1913. He also spoke of his early association with the Wireless Society of London, and mentioned that he delivered a paper to the Society in 1922. He expressed the hope that the R.S.G.B. would continue to make good progress and stressed the importance to the community of the radio amateur as opposed to the person whose work is regarded as "amateurish."

There being no other business the President declared the meeting closed at 2.15 p.m.

Mr. A. J. Bayliss, B.Sc., GSPD, then delivered his lecture on "Frequency Modulation." Following the lecture Messrs. Milne, Chapple, Craig and Charman, were among those who joined in the discussion. At the invitation of the Chairman, Mr. Corfield proposed, Mr. Lewer seconded, and it was unanimously resolved that a very hearty vote of thanks be accorded to Mr. Bayliss for his excellent lecture. The motion was carried with acclamation. (It is hoped to publish Mr. Bayliss's lecture in an early issue of this Journal.—Ed.)

November Council Meeting

Resume of the Minutes of a Council Meeting held at the Institution of Electrical Engineers on Monday, November 9, 1942, at 6 p.m.

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

Apologies for absence.—Messrs. A. E. Watts, G. A. Jessup, J. W. Matthews and W. A. Searr.

1. Eighty-four applications for Corporate membership were accepted. Of this number 17 had been supported by references, whilst the remainder had been sponsored by Corporate members.

2. It was resolved to loan a further £500 to the Government free of interest (see letter published below).

3. Mr. C. Sharp, G6KU, of Bradford, was appointed District 2 Representative in succession to Mr. Milne who has left the District.

4. In connection with the future application of the Prisoners of War Fund, it was agreed that parcels should be sent to non-members as from January 1943.

5. It was resolved that in future all applicants for membership who are under 17 years of age, shall be asked to become Associates until such time as they have reached that age.

6. A further report on negotiations with the G.P.O. was received and considered, and correspondence from members dealing with post-war amateur operating conditions was discussed.

7. Professor C. L. Fortescue was elected a Vice-President of the Society.

8. Dr. R. L. Smith Rose was elected an Honorary Member of the Society.

Government Loan

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

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

"The Chancellor of the Exchequer is very grateful to the Incorporated Radio Society of Great Britain for lending the further sum of £500 to the country free of interest, making up the amount lent in this way to £1,000.

"Sir Kingsley Wood would be glad if you would convey to the members of the Council of the Society his warm appreciation of the spirit which prompts their continued help in the war effort.

"A Certificate will be sent to your Bank shortly giving title to repayment of the loan on the 13th February, 1943, or on any date thereafter on demand."

Bulletin Honoraria

Council has been pleased to award honoraria to the following members for their contributions to Volume 17 of THE T. & R. BULLETIN:—

Mr. A. O. Milne, G2MI, author of "The Mouth off the Air."
 Mr. H. R. Heap, G5HF, author of numerous "Experimental Section" articles.
 Mr. J. Hargreaves, G5VO, author of "The Cathode Follower."
 Mr. S. K. Lewer, G6LL, author of "A 4 Valve Band Switching Receiver for A.C. Mains."
 Mr. R. W. Addie, G8LT, author of "Negative Feed Back and its Application to A.F. Amplifiers."
 Mr. C. R. Beaven, 2BVD, author of "Classifying Conditions."
 Mr. J. Morris, 2DRR, author of "C. R. Oscilloscopes and their Uses."
 Mr. D. Tomlin, 2HMN, author of "Time Bases."

I.E.E. Meeting

Mr. Alfred Hine, B.Sc. (Tech.), BRS4438, will lecture on "Cathode Coupled Circuits" at the meeting to be held on Saturday, January 30, 1943, at the Institution of Electrical Engineers. The meeting will commence at 2.30 p.m.

NEW MEMBERS

Home Corporates

- W. H. ROGERS (G2SY), Cross Street, Drayton, Daventry.
 A. L. CUSDEN (G3FB), 49 Altrincham Road, Wilmslow, Cheshire.
 D. R. C. PETTIGREW (G4BC), The Chapel, Marsh Lane, Cheshill, Wilt.
 A. LABAND (G4CU), 59 Belgrave Avenue, Watford, Herts.
 S. M. GAMBLE (G4GI), 1 Lindum Terrace, Lincoln.
 M. R. MACARTHUR (G4LB), 29 Lingwell Road, London, S.W.17.
 J. HUDSON (G4NS), 45 Frazer Street, Worthing, Cumberland.
 E. W. BUTCHER (G5AN), 16 Manor Gardens, Purley, Surrey.
 O. B. KELLET (G5KL), Kenilworth, Ashley Road, Newmarket.
 A. B. WRIGHT (G6FW), 106 Knowsley Road, St. Helens, Lancs.
 E. RAYNER (G6IO), The Firs Bungalow, Westwood Road, London, S.E.26.
 G. F. L. BERSFORD (G8CS), 62 Park Av., Potters Bar, Middlesex.
 R. BARRON (G8RN), New Place, Farnham Lane, Haslemere, Surrey.
 E. J. WILLIAMS (2AKY), 77 Raydons Road, Dagenham.
 J. R. MUDDELL (2AOY), 31 Marnell Way, Hounslow W., Middx.
 J. R. SMITH (2BMS), Jessarth, Southampton Street, Faringdon, Berks.
 L. BENNETT (2BOJ), 18 Orchard Street, Doncaster.
 E. M. AGNEW (2CFI), 14 Chislehurst Avenue, London, N.12.
 J. J. BALL (2DKX), 8 Reedsfield Road, Ashford, Middlesex.
 G. E. FERRAR (2HFJ), 47 Canning Street, Liverpool, 8.

Home Corporates (B.R.S.)

- E. S. MASSINGHAM (5743), 148 Allerton Road, Mossley Hill, Liverpool, 18.
 P. J. FROST (5744), 23 Hillside Rd., Thorpe St. Andrew, Norwich.
 P. A. D. ABEL (5745), 2 Jessopp Close, Jessopp Road, Norwich.
 J. NORMAN (5746), 247 Luton Road, Dunstable.
 D. C. WHITEHOUSE (5747), Braemore, Harlequin Lane, Crowborough.
 K. KNOTT (5748), 31 St. Swithins Walk, Poppleton Road, York.
 J. A. EDWARDS (5749), 121 Longcroft Lane, Welwyn Garden City.
 E. J. STOREY (5750), 5 Fernlea Road, Harwich, Essex.
 P. C. J. WOOLHEAD (5751), 51 Glanfield Road, Beckenham.
 MISS E. M. CLARKE (5752), 481 Killingham Road, Undercliffe, Bradford.
 A. C. MOREMAN (5753), Brynteg, Energlyn, Caerphilly, Glam.
 F. A. NEWELL (5754), 8 Mascalls Road, London, S.E.7.
 P. C. COOPER (5755), 51a Algiers Road, London, S.E.13.
 D. R. WINTER (5756), 17 Hamilton Road, Brighton, 5.
 R. STUBBS (5757), 40 High Lane, Ridgeway, near Sheffield.

A CORDIAL WELCOME IS EXTENDED TO THE

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NEW MEMBERS WHOSE NAMES ARE LISTED

- E. A. W. CLYNE (5758), 39 Belvedere Court, London, N.2.
 G. JOHNSON (5759), 8 Greenfield Crescent, Brighton, 6.
 J. W. BALDIE (5760), 26 King Street, Crieff, Perthshire.
 W. BOLT (5761), South View Place, Cramlington, Northumberland.
 A. B. MARSH (5762), 119 Bolton Street, Oldham, Lancs.
 P. D. GEORGE (5763), Rheola, Broad Walk, Caerleon, Mon.
 F. J. WILSON (5764), Hemingford, Alveston, Stratford-on-Avon.
 C. W. DEADMAN (5765), 2 Grover Court, London, S.E.13.
 M. J. C. SHEARMAN (5766), 9 Ripley Road, Swindon.
 A. N. GROVE (5767), Fynstock, Lower Station Road, Billingshurst.
 F. SHEA (5768), Park Hotel, Lowther Road, Prestwich, Lancs.
 J. D. GAMBLES (5769), 69 Oakhill Rd., Wheatley Hills, Doncaster.
 R. B. BACHE (5770), 148 Harefield Road, Stoke Ward, Coventry.
 J. A. J. TURRELL (5771), 4 Harvey Terrace, Kessingland, near Lowestoft.
 A. M. MURRAY (5772), 73 Ann Street, Greenock.
 A. ORMAN (5773), 1 Buccleuch Terrace, Edinburgh.
 W. FOX (5774), 66 Sandbybank Avenue, Rothwell, near Leeds.
 A. J. JACKSON (5775), 209 Carlton Road, Gidea Park, Essex.
 V. C. UPTON (5776), 55 Hartham Road, London, N.7.
 S./O. M. E. CUMMING (5777), Lethendry, Aviemore, Inverness.
 A. DEMPSEY (5778), 171 Sandridge Road, St. Albans.
 C. W. G. CLEMENTS (5779), Elmshurst, Fernbank Road, Ascot.
 P. N. MARTEN (5780), 51 Sangley Road, London, S.E.6.
 E. F. DAWSON (5781), 28 Clumber Street, Melton Mowbray.
 E. M. HARBORNE (5782), Ocean Waves, Cawsands, Cornwall.
 J. SIMPSON (5783), 40 Botwell Lane, Hayes, Middlesex.
 D. A. WEBB (5784), 90 Cove Road, St. Farnborough.
 F. W. PAGE (5785), 1 Berkhamstead Parade, Wembley.
 A. C. W. SANN (5786), Ka Nicobar, St. Margaret's Avenue, Meliden, N. Wales.
 A. G. ALLEN (5787), 153 Beechhall Road, London, E.4.
 E. W. J. EVERETT (5788), 8 Ditchling Road, Brighton, 7.
 F. R. HORTON (5789), Aysgarth, Holt Road, Studley, Warwick.
 R. DEACON (5790), 6 Holmesdale Road, S. Nutfield, Surrey.
 D. S. ROSE (5791), 1 Edgware Court, High Street, Edgware.
 A. ROBERTSON (5792), 11 Nigel Gardens, Glasgow, S.1.
 R. E. COUSINS (5793), Whitelands, Middleton Road, Droxford, Hants.
 N. K. GREEN (5794), Mill House, Mill Walk, Cottingham, E. Yorks.

- D. L. H. GAUNTLETT (5795), 134 Cheam Road, Cheam, Surrey.
 H. M. MILLS (5796), 55 Helredale Road, Gallows Close, Withby.
 J. W. BROOKES (5797), 4 Claypole Rd., Hyson Green, Nottingham.
 J. E. G. JONES (5798), 38 Greenway, Chislehurst, Kent.
 J. CANNON (5799), Double Cott, Home Park, Windsor, Berks.
 A. WHITE (5800), R.N.A.S.
 W. SWANSTON (5801), 24 Chapel Street, Eymouth, Berwicks.
 J. L. P. VERLEY (5802), Malir Bungalow, Bosham, Sussex.
 J. A. YEARSLEY (5803), 105 Harehills Lane, Leeds, 8.
 G. H. GLEDHILL (5804), 71 Plane Street, Hull.
 G. M. E. HIGGESS (5805), 2 Lawrence Road, Hove, 3.
 D. G. WRIGHT (5806), 68 Puller Road, Hemel Hempstead.
 J. R. CARTWRIGHT (5807), 39 Queen Annes Grove, London, W.5.
 J. McLAUGHLIN (5808), 75 Houston St., Kingston, Glasgow, C.5.
 T. BLEZARD (5809), 17 Burrow Road, Deepdale, Preston.
 B. FREYNE (5810), 32 Wordsworth Road, Radford, Nottingham.
 J. A. C. DEAN (5811), 76 Snells Park, London, N.18.
 S. G. GIBSON (5812), 9 Harold Street, Sunderland, Co. Durham.
 G. BARNES (5813), c/o Lakeview, Ungall, Templepatrick, N. Ireland.
 A. H. STEFFEN (5814), 50 Wellington Road South, Hounslow.
 J. D. TRELEASE (5815), Glynn, Albany Road, Redruth.
 H. BEAN (5816), c/o 32 Cavendish Avenue, London, N.3.
 I. J. BIRCH (5817), 22 Lancashire Road, Bishopston, Bristol, 7.
 S. H. PLATT (5818), 5 Denbridge Road, Bickley, Kent.
 C. A. YOUNG (5819), Lower Dallachy, Spey Bay, Morayshire.
 P. A. LEWIS (5820), 3 Rothsay Road, Crumpsall, Manchester, 8.
 F. J. BAYLON (5821), 13 First Avenue, Stafford.
 R. A. PORTWAY (5822), Blasford Hill, Broomfield, nr. Chelmsford.
 G. MATHIAS (5823), 29 Rice Street, Llanelly, S. Wales.
 H. ALLESON (5824), 9 Firgrove Avenue, Rochdale.
 G. A. WOODS (5825), 67 Station Parade, Harrogate (Ex-G6WD).
 R. C. RUSSELL (5826), Ben-My-Chree, Castle Drive, Horley, Surrey.
 MISS K. M. WATSON (5827), 21 Windsor Av., Edgware, Middlesex.
 D. J. BIRCH (5828), 93 Prince Edward Av., Denton, Manchester.
 C. J. MITCHELL (5829), 23 East Bourne, Watford Rd., St. Albans.
 W. H. E. WILGOS (5830), 103 Sixth Avenue, Queen's Park Estate, London, W.10.
 C. HARRISON (5831), 20 Stretton Avenue, Manchester, 20.
 K. E. MACHIN (5832), Queens College, Cambridge.
 I. D. BRISTOW (5833), 122 Desborough Road, High Wycombe.
 C. W. FINCH (5834), 132 Redcliffe Street, Keighley.
 G. STUART (5835), 34 Colgate Bounds, Aberdeen.
 D. H. MATTHEWS (5836), 68 Barringer Road, London, N.10.
 M. N. KING (5837), Farndon, Meliden Road, Prestatyn.
 K. H. DIXEY (5838), 58 Cardinals Walk, Leicester.
 M. G. BULMER (5839), 16 Bentley Grove, Cottingham Road, Hull.
 F. L. READ (5840), 110 Mottingham Road, London, S.E.9.
 K. HOOLE (5841), 23 Peshall Drive, Scarborough.
 J. BRADFORD (5842), 32 Institute Road, Eccleshill, Bradford.
 E. RADFORD (5843), 77 York Street, Mansfield Woodhouse.
 J. L. FINNIGAN (5844), 26 St. Mungo Street, Glasgow, C.4.
 S. R. HAWKINS (5845), Pentilla, Rowben Close, London, N.20.
 W. J. RICHARDS (5846), 4 Hollingbury Gardens, Worthing.
 W. C. PHILLIPS (5847), The Dolphin Hotel, Littlehampton.
 A. L. THWAITES (5848), Halstead, Hall Park, Lancaster.
 N. T. BENICE (5849), Lorne House, Box, Wilts.
 C. GERRETT (5850), Blue Boar Inn, Market Place, Frome.
 H. G. LEVINE (5851), 69 Regal Way, Kenton, Middlesex.
 D. B. BROWN (5852), 29 The Shortwoods, Dorton, Tamworth.
 R. M. SMART (5853), Furbank, Bathaston, Bath, Somerset.
 F. D. MILLS (5854), 74 Vandyke Road, Leighton Buzzard.
 H. MILNER (5855), 98 St. David Road, Eastham, Cheshire.
 D. P. DOO (5856), 26 East End Road, London, N.3.

Dominion and Foreign

- R. WYSOCKI (SP3WR).
 J. S. CHANCE (W5ACW), 712 Santa Fe Street, Alva, Oklahoma, U.S.A.
 F. J. ELDER (W6GVU/ANM), c/o F. W. Mitchell, Carlsbad, Calif., U.S.A.
 G. A. SIMPSON (W6NEW), 1450 Locust Av., Long Beach, Calif.
 R. E. HERBST (W8VND), Longview Hospital, Cincinnati, Ohio.
 J. M. GUNEN (W9TYE), 4218 Chown Avenue, N., Robbinsdale, Minn.
 COL. G. P. DIXON (FRS62), U.S. Army.
 CAPT. G. D. MANTER (FRS63), U.S. Army.

Associates

- R. G. PAWSON (Junior), 82 Acomb Green, York.
 P. W. FUDGE (Junior), 5 Queens Park Road, Paignton.

Returned Bulletins

▼ Bulletins for the following members have been returned to Headquarters from the address on records:—

- R. A. Butler, 4934, 17 Ernest Street, Bolton.
 W. H. Graham, G4BF, 157 Sileby Road, Barrow-in-Soar, near Loughborough.
 R. Gurney, 4607, 31 Lewis Road, Sidecup, Kent.
 F. R. Metcalfe, 4993, 27 Silverdale Road, Bolton. (Home, Webb, Sask, Canada).
 G. Skipp, 5054, 18 Stanley Crescent, Notting Hill Gate, W.11.
 P./O. J. Muron, OK2LR, 312 Squadron, R.A.F.
 Information which will enable us to trace any of these members will be appreciated.

TROUBLE TRACING—(continued from page 99)

Tools

In many households one screwdriver is made to perform all sorts of duties. To the professional service engineer one screw requires a certain kind of driver and it certainly helps to have an assortment of different sizes, including one to fit small grub screws. A pair of long-nosed as well as large combination pliers will also be needed, whilst if a small pair of "side cutters" can be obtained they will be found most helpful for snipping out faulty condensers and resistors from awkward corners. A bakelite crochet hook is useful for prodding switch contacts and suspected loose connections. To clean metal contact surfaces a number of volatile fluids are available under various trade names. It is hardly necessary to say that, when soldering, corrosive fluxes should not be used. For safety, it is perhaps advisable to use resin-cored solder when there can be no doubt about the flux. A word of warning—do not blow on soldered joints, otherwise there is a danger of creating a "dry" joint, so well known to the engineer.

Summary

To summarise, before examining a receiver, find out what the owner complains of, endeavour to obtain a circuit diagram, take precautions if handling a mains instrument to protect the set from damage by using light fuses and, in the case of a universal receiver, keep well away from earths. With battery sets, if in doubt, trace the connecting leads and join up the L.T. wires first. After repair, leave the set on test for some time as there are certain types of faults which only appear when the receiver is well heated. Do not despise "the wet finger" test. Doubtless, it is possible, if all the condensers, resistors, coils, etc., in a receiver were checked one by one, a particular fault could be located. Life, however, is too short for that and it is easier and much more sensible to solve a problem by working backward from the output stage in a systematic manner, noting, for instance, whether the pick-up sockets are live or that the oscillator section is functioning, and so on. Only by daily practice over a period of years can that "sixth sense" be acquired which enables a quick diagnosis of a fault without laborious tests.

It is hoped that the hints contained in this series of articles will be of some assistance to the reader with a perplexing problem, although it is realised that only the edge of a very broad subject has been touched.

Stray

● Frank Prior, G5RR, Manager of the Savoy Cinema, London Road, Croydon, would be pleased to meet, or hear from, old friends.

Silent Key

A tribute to Owen Relly, G2AO

The death at Willington, Sussex, on December 4, of Owen Hamilton Relly, G2AO, deprived the Society of one of its staunchest members, and many of us a very great friend.

Licensed just after the last war, his radio interests were legion. He was especially interested in the V.H.F. and U.H.F. bands and carried out many important tests in connection with pre-war television transmissions from the Alexandra Palace, London. He was always prominent in Society field day events and could be relied upon to co-operate in tests on any amateur band.

A modest retiring man of great kindness, he suffered from failing eyesight which an operation earlier in the year did little to improve.

Mr. Relly had been a member of the Society since 1925. He was also a Fellow of the Royal Society of Arts.

To his brother and relatives in South Africa we extend our sincere sympathies. J. C.

EXCHANGE & MART-ADVERTISEMENT RATES

MEMBERS' private advertisements 2d. per word, minimum 3s. TRADE advertisements 4d. per word, minimum 6s. TERMS: Cash with order. All copy and payments to be sent direct to Advertisement Managers, PARRS Advertising Ltd., 121 Kingsway, London, W.C.2, by the 30th of the month for following month's issue.

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

BARGAINS.—Wire-wound Pots. A fortunate purchase of 5-watt American C.T.S. wire-wound Volume Controls, offered at half price; 20,000 ohms, 4s.; 5,000 ohms, 3s.; 2,000 ohms 2s. 6d. In 2 doz. lots, less 25%. Hurry—supplies won't last long.

RADIOMART, 48 Holloway Head, Birmingham.

SALE.—R.M.E.69, 230v. A.C.; also NC 81X. Both O.K. Offers?—H. JONES, 82 Dean Park Road, Plymouth.

SHACK Spring Cleaning Sale of guaranteed new unused Valves. Lot 1: Two/FC4, two/SP4, two/PenA4, two/IW4/500, two/6A7, one/354V. Lot 2: Two/FC2A, two/VP2B, two/PM22A, two/Z21, two/ZB7. Lot 3: Three/ECH35, three/EBL1, three/X65, one/DW2. All at £5 per lot, no splits, no offers please.—ExGW3KY, "Brixton Mount," Holyhead.

WANTED.—Clean copy of recent edition of "Radio Engineering" by "Terman."—G3YL, The Lyth, Ellesmere, Salop.

WANTED.—Comet Pro, crystal gate, I.F. coil.—Box 89, PARRS, 121 Kingsway, London, W.C.2.

WANTED.—Communication Receivers and good radio equipment, amplifiers, speakers, etc. Please give full details and name your own valuation. Decision by return, and cash immediately on receipt, if accepted.—A.C.S. RADIO, 44 Widmore Road, Bromley, Kent.

WANTED.—Communication Receiver, A.C./D.C. preferred, but not essential.—BR55766, 9 Ripley Road, Swindon.

WANTED.—Eddystone "All-World Two."—Price to L. P. ZIMMERMAN, Pavilion F.24, King George V Sanatorium, Godalming, Surrey.

WANTED.—Hammerlund H.Q.120X, or other good communication receiver. Test meter, oscilloscope, amplifier or parts. A.C. Gram motor, pick-up, pointer knobs, multiple switches.—6MI, 131 Bloomfield Road, Blackpool.

WANTED.—McElroy De Luxe or Standard Model Automatic Key. State condition and price.—WEBB'S RADIO, 14 Soho Street, London, W.1.

WANTED.—Universal Meter in good condition—AvoMeter model 7, model 40, or similar high-grade instrument.—BRYANT, "Greenside," Winton, Kirkby Stephen, Westmorland.

WANTED.—10-in. Turntable for Gerrard U5 Gram motor; also A.C. Gram motor and turntable in good condition. Complete Eddystone "All-World Two" (valves not required).—Offers to 2FSL, 54 Bingham Road, Bournemouth.

WANTED.—12K7GT new or slightly used.—FT./LT. FENS, R.A.F., Bawtry, Yorkshire.

WANTED.—50 C/S Simpson Turntables, also Kaynite coil winders (Pat. No. 189376).—Full details and prices to BM/FAM3, London, W.C.1.

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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