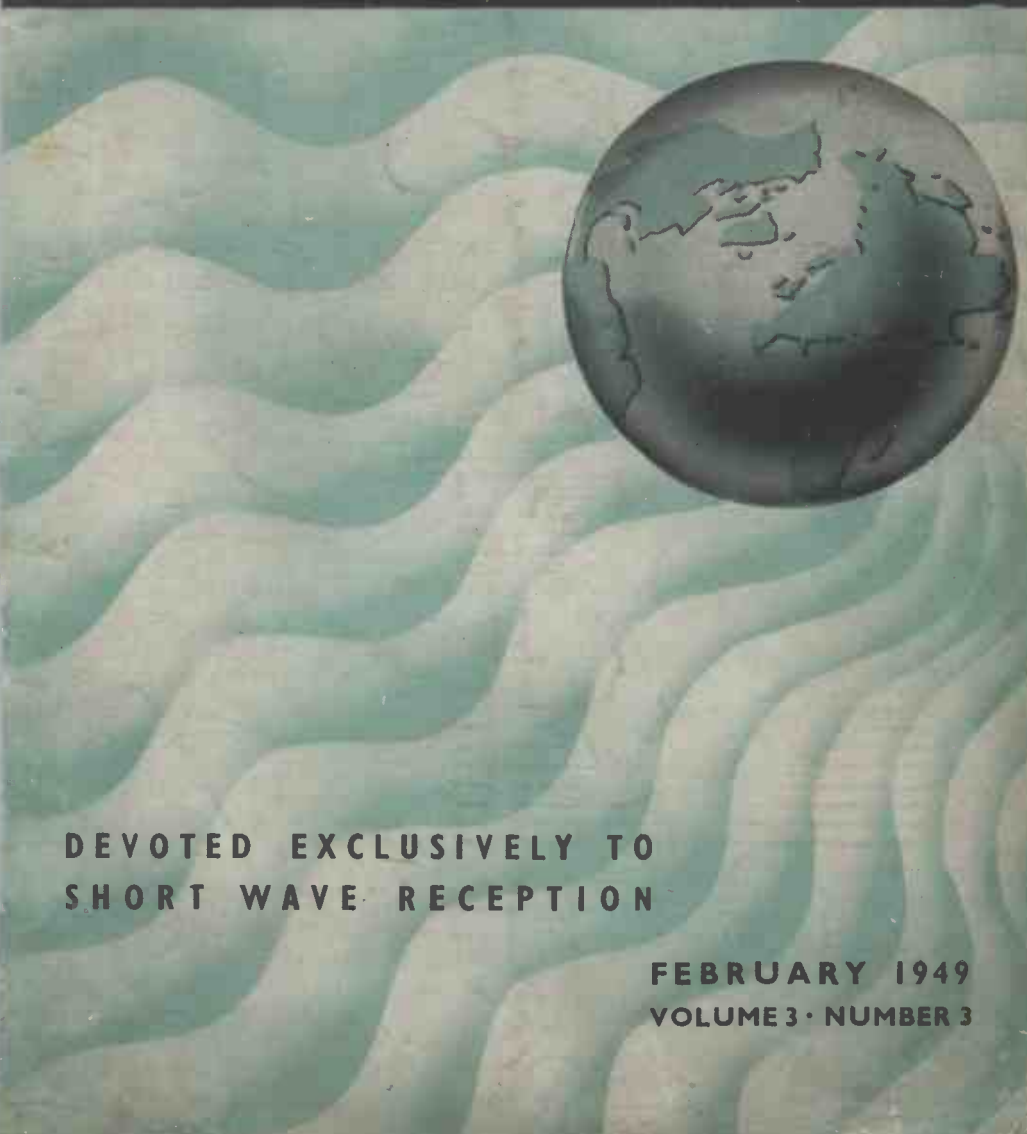


1/3

of the

SHORT WAVE LISTENER



DEVOTED EXCLUSIVELY TO
SHORT WAVE RECEPTION

FEBRUARY 1949
VOLUME 3 • NUMBER 3



Interference?

never heard of it!

Never had your favourite programmes spoilt by a background of hissing, crackling and spluttering noises? No? Lucky you! But for thousands living in towns and cities near industrial electrical apparatus or near trolley-bus routes such interference is only too common.



The B.I.C.C. Anti-Interference Aerial, when properly erected, will give you better listening and reveal many stations you never heard before.

The aerial is a 60 ft. polyethylene insulated dipole type with suspension insulator and matching transformer. The 80 ft. down lead is a fully screened coaxial cable with polyethylene plugs moulded to each end; it is matched to the receiver by a transformer with easily fixed suction mounting.

It acts as a "T" type aerial on long and medium waves and as a true dipole on short waves.

Write to-day for descriptive folder No. 221K on "Anti-Interference Aerial."

Obtainable through Radio Dealers.

Price £6 18s. 0d.

Licensed under Amy Aceves & King, Inc. Patents Nos. 413917, 424239 & 491220.



All-Wave
ANTI-INTERFERENCE **AERIAL**

BRITISH INSULATED CALLENDER'S CABLES LIMITED
NORFOLK HOUSE, NORFOLK STREET, LONDON, W.C.2

THE SHORT WAVE LISTENER

A MONTHLY MAGAZINE FOR THE LISTENING AMATEUR

VOLUME 3

FEBRUARY 1949

NUMBER 27

Conducted by the Staff of
The Short Wave Magazine.

EDITORIAL

Published on the third Thursday
in each month by The Short
Wave Magazine, Ltd., 49 Vic-
toria Street, London, S.W.1.
(ABBey 2384).

Single copy, 1s. 3d. Annual
Subscription (12 issues) 16s.
post free.

All editorial and advertising
matter should be addressed to
The Short Wave Listener, 49
Victoria Street, London, S.W.1.

Payment at good rates is offered
for articles of short wave listener
interest.

CONTENTS

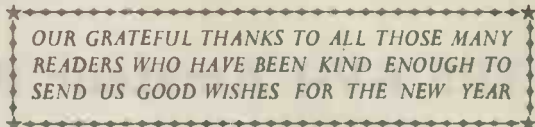
FEBRUARY 1949

Editorial	65
TRF I-V-1 Amateur Receiver	66
Have You Heard?	74
Calls Heard	80
SWL Stations—No.18	83
“Pse QSL”	84
The VHF End	86
Preparing for the R.A.E.	88
DX Broadcast	89
Broadcast Station List, Revision 87-46-12-96 & 11-49-19-68 metres	94

Coverage

Once before in this space we put forward the opinion that to get the most and the best out of short wave listening, SWL's should be equipped for reception on all bands upon which there is activity—broadly, 1.7 to 420 mc.

Naturally, it cannot be expected that all listeners can be equally interested (or expert) on all bands; as on the transmitting side, SWL's tend to specialise in their listening. The great majority of them are interested primarily in DX reception on the amateur communication bands, 3.5 to 28 mc; a lesser number in the reception of short wave broadcast stations; and fewer still in the VHF's.



 OUR GRATEFUL THANKS TO ALL THOSE MANY
 READERS WHO HAVE BEEN KIND ENOUGH TO
 SEND US GOOD WISHES FOR THE NEW YEAR

At the risk of labouring the point, what we would like to see is a much greater experimental interest in the VHF's, where the SWL can do so much useful and profitable work. There is no doubt that frequencies from 30 mc up are much more difficult than those from 1.7 to 28 mc—but this is what, in our submission, should challenge the keenness and ingenuity of all radio enthusiasts of an inquisitive and experimental turn of mind.

Our suggestion is, therefore, to get going on the VHF's; ample technical information has been (and is being) published on the design and construction of suitable receivers and there is sufficient transmitter activity to make the effort well worth while.



TRF I-V-I Amateur Receiver

Design and Construction of a Modern
Straight Three

By J. N. WALKER (G5JU)

(Notwithstanding the popularity of the easy-to-operate factory-built superhet in the communication class, a good straight receiver will still give very excellent results over a wide frequency range on the short wave bands. Moreover, it is easy and cheap to build, and will afford the constructor infinite pleasure and satisfaction. Here is an up-to-date design, fully detailed, incorporating all those features which make the modern straight receiver still well worth while as a working job.—Ed.)

BY exercising care in the selection of valves, coils and other components, it is possible to build a three-valve TRF receiver capable of an excellent performance on both the amateur bands and

the short wave broadcast bands. The present design is a typical example.

The Mullard EF50 valve possesses high mutual conductance and can be made to work well in all three stages—RF amplifier, detector and audio amplifier—of a TRF receiver.

The coils are of a new type recently introduced by Stratton & Co., Ltd. Physically, they are quite small and take up but little space, thereby lending themselves to a compact design. Yet, they have high "Q" factors and are very efficient. Each coil has three windings (coupling, tuned circuit and reaction) and is therefore suitable for use in most positions in a receiver. One end of each winding is brought to a common earth pin, so that four pins suffice.

The three coils which cover 33 mc to 3.1 mc (with a 140 $\mu\mu\text{F}$ tuning condenser) are wound on ribbed formers and have air cores. The remaining coils in the series are wound on a former fitted with an adjust-

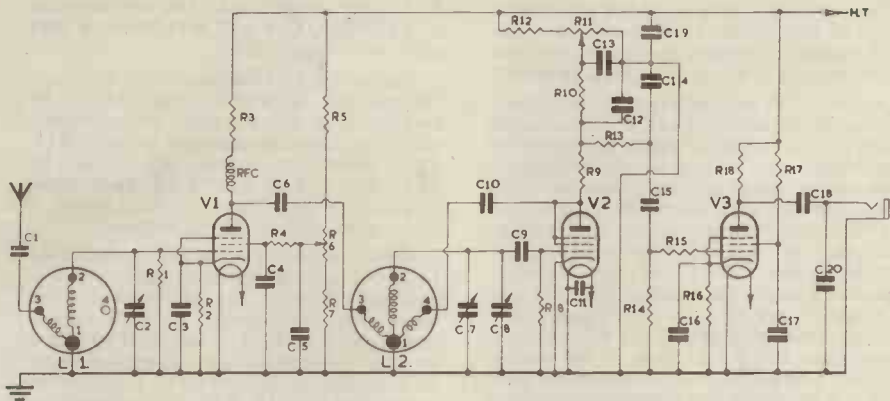


Fig. 1. Circuit of the TRF 1-V-1 Receiver, complete. Construction is simple and branded parts are used throughout.

able dust iron core, and are fully enclosed for extra protection.

Types are made covering the medium and long wave broadcast bands, and, if desired, the receiver can be used for occasional broadcast reception.

The tuning condensers have ceramic insulation and again, being physically small, assist in the achievement of a compact lay-out, with short wiring.

It is primarily intended that the power supplies for the receiver be drawn from a small AC mains unit, but it may be noted that the consumption is sufficiently low to permit economical operation off batteries. The valve heaters draw 0.9 ampere at 6.3 volts. A 6-volt 20 ampere hour battery will therefore operate the receiver for up to 20 hours at a charge. The HT consumption is about 10 mA—it varies slightly with adjustment of the gain control. The performance is quite good when using a 120-volt HT battery (with one slight modification noted later).

Discussing the Circuit

The complete circuit diagram is given in Fig. 1. The first valve is a straight RF amplifier, the gain being varied by adjustment of the screen voltage. Regeneration becomes evident when R6 is well advanced. If, as happens with some of the coils, actual oscillation occurs, R6 must be backed off a little. This regeneration is considered an advantage rather than a disadvantage. It gives an increase in gain but, more important, it also improves the selectivity.

The RF grid circuit tuning condenser is independently adjusted. Optimum results

TABLE OF VALUES

Fig. 1. The TRF 1-V-1 Receiver

C1, C6	= 50 μ F Ceramic (see text).
C3, C4, C5, C11	= .002 μ F Moulded Mica
C9	= 100 μ F Silvered Mica
C10	= .0003 μ F Moulded Mica
C12, C14, C20	= .0005 μ F Moulded Mica
C13, C17	= 0.5 μ F Paper (see text about C13)
C15, C18	= .01 μ F Metallite (TCC)
C16	= 50 μ F 12v Electrolytic
C19	= .01 μ F Moulded Mica
(All except R18 are $\frac{1}{2}$ watt)	
R1	= 2 megohms
R2	= 220 ohms
R3, R4, R7	= 10,000 ohms
R5, R12	= 33,000 ohms
R8	= 4 megohms
R9, R13	= 22,000 ohms
R10, R15	= 47,000 ohms
R14	= 0.5 megohm
R16	= 560 ohms
R18	= 25,000 ohms (1 watt)
R17	= 100,000 ohms

are thereby obtained and the construction simplified.

At first sight, R1 may appear superfluous. It is included to prevent the grid of V1 being deprived of bias whilst the coil is being changed. The high value specified has no deleterious effect on the performance.

The output of V1 is shunt-fed to the coupling winding on the detector grid coil. In parallel with the latter are two variable condensers. The larger can be used for general purpose tuning, for which reason a slow motion dial is fitted, or as a band-set condenser. The smaller bandspread condenser is coupled to the full vision dial. The amateur bands are well spread out (details are given later) and fine tuning is possible on any of the short wave broadcast bands.

The detector valve is triode connected. Used as a pentode, smooth reaction control becomes virtually impossible and no improvement in signal strength is obtained.

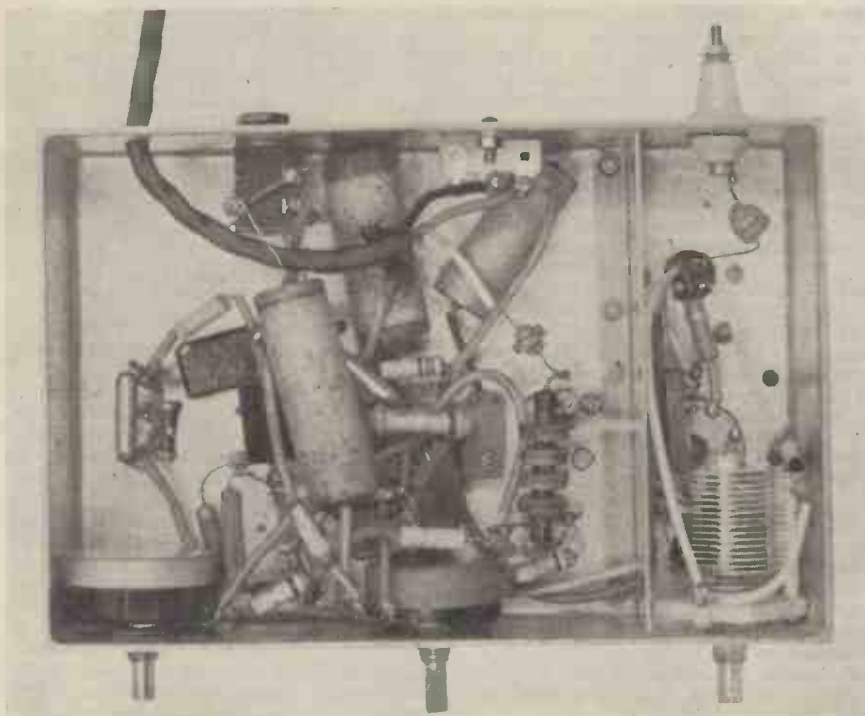
Rather a lot of resistors and condensers appear in the anode circuit of the detector valve but they all serve useful purposes. In the main, the additional decoupling is inserted to make very sure that no radio frequency voltages reach the grid of the EF50 audio amplifier. It may not perhaps be generally realised that many minor troubles with a TRF set—for example, threshold howl, hand capacity effects and “ploppy” reaction—are frequently due to the audio valve amplifying RF voltages, these then being fed back to the earlier stages. The EF50 gives considerable gain and it is particularly important to filter out RF. The small resistors and condensers cost but little and are well worth including.

Shunt feeding to the anode of V2 is necessary and R9 performs this function.

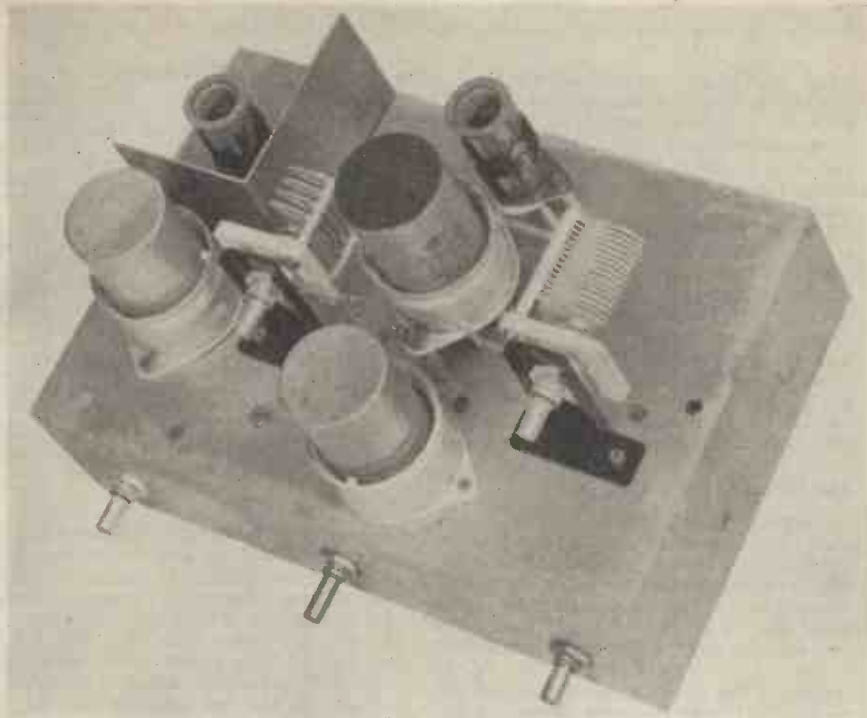
R10 is the anode load. The combination of C12, R13, C14 and R15 forms a very effective low-pass filter.

The value of C13 is given as 0.5 μ F and this is the minimum that should be employed, to prevent noise being audible when rotating the reaction control R11. This value can, with advantage be increased, and a 2 or 4 μ F electrolytic condenser (200 or more working volts), if obtainable, should be substituted.

A resistor is used as the anode load of the EF50 output stage, and the output is entirely adequate for all normal needs when using telephones, or even with a small speaker. If it is intended to run a speaker regularly, a pentode output transformer, with a ratio of 60 to 1, should be substituted for R18. C18 and the telephone jack can remain, the low impedance winding on the transformer being taken to a terminal strip, for connection to the speaker. In this case, the value of R17 should be reduced to about 10,000 ohms.



The under-chassis arrangement : RF compartment on the right.



General top-chassis view of the TRF 1-V-1.

These modifications will, of course, increase the HT consumption.

No audio gain control has been found necessary, and the RF gain control permits a wide range of signal strength adjustment.

Frequency Coverage

As the coil data panel shows, coils are available covering frequencies from 33 mc to 150 kc. This is a wide range, and it is impossible to arrange the circuit constants to give optimum results over the entire possible coverage. The values recommended form a good compromise.

If the main interest lies in the higher

frequencies—say 7 mc upwards—the value of C1 and C6 can well be reduced to 25 $\mu\mu\text{F}$ and that of C10 to 100 $\mu\mu\text{F}$. On the other hand, better results will be secured on medium and long wavelengths if C1 and C6 are increased to 100 $\mu\mu\text{F}$ and an all-wave type of choke (e.g. Eddystone Cat. No. 1066) included in lieu of the 2.5 mH type specified.

CONSTRUCTION

The diecast aluminium chassis, on which the receiver is built, is easy to work and, as comparatively few large holes are required, the construction is not at all difficult. Only two small screens are required and they may be made of any metal available—brass or aluminium of about 18 gauge (.048 in. thick) is recommended. Details of the screens and of the holes in the chassis are given in Figs. 2 and 3.

The RF Stage

The RF stage is in a compartment formed on three sides by the chassis walls and on the fourth by the screen. The latter is fitted close up to the valveholder,

COIL DATA

Coil Type	Frequency Coverage
706/LB	33 - 15 mc
706/Y	16 - 6.7 mc
706/R	7.5 - 3.1 mc
706/W	3.3 - 1.35 mc
706/P	1.4 mc - 720 kc
706/G	750 - 300 kc
706/BR	370 - 150 kc

which must be placed as indicated in Fig. 2, so that the length of anode lead actually in the RF compartment is very short. This compartment houses C1, C2, C3, C4, R1 and R2. Resistor R4 is soldered to the centre tag of the gain control potentiometer, as also is C5.

Condensers C3 and C4 are mounted across the valveholder in an upright position, to provide a measure of screening between the grid pin (No. 7) and the anode pin (No. 3). The screen above the chassis shields the coil from other parts of the receiver. The lead-through insulator, used as the aerial terminal, is fitted to the rear of the chassis and projects into the RF compartment. Alongside this insulator is a 4BA bolt for an earth connection.

The Detector Stage

Coupling condenser C6 and the RF choke are supported, at the anode end, by a miniature stand-off insulator. The other end of C6 goes direct (through a hole in the chassis) to the detector coil holder. The other end of the RF choke is held by a two-way tag strip, which also takes R3.

Several advantages obtain from mounting the detector valve and coil on pillars, well away from the chassis. Construction is simplified, leads are kept short and stray capacities are minimised. The

LIST OF PARTS

1 Diecast Chassis Cat. 643	Eddystone
1 Metal Cabinet Cat. 644	Eddystone
2 Ceramic Microdensers 140 μ F (C2,8)	
Cat. 586	Eddystone
2 Ceramic Microdensers 12.5 μ F (C7)	
Cat. 580	Eddystone
2 Coil Bases Cat. 707	Eddystone
Coils as required (see panel) Cat. 706	
3 Valves type EF50	Mullard
3 Ceramic Valveholders B9G. List L500	Belling Lee
3 Retainer Rings and Bases. L568	Belling Lee
2 Metal Brackets Cat. 708	Eddystone
2 Flexible Couplers Cat. 529	Eddystone
2 Slow Motion Drives 2 in. Black Cat. 597	Eddystone
1 Full Vision Dial Cat. 598	Eddystone
1 Direct Drive Dial 2 in. Black Cat. 595	Eddystone
2 Skirt Knobs Cat. 2416	Eddystone
1 Lead-Through Insulator Cat. 695	Eddystone
1 RF Choke 2.5 mH Cat. 737	Eddystone
1 Miniature Stand-off Insulator Cat. 1019	Eddystone
2 Potentiometers 100,000 ohms (R6, 11)	
type SG	Reliance
1 Telephone Jack	Igranite
5-way tag strip, insulating sleeving, etc.	

pillars used for the coil holder are $\frac{9}{16}$ in. long and those for the valveholder 1 in. long. If any difficulty is found in purchasing suitable pillars, they can easily be made by sawing off lengths of small diameter tubing, the centre hole of which is large enough to take a 6BA bolt. Before permanently mounting, wires of appropriate length should be soldered to the coil holder sockets and all connections made to the valveholder, including the fitting of C9, C10, R8 and R9.

Tuning condensers C7 and C8 are positioned with the spindle $1\frac{1}{8}$ in. above the chassis. The rotors are earthed, by the large tags provided, to a soldering tag fitted beneath the nearer fixing bolt of the V2 valveholder.

The audio stage is straightforward and calls for no particular comment, except perhaps to mention that the grid stopper (R15) is fitted very close up to tag 7 on the valveholder.

Other Points

The valve locking rings specified in the list of components should not be omitted. They ensure good contact between the base pins on the valve and the sockets on the valveholder—if contact is poor or intermittent, performance will suffer accordingly.

The wiring throughout may be carried out with 20 SWG tinned wire. Those wires carrying RF currents (in both RF and detector stages) should be enclosed, for preference, in polythene sleeving. Alternatively, good quality cambric sleeving may be used but P.V.C. should be avoided, although it may, of course, be employed elsewhere in the receiver.

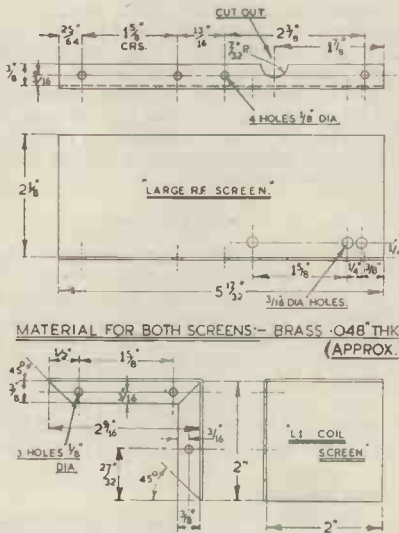


Fig. 3. Construction of the screens—positions can be checked from the photographs.

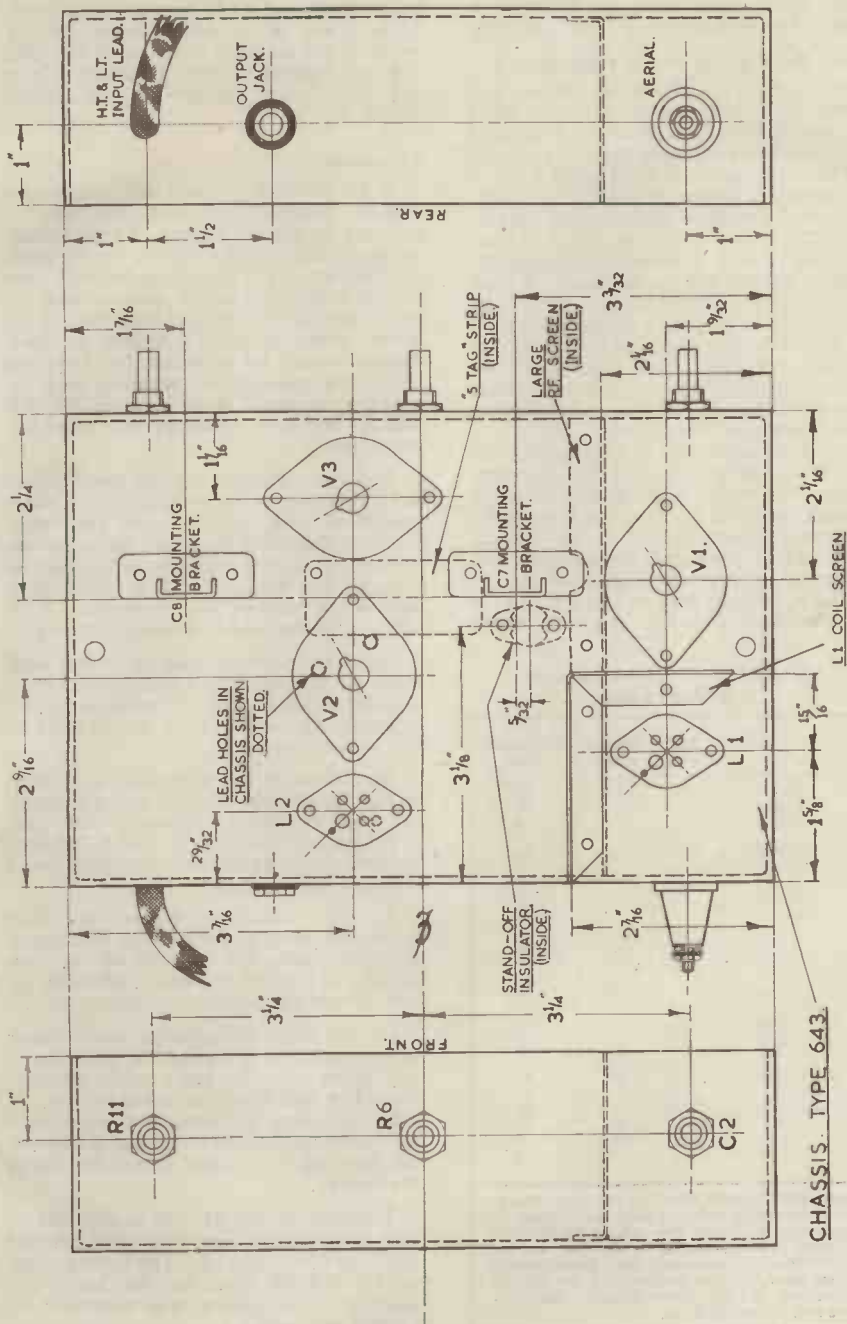


Fig. 2. Detail for main chassis drilling and mounting. An Eddystone die-cast aluminum shell is used.

CHASSIS TYPE 643

The power lead takes the form of a 3-way cable, anchored to a 3-way tag strip.

Fitting the Chassis to the Cabinet

Holes are provided in the chassis and cabinet to enable the two to be fitted together, a 2 $\frac{3}{4}$ in. length of 2BA screwed brass rod being required for the purpose.

When coming to the holes in the front of the cabinet, a smear of vaseline or other compound should be placed on the spindle of the centre potentiometer (R11) so that, when the chassis is pushed up against the panel, a mark is left on the latter. A pilot hole is drilled out and further pilot holes made at the appropriate distances to right and left of the first hole, for the spindles of C2 and R6. The pilot holes are then enlarged to $\frac{3}{8}$ in. diameter, either by means of a punch or by drilling a number of small holes and filing clean.

The same procedure is followed for the two $\frac{3}{8}$ in. holes required for the slow motion dial heads. Care should be taken to mark the holes correctly, at least in the horizontal plane. Errors in the vertical plane can be corrected by up-and-down movements of the tuning condensers.

A little difficulty may be found fitting the index to the dial on C2. An 8BA tapped

hole is necessary and, if a tap is not available, it will be as well to leave out the index, since accurate readings of this dial are not necessary. Set condenser C2 to full mesh before finally fixing the chassis inside the cabinet.

Operation

A well-smoothed power unit delivering a voltage between 150 and 250 volts is suitable for the HT supply. As mentioned earlier, a 120-volt dry battery can be used, in which case R12 should be omitted. No switch is included in the receiver itself, as it is assumed that one will form part of the power unit. If an HT battery is used, means should be provided for breaking either the positive or negative lead, to prevent the small drain through R5, R6 and R7 and R11, during periods when the set is idle.

Any type of aerial may be employed—good results have been obtained on a short length of wire but, as with any other receiver, the better the aerial, the better the results. If a long aerial is used—that is, over 66 feet long—it may be desirable to reduce the size of the condenser C1 in series with the aerial coupling winding.

Slight microphony may be found with some EF50 valves. If it occurs, the valves should be changed round, paying particular attention to freedom from microphony in the detector valve.

Particulars of the approximate settings of the dials for the various amateur bands are given in the accompanying table and, provided the specified lay-out is adhered to, fairly close agreement should be found with the figures shown.

All the coils are wound to close tolerances and, in the case of the higher frequency coils, the readings on the dials of C2 and C8 will be similar, allowing for the effect of the bandsread condenser C7.

On the lower frequencies, the position of the dust core will affect the coverage of any given coil. To begin with, the core should be well down inside the former. If, with the tuning condenser at maximum, it is then found that the frequency is too low, the core can be brought nearer the top of the former.

The core of the RF coil is adjusted so that resonance occurs with identical dial readings of C2 and C8. The tuning range of C7 will be small on the lower frequencies, and tuning will normally be carried out with C8.

APPROXIMATE COVERAGE OF
AMATEUR BANDS

Coil Type	Frequency kc	RF Cond.	Bandset Cond.	Bandsread Cond.
LB	28,000	25	13	90
	29,000			45
	30,000			0
Y	14,000	20	6	80
	14,100			75
	14,200			70
	14,300			66
	14,400			62
Y	7,000	90	82	100
	7,100			55
	7,200			15
	7,300			80
R	3,500	70	70	50
	3,600			67
	3,700			64
	3,800			60
W	1,700	30/50	51	50
	1,800			45
	1,900			40
	2,000			35

It should be noted that, on the 7 mc band a movement of the bandset condenser is necessary to cover the whole band. On 1.7 and 3.5 mc, tuning is carried out on the bandset condenser, the bandsread being used for fine tuning. On 3.5 mc, 70 divisions of the bandsread dial represents about 100 kc.

ORDER NOW !!!
1949 A.R.R.L.
RADIO
AMATEUR
HANDBOOK

IMPORTANT

A.R.R.L. EXECUTE ALL ORDERS IN STRICT ROTATION. THE FIRST PRINTING WILL SOON BE EXHAUSTED, SO DON'T DELAY—ORDER NOW !!!

The New 1949 Twenty-Sixth Edition of the famous American Radio Amateur Handbook published by the American Radio Relay League will be ready next month.

Once again this Handbook will contain the very latest up-to-date technical and constructional articles dealing with all matters on Ham Radio.

The demand for this New 700-page Edition throughout the Amateur world will be exceptionally heavy. Don't be disappointed, get your order in at once to secure delivery from the first printing. Your copy will be posted direct to you from the United States immediately it is published.

1949 EDITION	READY	POST
	NEXT	12/6
	MONTH	PAID

DALE INTERNATIONAL
 Publications Limited
 105 BOLSOVER STREET, LONDON, W.1

ORDER FORM

1949 A.R.R.L. RADIO AMATEUR HANDBOOK

Please arrange for the above publication to be posted direct to me from the U.S.A. immediately it is published. I enclose 12/6

NAME.....
 ADDRESS.....

If you would rather not deface your Magazine, then just order by letter.

Obtain the **P.M.G. CERTIFICATE** with the personal assistance of **E.M.I. Scientists—**

A special correspondence course for those wishing to take the P.M.G. certificate has been planned by E.M.I. Institutes. It brings you tuition under the personal supervision of E.M.I. scientists, several of whom hold the transmitting licence. COLLEGE and other CORRESPONDENCE courses, covering basic radio and basic television are also available.

A former student writes "... the excellence of the course absolutely ensured my success in the examination ... "—**J. I. (Cumberland).**

Write for details to:—*The Principal,*
E.M.I. INSTITUTES LIMITED
 Dept. 14, 43 Grove Park Road, Chiswick, London
E.M.I. Institutes—backed by the Electronic Organisation which includes "H.M.V.", Marconiphone, Columbia, etc.

E48



"... going QRT now OM, must get a 2½d. stamp off to Johnsons"—Colin has heard the news!...

JOHNSONS SPECIAL VALVE BARGAIN LIST—IS HERE!

MAGNIFICENT OFFER
15,000 U.S.A. VALVES!

Brand new valves, in makers' packing, at real bargain prices! All the popular types from 2/6 each. Here's the chance to refit your equipment and obtain spares at a fraction of usual cost. Many rare types listed.



DON'T MISS YOUR COPY—

A 2½d. stamp, with your name and address, brings a copy of our latest Bulletin together with the Special Valve Lists—new remarkable offers in receivers, etc. Full details of the new Eddystone "680" are described and other interesting news items. Immediate delivery from stock of the popular Eddystone "640," the Hambander, etc.—real DX at low cost. Terms as usual. Write to Johnsons, today!



JOHNSONS (RADIO SPECIALISTS)
MACCLESFIELD, CHES.
 TEL. 4080

GREETINGS, readers, for the first time in 1949—though we are dated February. May you all go on from strength to strength and may you always find the DX you want on one band or another!

The month of December was very brisk again, and the usual large volume of correspondence and Calls Heard arrived on my desk by the prescribed date. Most of the latter have been squeezed in this time, but quite a few have fallen by the wayside for various reasons.

THE SLP's

The strange thing about the SLP's is that although I put in that one for the evening of Boxing Day (14 mc) with my tongue a bit in my cheek, I did expect a few readers to be radio-minded even on that day. Only *one* list has been received, however, and that is from L. E. P. Holgate (Jersey, C.I.). But what a list it is!

Have
you
heard
?

winners of the 1948 Marathon. There they are below, and all honour to them for a very fine performance all round.

Hearty congratulations to

no one has ever seen a QSL. No PX station, said to be in Andorra, has been counted as genuine. No AC4 except AC4YN has been allowed. VO6 (Labrador) and VO (Newfoundland) count as one and the same country. KC6 (Canton Island) counts the same as the newer KB6 (Baker Island), which includes it. No LZ or ZA station appears to be genuine except ZA2AA, who QSL's. And, lastly, no VQ1 station can be accepted as being in Zanzibar except VQ1HJP, who was only there for a few days late in 1947, and VQ1CUR, who is there now. So VQ1JD must be treated as a phoney unless someone can produce a QSL.

Well, that's the end of 1948. A table is included which shows the ten top-scorers in the Marathon for each section, and we can now consider that subject closed!

The table showing Post-War Zones and Countries

AMATEUR BAND COMMENTARY *by the DX Scribe*

The better DX in it includes CM, CP, CX, HH, HK, KH6, KP4, LU, OQ, PY, PZ, TI, VK, W7, YN, ZD1, ZL and ZS. A far better showing than our average 14 mc SLP of recent months. And only the one reader there to log it! Thanks, L. E. P. H.

The 28 mc period was also a good one. A rough summary of the lists shows the following interesting stuff: AR8, CO, CR7, HI, HZ, KG6, KP4, PZ, VP6, VQ2, VS9 and ZE1—apart from hosts of more common-organ garden DX which is *still* DX. But aren't you sorry you didn't tear yourself away from that Boxing Day party for just an hour?

THE 1948 MARATHON

After much perusal of long lists of stations, and a little bit of slashing with the proverbial blue pencil, I have found the

these four listeners. To hear over 200 countries (Phone and CW) or over 150 (Phone Only) in one year is no mean achievement, as you will realise if you have tried to do it.

Some of the scores, as sent in, have had to be reduced somewhat. These were the main reasons for "pruning": No YA station has been admitted, because I understand there is not, and never has been, a genuine station in Afghanistan, and certainly

heard is also the last of its kind, because I have carefully worked out plans for the New Year, bearing in mind what many readers have had to say about their likes and dislikes. So even if you are not terribly happy about the new schemes, please remember that they have been asked for by the majority of readers, and give them a try.

THE 1949 PROGRAMME

To put it briefly, the idea is to run three competitions

Phone and CW

N. A. Phelps (London, N.10) and M. H. Preston (London, S.W.12)
(Both 40 Z and 204 C)

Phone only

E. J. Logan (Hertford) 39 Z and 154 C
B. Needham (London, W.11) 38Z and 155 C

during the year. The first is a Four-Band DX Table; the second a *monthly* Zones Heard competition; and the third a Counties Heard competition for the 1.7 mc enthusiasts. There has been a lot of solid support for the last two, in particular, as well as many suggestions that a Four-Band table would be a good thing. Well, obviously these three will make considerable demands on our space, and we can't run them and maintain the Post-War Zones and Countries table. Hence my remark that the one appearing herewith is the last.

Now if you will read the next three sections carefully and keep this copy handy for reference, you will know exactly what to do if you want to enter one of the rings for 1949.

FOUR-BAND DX TABLE

This will be based on *countries* only—post-war, of course. So check up (if you have not already done so) on how many countries you have heard on 3.5, 7, 14 and 28 mc. Note also your total—not the total of the figures in the four columns, of course, but the total number of countries heard. Then, on your post-card, send in your claim thus:

Name	3.5	7	14	28	Total
T. I. Near (Herdom) . .	23	45	125	1	130

To qualify you must have an entry in each column; so if you have never listened on 3.5 or 28 mc, hurry up and do-so, even if you only log a G to give you a figure of one country! To make things interesting I shall make up the "order of merit" each month by bringing a different column into the front row—either the total or one of the bands. So a specialist in one particular band stands a chance of going to the top at least once every five months! For this contest



ZSIDA, Rondebosch, Capetown, has an Ultra Sky rider Rx and the transmitter is 6L6-6L6-809 with 80 watts input, into a 66-ft. Zepp, operating on 14150 and 28300 kc.

there will be no discrimination between Phone and CW, although if you listen to Phone Only you are at liberty to say so, and those words will be entered in brackets against your name—but they will *not* put you higher up the list.

MONTHLY ZONES HEARD

To keep up interest in the Zone scheme we will run a monthly competition on the same lines as the 1948 Marathon, the order of precedence being decided by Zones and not by Countries. So, for the

January and February. For this competition we will have two lists—one for Phone and CW and one for Phone Only.

1.7 MC COUNTIES HEARD

Starting from the beginning of the year, you 1.7 mc fans had better look up the QTH's of all the stations you have heard on the Top Band, because you will need to know! This one is not going to account for a massive and complicated table—simply a list of the competitors and the Counties Heard, with no further details. They must, of course, be checked, and so this leads me to the next heading.

1.7 MC CALLS HEARD LISTS

I have for some time thought that long lists of "G" calls on the top band don't mean much. So, from now on, please restrict your lists to *one station from each County heard*, with the name of the County in brackets. Each month you may send in an additional list with any new counties you have heard, *not* repeating those already in the bag. In this competition you may also enter on a Phone Only or a Phone and CW basis, and I will separate out

month of January, log your Zones and Countries, send them in by the due date (which will be February 2) and they will appear in the March issue, which is published in mid-February; so the lag is very small and you won't feel that the published order represents ancient history.

Please get it clear that this is a separate and complete competition each month. Next month you report Zones and Countries heard *during February* only—not during

1948 MARATHON

LIST OF TOP SCORERS

Listener	Zones	Countries
'PHONE and CW		
1. N. A. Phelps (London, N.10) ..	40	204
M. H. Preston (London, S.W.12) ..	40	204
3. A. Baldwin (London, N.11) ..	40	196
4. M. E. Bazley (Birmingham) ..	40	195
5. D. W. Bruce (Eltham) ..	40	190
6. O. A. Good (Oswestry) ..	40	173
7. C. S. S. Lyon (Liverpool) ..	40	164
8. W. J. C. Pinnell (Sidcup) ..	40	157
9. L. N. Goldsbrough (Wirral) ..	39	159
10. R. A. Hawley (Goostrey) ..	39	159
'PHONE ONLY		
1. E. J. Logan (Hertford) ..	39	154
2. B. Needham (London, W.11) ..	38	155
3. D. W. Bruce (Eltham) ..	38	148
4. R. A. Hawley (Goostrey) ..	38	143
5. A. Bannister (Manchester) ..	37	141
6. D. L. McLean (Yeovil) ..	37	140
7. D. Kendall (Potters Bar) ..	37	139
8. J. M. Graham (Glasgow) ..	37	135
9. F. K. Earp (London, S.W.11) ..	37	132
10. E. Nottingham (York) ..	37	127

the competitors into two lists.

Well, those are the plans for the three-way stretch during 1949, and I hope everyone will do something in one or other of the battles. The real test of ability, of course, is the Four-Band DX table, particularly when it comes to showing good figures in all four columns and not merely in one.

NEWS OF THE MONTH

3.5 MC

Of course the big event of the month has been the breakthrough of real DX on the 3.5 mc band; but still there have been surprisingly few listeners up there to take advantage of it. C. S. S. Lyon (Liverpool) has, as usual, been in at the kill, and he has heard VK5KO (1845-2000), VP8CH (2120), VS6AJ (2010), VS9AN (1850-2100) as well as CT3AB and PY7WS after midnight. During 1948 C. S. S. L. logged 56 countries in 21 Zones on the 3.5 mc band—does that shake some of you?

Other stations coming

through since the arrival of his letter have been ZL4GA, VK4EL, VK7YL, ZC8PM, OX3MG (all round about 1930), and I understand that ZS1M and ZS1T have been there in the mornings at about 0800 and also in the early evenings.

E. J. Parish (Watford) has been active on the band and comments on the high return of QSL's. One W station thanked him for his first 80-metre report from England. D. H. Dell (London, S.E.26) says C. S. S. L.'s Calls Heard have almost frightened him off! He obviously has some receiver trouble and has been hearing little but locals.

THE 7 MC BAND

This band also suffers from lack of support, but the Calls Heard list from W. J. C. Pinnell (Sidcup) speaks for itself and includes 23 countries—all DX. It seems curious to me that there is not more keenness about this band, because it isn't even difficult to log the DX; perhaps the

real difficulty is getting out of (or staying out of) bed!

TOP-BAND ENTHUSIASM

Now with 1.7 mc we are on a different footing altogether. Once you admit that reception of a 10-watt station from over 300 miles is a worthwhile performance and constitutes a DX achievement you have proved that it is a DX band. Hence the Counties Heard scheme. This, by the way, has been asked for and is now heartily supported by D. W. E. Powell (Wilton), W. McBey (Kirkwall), R. A. Hawley (Goostrey), L. H. Warne (Yeovil), H. M. Graham (Harefield), J. H. Woodward (Stoke-on-Trent), K. Parvin (Thornton Heath), F. W. Lindley (Barnhill) and A. Bannister (Manchester). So I will expect to see lists and claims from all those listeners next month!

THE 14 MC DX

In spite of the fact that the passing of the sunspot maximum is obviously making itself felt, 14 mc continues to teem with DX of all kinds, if you hit the right days and the right times. The band can be dead for long periods, and it has been fading out at 2030 or 2100 at nights, but it still brings in the stuff. K. Smeeton (Runcorn) reports HV1A, ET3Y, FF8AA, ZD1BD and ZD2G. D. S. Kendall (Potters Bar) weighs in with KH6AQ (1800), VE8ID, ZD1BD, M13SC, ZD4AB, VP9G and VP9S. W. J. C. Pinnell (Sidcup) and O. A. Good (Oswestry) seem to be the only ones to mention ZD9AA (Tristan da Cunha) although he has been S9 on many occasions. I heard him on several consecutive nights at times between 1930 and 2200 and all frequencies between about 14010 and 14090.

O. A. Good remarks that the Asiatics, especially from China, have been coming in at an absurdly early hour of the

morning; that W7 phone has been good at 1715-1815; that ZL phone is there from 0815 to 0915; that KL7's are good in the morning and KH6's in the evening; and that he would like to get the call-sign of a station who might be W7LGH/C6, heard working VR2BD at 0835 on phone. Alternative versions of the call are W7LDK and W7LZJ—can anyone settle it?

ACTIVITIES ON 28 MC

O. A. G. has also broken out on this band, having acquired a new receiver, and in a few days logged 38 countries in 20 Zones. D. S. Kendall (Potters Bar) has been combing the band and has emerged with VS6AE, CR7AD, OA4AB, HI8WF, VP2KM, HH1HB, XZ2KN, XE1PA, TI2RC, YS2AG, HR1MB, YN1RO and ZD1BS. N. A. S. Fitch (London, E.10) has only listened for 50 minutes during the month, all on 28 mc, but he is obviously building castles in the air and designing the super-transmitter which he intends to have later in the year. He contemplates going for his Morse test at Easter.

A. Bannister (Manchester) comments on the many occasions when short-skip conditions have prevailed on 28 mc, bringing in terrific signals from Cornwall, London, GD, EI, PA and OZ. He has also logged VU7AF in Nepal (28210) as well as C4MP and C3KC.

SUPER DX

I am beginning to think that I don't know what "super-DX" means any longer; but under this heading D. L. McLean (Yeovil), mentions the following on 28 mc phone—C3ZZ, CR7AH, 10 KG6's, 6 J9's and KR6's. On 14 mc phone he lists FF8AA, FQ8SN, HV1A, ZS3G, YS1GM and 3 ZD1's.

K. Parvin (Thornton Heath) says that VQ8CB is definitely on Chagos Island and is VQ8AB operating his trans-

mitter over there. VQ8AS is also on the island. K. P. heard FR8AB working a Frenchman on 28 mc phone and would like to know more. His New Year listening started with KR6BM at S9—also 28 mc.

A. M. Norden (Golders Green) says that VU7AF is on 14 mc phone at 1300 most days, and asks whether VK1AD (Heard Island) counts as a separate country. I should say he certainly does. (There could be a bad pun somewhere about this Heard Island!)

E. J. Parish (Watford) is another who has logged FF8AA and FQ8SN on 14 mc phone. From N. A. Phelps (London, N.10) come three nice ones—FP8AB (St. Pierre-et-Miquelon), EA6AB (Minorca) and ZS2MI (Marion Is.)—all 14 mc.

GENERAL NEWS

L. E. P. Holgate (Jersey) despite the very nice list of calls for the 14 mc SLP, says that they are badly off in Jersey for reception because of heavy noise and absence of suppression. Apparently it isn't covered by any form of legislation over there.

D. S. Kendall (Potters Bar) made HAC in 1 min. 30 secs., on December 5, with KP4CU, VS9AH, G8TH, PZ1M, VK3AQL and CN8BK—all 28 mc. G. P. Watts (Norwich)

For the information of those who have shown some interest in the matter, the setting of this feature in the present style results in our being able to get 5 per cent. more words into a page in comparison with the old two-column setting—and it was to get more words in that we adopted this style.

comments on the exasperating nature of our hobby; all through 1948 he wanted a Burmese station to give him an extra Zone for the Marathon, and the very first station he heard in 1949 (on January 1) was XZ2KM on 28 mc phone!

E. J. Logan (Hertford), the winner of the Phone section of the Marathon, says he is all in favour of competitions. He is sure he logged much more DX than he would have done without the competitive urge.

M. H. Preston (London, S.W.12), co-winner of the Phone and CW section, suggests a very interesting form of competition for the future, in which all the countries of the world are allotted so many points, with a multiplier for 7 mc and 3.5 mc reception. His scheme really would make an excellent yardstick of DX ability, but I have reluctantly turned it down as being too complicated; it would involve the publishing of a complete list of countries with



The set-up at W2NFR, Forest Hills, Long Island, New York. The XYL is also interested!

ZONES HEARD LISTING (POST-WAR)

Listener	Zones	Countries
'PHONE and CW		
N. A. Phelps (London, P.10)	40	213
M. H. Preston (London, S.W.12)	40	209
D. W. Bruce (Eltham)	40	203
A. Baldwin (London, N.11)	40	200
M. E. Bazley (Birmingham)	40	198
O. A. Good (Oswestry)	40	194
C. S. S. Lyon (Liverpool)	40	182
L. N. Goldsbrough (Wirral)	40	182
W. J. C. Pinnell (Sidcup)	40	170
G. P. Watts (Norwich)	40	164
R. A. Hawley (Goostrey)	39	179
T. W. Jones (Birmingham)	39	163
F. N. Baskerville (Southport)	39	147
A. W. Robertson (Cranford)	37	146
F. W. Lindley (Dundee)	37	134
A. Studley (Harrow)	37	130
G. Braithwaite (Belfast)	36	150
N. A. S. Fitch (London, E.10)	36	138
J. G. P. Butler (Portsmouth)	36	126
D. W. E. Powell (Wilton)	36	123
J. E. Hosking (London, S.W.11)	35	109
D. I. Cruse (Sidcup)	34	107
'PHONE ONLY		
E. J. Logan (Hertford)	39	172
D. W. Bruce (Eltham)	38	165
R. A. Hawley (Goostrey)	38	165
B. Needham (London, W.11)	38	158
D. L. McLean (Yeovil)	37	154
A. Bannister (Manchester)	37	149
L. N. Goldsbrough (Wirral)	37	149
O. A. Good (Oswestry)	37	144
D. Kendall (Potters Bar)	37	140
J. M. Graham (Glasgow)	37	135
R. S. Craig (London, S.E.1)	37	135
F. K. Earp (London, S.W.11)	37	132
E. Nottingham (York)	37	127
G. P. Watts (Norwich)	36	140
G. Braithwaite (Belfast)	36	139
A. Levi (Belfast)	36	136
L. Shearlaw (Camberley)	36	128
T. W. Jones (Birmingham)	36	126
T. W. W. Dearlove (Frimley Grn.)	36	124
C. S. S. Lyon (Liverpool)	35	140
F. L. Rogers (London, N.W.1)	35	130
A. W. Robertson (Cranford)	35	130
R. Baldwin (London, E.17)	35	128
D. G. Martin (Cheltenham)	35	121
B. C. Cage (Ipswich)	35	120
W. T. Higgins (Camborne)	35	114
D. W. E. Powell (Wilton)	35	110
L. K. B. Dalby (Gainsborough)	35	103
K. Parvin (Thornton Heath)	34	126
A. R. Wybrow (London, S.E.22)	34	102
J. R. Cooling (Manchester)	34	101
L. Corder (Hadleigh)	33	120
H. M. Graham (Harefield)	32	101

their "points value" and the difficulty of coping with new ones which spring up from time to time would be rather serious.

M. H. P. also mentions his verifications. On an all-time basis he has the surprising total of 184 countries *verified*! For post-war listening he can verify 162, and for 1948 listening, 67.

K. Parvin (Thornton Heath) is now a Four-Band Listener on a new receiver. His first excursion to 28 mc has brought him 26 Zones and 55 Countries, and on 3.5 mc he has logged W, VE, VO and his first CT1. F. W. Lindley (Barnhill) is going to confine his listening to 1.7, 3.5 and the VHF bands in future. D. W. E. Powell (Wilton) is also going to concentrate on 1.7 and 3.5. On the latter band he is aiming at WAS; of the former he says there is a fine return of QSL's for reports, which are obviously appreciated. He has had QSL's from OZ, D2, G, GI and GM since October.

D. G. Martin (Cheltenham) tells us that some of the Damascus stations are now using the prefix YK. He has heard YK1AC. He sums up the bands by saying 28 mc is "on form"; 14 mc fades out by 2100; 7 mc is good after 2300; 3.5 mc is all right for W's; and 1.7 mc brings in DX over 200-300 miles.

OUR YL SWL

Welcome to the only YL to disclose her identity in these pages! She is Patricia Litson (Saffron Walden), and says she is "flabbergasted" at the DX that some of our regulars pull in. She thinks her receiver goes dead in the mornings and again at about 2145—but her list of Calls Heard for 14 mc shows that she *can* log the DX all right.

FROM OVERSEAS

Capt. J. B. Lievens (Suez Canal Zone) hears a very different bunch of stations

from our Home listeners, as his Calls Heard show. He mentions, in his letter, ZD2G, AR1KI, AR1RJ, 4X4AD and CR8JB; some of us would like to hear the last one, in particular!

ST2AM (Khartoum) asks me to thank British listeners for their generosity in sending Reply Coupons, but unfortunately they cannot be used in the Anglo-Egyptian Sudan—so please don't send them any more.

QUERIES

M. G. Whitaker (Shelf, Halifax) asks whether Northern Rhodesia and Southern Rhodesia are two separate countries. They most certainly are, with their separate prefixes of VQ2 and ZE. He logged W5OCN/MM at Bahrain, and tells us that ZC8PM is definitely *not* the old ZC6UN.

H. Crawford (Bury) asks whether we can't offer more inducements to listeners in the way of Certificates, and goes on to say that listeners might even contribute to a pool from which prizes could be given. Personally, I feel that our regular listeners' keenness is all that could be desired without such inducements.

SUMMARY

One last jog to your memories about the 1949 Competitions. Here they are:

- (i) **Four-Band DX**; Countries heard on each band (post-war); no discrimination between Phone and CW, but mention "Phone Only" if you want to. Total countries heard.
- (ii) **Monthly "Zones Heard"**: For each complete calendar month; order of merit decided by Zones, with Countries in second column. One list for Phone and CW, one for Phone Only.

DX QTH's

AC4RF	R. W. Ford, Lhasa, c/o Gyantse PO, Tibet, via Siliguri, West Bengal, India.
AR1OD	QSL via W3KXS—Station in Damascus.
CR7AH	Joao Manuel, Jr., Box 265, Lourenco Marques.
HZ1AB	1949 AACs Sqn., APO 616, US Army.
J9ABS	AP0 239, c/o PM, San Francisco.
JA4BDL	Maj. J. T. Lake, HQ Signal Regt., BCOF, Kure, Japan.
KG6DQ	Box 33, Navy 926, c/o FPO, San Francisco.
KR6BB	AP0 239, c/o PM, San Francisco.
MD1A	Signal Officer, 13/18 Royal Hussars, MELF 6.
MT2D	BOAC, Tripoli, Tripolitania.
TF3ZM	Hannes Thorsteinsson, Box 1080, Reykjavik.
VE3DBA	J. Hughes, 1314 3rd Ave., East, Owen Sound, Ontario.
VS1GX	RAF Seletar, Singapore.
ZS1MM	J. Dain (ex-G2FMM), Kilbrow, 10 Park Avenue, Camps Bay, Cape Town.

New Prefixes

(Now in Operation)

DL2, DL4, DL5 :	Allied Services in Germany
JA :	Japan
KC6 :	Caroline Islands
KR6 :	Ryukyu Islands (Okinawa, etc.)

- (iii) **1.7 mc Counties Heard**: February 26, 2000-2200 GMT—14 mc Phone Only.
 Send your 1.7 mc Calls Heard in the form of a list giving one station from each county heard. At the end give the total. This will run as a 1949 Marathon, with one list for Phone and CW and another for Phone Only. We may not be able to publish all the Calls Heard each month, but will of course tabulate the scores as they mount up.
- February 27, 0800-1000 GMT—14 mc CW only.
- The closing date for next issue is February 2, first post. So please, by that date, let me have your Four-Band list (post-war); your Zones Heard list (January); and your 1.7 mc Counties Heard list (January). I don't suppose many readers will feel inspired to enter all three, but there's no reason why you shouldn't if you have the time and are keen enough.

SET LISTENING PERIODS

January 29, 1700-1900 GMT
—14 mc CW and Phone.

January 30, 0600-0800 GMT
—3.5 mc CW and Phone.

Address them, with all letters and Calls Heard, to DX Scribe, *Short Wave Listener*, 49 Victoria Street, London, S.W.1. Good Hunting and May They QSL!

Have you a Zone Map?

CALLS HEARD

Please note the following simple rules for sending in lists of Calls Heard :

28 and 14 mc : No Europeans, No USA except W6 & W7
No VE except VES, 6, 7 & 8.

7 mc : No Europeans.

Arrange logs in the form given here, with (a) prefixes in alphabetical order, but not repeated ; (b) numbers in numerical order and repeated as part of the call-sign ; (c) call-signs in alphabetical order. For example —VK2GW, 3CP, 4UL, VP1AA, 6CDY, VQ3HJP, 4EJT, W6ENV, 7VY. Please underline each prefix, keep each list to one band, and, in short, make your lists exactly like those below, except that the more space you leave, the better.

SET LISTENING PERIODS

28 mc

Dec. 26, 1100-1200 GMT

E. G. Dommert, 38 Yonder Street,
Ottery St. Mary, Devon.

AP2F, AR8AB, CE3AB, CN8BA,
8ER, FA3JY, HZ1AB, KP4BI, 4DU,
4EZ, MD2D, 2E, PY2CK, 2JU,
PZ1RM, ST2AM, SV0WD,
VO2AN, VP6JC, VU2BF, 2LJ,
VS9AH, W2LDH/MM, 5AXI/MM,
ZE2JE. (Rx : HRO.)

W. Eyre, Orchard Field, Whaley
Bridge, Derbyshire.

AP2F, CN8ER, 8MI, FA3JY,
HZ1AB, KP4BI, 4DU, MT2D,
PY2CK, PZ1RM, ST2AM,
VO2AN, VP6JC, VU2LJ. (Rx :
Eddystone 640.)

Capt. J. B. Lievens, R.E., Canal
Zone, Egypt.

AP2F, FA3JY, HZ1AB, KP4BI,
4DU, M13CD, MT2D, PY2CK,
ST2AM, VP6JC, VS9AH, VU2BF,
ZE2JK. (Rx : National HRO.)

M. G. Whitaker, Shelf, Halifax,
Yorks.

*PHONE: AP2F, CN8ER, FA3JY,
HZ1AB, KP4CU, ST2AM, VP6JC,
W2LDH/MM, ZA3D. (Rx :
Battery 0-V-1.)

R. A. Hawley, Brookfield Crescent,
Goostrey, Cheshire.

*PHONE: AP2F, CN8ER,
CR7AH, FA3JY, HZ1AB, KP4DU,
PY2CK, VS9AH, W2DUM/MM,
2EJW/MM, 5AXI/MM. (Rx :
Eddystone 504 and 640.)

E. Nottingham, Lyndhurst, Upper
Poppleton, York.

*PHONE: AP2F, CN8ER,
FA3JY, HZ1AB, KP4BI, 4DC,

4DU, 4EZ, 4FP, MT2D, PY2CK,
PZ1RM, ST2AM, VP6JC, VQ2HC,
VS9AH. (Rx : *Hallcrafters* 5-10.)

W. J. Willis, 17 Alfred House,
London, E.9.

*PHONE: CN8ER, HZ1AB,
KP4CU, MT2E, PY2CK, ST2AM,
VP6DC, VS9AH, ZE1AB. (Rx :
Eddystone 504.)

W. E. Bachell, 24 Hill Road,
Prittlewell, Essex.

*PHONE: AP2F, AR8AB,
CN8BA, HZ1AB, KP4ES, LU4BP,
MT2FU, PY2CK, VP6YB, VS9AH,
VU2BF. (Rx : *Hambander*.)

K. L. B. Dalby, Green Lane, Lea,
Gainsborough, Lincs.

*PHONE: AP2F, CN8ER,
FA3JY, KG6EG, KP4EZ, MT2D,
2E, PZ1RM, VO2AN, VQ2HC,
KG6, W2CHH/W2VJW/MM,
WSAXI/MM. (Rx : Eddystone 640.)

G. P. Watts, 62 Belmore Road,
Thorpe, Norwich, Norfolk.

*PHONE: AP2F, CN8ER,
FA3JZ, HZ1AB, KP4BI, 4CU,
4DU, 4FP, MT2D, PY2CK,
PZ1RM, VP6JC, VS9AH. (Rx :
Eddystone 640.)

D. E. Tyler, 106 Clarendon Road,
London, W.11.

*PHONE: AP2F, AR8AB,
CO7GM, MT2E, M13L, OQ5AB,
ST2AM, VS9AH, VQ4CUR. (Rx :
Hambander.)

K. Parvin, 98 Winterbourne Road,
Thornton Heath, Surrey.

*PHONE: AP2F, CN8ER,
8MI, HZ1AB, KP4BI, 4DU, 4MP,
MT2D, OQ5AB, 5CA, PY2CK,
PZ1RM, ST2AM, VP6JC, 9G,
VS9AH. (Rx : Eddystone 640.)

D. S. Kendall, 40 Aberdale Gardens,
Potters Bar, Middlesex.

*PHONE: AP2F, AR8AB,
CN8BA, 8EI, 8ER, H18WF,
KG6ES, 6ET, KP4AZ, 4DU,
MT2D, 2E, 2FU, SV0WF,
VP6JC, VQ4SC, VS9AH, VU2LJ.
(Rx : 14-Valve Home-built Superhet.)

D. L. McLean, 9 Cedar Grove,
Yeovil, Somerset.

*PHONE: AP2F, CN8ER, 8MI,
HZ1AB, KP4BI, 4DU, 4EZ, 4FP,
MT2D, 2E, PY2CK, PZ1RM,
ST2AM, VP6JC, VS9AH. (Rx :
RCA AR88LF.)

14 mc

Dec. 27, 2000-2200 GMT

L. E. P. Holgate, Havre-des-Pas,
Jersey, C.I.

*PHONE: EK1AD, PY1TZ, 4IZ,
W7HTB.

CW: CM8AZ, CN8AD, 8AS,
CPIAS, 1CA, CX2BN, FA8CN,
8CR, 8IH, 9RW, HH3L, HK3FF,
3KB, KH6AP, 6CT, KP4HX, 4KD,
LU2DF, 6AP, OQ5AC, 5AV, 5CV,
PY2AM, 2AP, 2AX, 2NK, 2QA,
3CC, 5AF, PZ1NB, T12ACD,
UF6KAB, UL7BA, VK2NG, 2XU,
3MC, 3VJ, 3WA, 3XO, 4AP, 4FR,
5OS, 7DC, W7AMX, YN3DG,
ZD1PW, ZL2AV, 3FR, ZS6RA.

GENERAL

3.5 mc

C. S. S. Lyon, 15 Ullet Road,
Liverpool 17.

CW: CT3AB, FA3DS, 8BG, 9RZ,
KP4HU, PY7WS, VE3AGX, 3BER,
3DH, VK5KO, VO1S, 2R, 4AD,
4AF, VP8CH, VS6AJ, 9AN,
ZBIAN, ZC8PM, 4X4CC. (Rx :
1-V-1.)

D. L. McLean, 9 Cedar Grove,
Yeovil, Somerset.

*PHONE: VE1KS, 1LR, VO2W,
4Q, W1AW, 1CPI, 1FNL, 1IF,
1HZ, 1MKK, 2AWR, 2CSY,
2GZ, 2HF, 2LIR, 2NHM, 3FII,
3UBG, 4IYO. (Rx : RCA AR88LF.)
2300-2400 GMT.)

7 mc

W. J. C. Pinnell, 40 Melville Road,
Sidcup, Kent.

*PHONE: CN8AJ, 8BF, 8BV,
8MN, 8MU, 8MZ, CO6OM, 8BC,
FA3DS, 8BE, 8CC, 8ZZ, 4TF4F,
HK3BJ, PY1RC, 2IT, 4RJ.

CW: CM7MC, CN8BF, 8BQ,
8ER, 8MI, CO2LN, FA8AB, 8BG,
8ZZ, 9RZ, HK3CT, HZ1JE,
K4USA, KL7KO, KP4CC, 4DF,
4GP, 4HU, 4II, KV4AA, MD7AC,
PY1AHF, 1AIF, 2B, 2G, 7CY,
7LN, TF3ZM, UA0VB, VP6AA,
6AB, UL7BS, VK5FH, VO2G

6AS, VP3AA, VS6AG, W8QOH/5, 9VVZ/MM, ZBIL, ZC1CL, 6UNJ, 6UNT. (Rx: V55R.)

14 mc

O. A. Good, 1 Western Drive, Oswestry, Shropshire.

'PHONE: W7DK/C6, C7TY, FF8AA, FQ8SN, HZ1AB, J2HY5, KG6AG, KH6CT, KL7DW, 7LL, MI3CD, 3SC, OQ5CA, 5CN, 5CQ, VE6TM, 7ZM, 8MB, VK4MW, 4UL, 5RN, 7AZ, 7KB, VP3CW, VQ2JC, W7ADH, 7DET, 7DL, 7EKA, 7HBK, 7HIA, 7HTB, 7IQO, 7JMY, ZD1BD, 1PW, 1SW, 2G, 4AX, ZLICD, 1DL, 2BT, 2WH, 3CV, 3FV, 3JQ, 4GK, 4HB, ZS1AJ, 1CK, 1DO, 1EZ, 2DY, 3B, 3D, 3F, 4D, 4N, 6AJ, 6CV, 6CZ, 6DY, 6IR.

CW: CR6AI, FE8AB, W7KBC/KG6, KH6CT, 6MI, KV4AB, SM8VC/MM, VP3CW, ZD9AA, ZEZJ, ZS3D. (Rx: Mod. R1155, 2RF and S640.)

Capt. J. B. Llievens, R.E., Suez Canal Zone, Egypt.

ARIKI, 1R1, 8BC, CE3AB, CN8BV, CR7BL, FQ2L, ET3ALS, F8BC, FT4AR, HC31F, HK4EF, HL1BJ, HP1BR, HZ1AB, JZCOM, 2GIL, 4AAM, KH6GA, LUIDD, MDIA, MD7JT, MI3FG, MT2FU, OQ5DY, PY2AH, ST2GE, UBSKAG, VK2AGU, 6AQ, VQ2BF, VP9S, VQ2JC, 4ASC, VS9AH, VU2BH, W6DI, YNIRO, ZC6XY, ZD1BD, 2G, ZS2FA, 3D, 3F, 4X4AD. (Rx: National H.R.O.)

B. Davies, 73 Eden Road, Beckenham, Kent.

ET3Y, FQ8SN, HZ1AB, KL7LL, MI3CD, 3ZZ, OQ5CF, 5CQ, OX3GG, VE7ZM, 8MI, VK2AGW, 2ER, 2US, 3AWN, 5RN, VQ2HC, 2HW, 4ASC, 4VSH, ZC1AL/ZC6, ZD1BD, ZL2BT, 3CV, ZS1BH, 1DO, 3F, 5CH, 5GK, 6CZ, 6IG (Rx: 0-V-1.)

E. J. Parish, 29 Oxford St., Watford, Herts.

'PHONE: AR8AB, CE1AR, CO7CX, CT3MN, EA9AI, EL5A, ET3AF, FF8AA, FQ8SN, FT4AR, 4UT, HZ1AB, J2HY5, LU6AJ, MI3BC, 3CD, 3ZZ, NY4AB, OQ5CF, 5CQ, 5DE, PY1ACQ, 2CK, 4LZ, 4RJ, 6AG, 6CO, 7CE, 7DD, 7QG, 7VA, 8AM, VESMI, VK5RN, VP3MCP, 3TW, 4TH, 9F, 9S, VQ2JC, 2JD, 4CUR, 4ERR, 4NSH, VS9AH, W6BSY, 7ADS, 7IYA, 7JMY, YV5AB, 5BW, ZC6CZ, 6XY, ZD1BD, 1SW, ZE2JE, ZS1DH, 1DO, 1EG, 2DY, 2FA, 2UI, 3D, 3F, 4D, 4N, 5BU, 5FY, 5GK, 6AJ, 6BS, 6BY, 6CV, 6CZ, 6IR, 6DY. (Rx: Hallcrafters S/40.)

K. Smeeton, 36 Runcorn Road, Barnston, nr. Northwich, Cheshire.

'PHONE: CO7CX, CN8AR, 8BA, 8BB, 8BQ, 8BY, 8BV, 8EI, 8EK, 8EQ, 8ER, 8MI, 8MZ, CT3MN, EA9AI, EK1AD, 1AI, 1AS, 1MD, ET3Y, FA3GZ, 3JY, 8WH, FF8AA, FT4AP, 4AR, HV1A, KP4AZ, MT2E, 2FU, NY4BA, OQ5CF, OX3BG, 3MC, PY2ARL, 4AC, 6CO, 7AT, 7CM, 7DD, 7QG, 7VA, VK4UL, VO1AF, 1AJ, 2BF, 2BP, VQ2HC, 4CUR, ZB2E, ZC6XY, ZD1BD, ZD2G, ZS1AJ, 1AX, 1BV, 1CK, 1DJ, 1DO, 2DY, 3F, 5GK, 6AJ, 6CZ, 6DY, 6KK, 6LJ, 6OY, 6QJ. (Rx: Hambander and 1155A.)

G. Braithwaite, 15 Ayr St., Belfast.

'PHONE: AR8AB, C3EA, ET3Y, HV1A, KH6AQ, 6CT, MI3CD, OQ5CF, VE7ZM, VQ2JM, VS9AH, VU2BU, W7DET, 7HIA, 7HTB, 7IQO, 7IYA, 7JMY, ZD1BD, 1PW, 1SW, 2G, ZS3F, 5FY, 6CZ, 6DW, 6DY, 6IS, 6PT, CW: CT3AA, 3AB, CR7BB, 8AD, CX1BO, EA9AI, KL7LL, KP4HX, 4SE, MI3FG, OQ5AV, OX3MG, 3RD, 3RG, PZ1NB, TP3ZM, UA9KCA, UBSAQ, UC2CB, ZKAA, UF6KAB, UG6AB, URZKAA, VGERP, VK4RC, 6GW, VQ4ALR, 4CUR, 4MS, 5PDB, ZC8PM, ZL2DV, ZSIH, 1GC, 5DU, 5JI, 6DR, 6FN, 6NR, 6OW, 6RA, 6RD. (Rx: V55R.)

Miss P. Litson, 115 Little Walden Road, Saffron Walden, Essex.

'PHONE: CN8BB, 8MZ, EK1AD, 1DI, FA3J, FT4AP, MI3SC, MT2E, PV7VB, VP4TH, VQ4ERR, ZC6XY, ZD1BD, 1PW, 2G, 4AX, ZS2DY, 6BY, 6CZ, 6DY, 6XY. (Rx: R1155, 1730-1930 G.M.T.)

O. R. F. Mason, Greenswans, Fairlawn Gardens, Prittlewell, Essex.

'PHONE: CE3AY, CN8BA, 8MI, CO2UP, 8MP, CX2CO, EK1AS, ET3AE, HK1FB, 3BI, KH6GS, LU4CN, 4DJ, 6AJ, 7BU, MDIA, 2B, MT2E, OA4M, OQ5CF, PK3WG, PY1ACQ, 2AK, 4IK, 7AY, TI2FG, 2OA, 2RC, VE7ZM, VK2II, 2JK, 2TE, 2AGJ, 2AHA, 3BZ, 3LN, 3TA, 3XD, 3YH, 4MW, VO2AF, 2BP, VP2GF, 4TU, 9F, VS7GR, 7IT, W6D1, 6BZE, 6BZF, 6KYO, 6NKF, 6PAX, 6VFR, 7DL, 7DV, 7DET, 7FLD, 7GU1, 7HIA, 7HRV, 7HTB, ZE1CQ, 1LE, YV1AU, 5AB, 5AK, 5AY, ZC6SQ, ZL4FO, ZS6DW. (Rx: R1155/4 Modified.)

583537 A/A Fowler, R.A., "A" Flt, "C" Sqdn, Apps' Wing, No. 1 Radio School, R.A.F. Cranwell, nr. Steaford, Lincs.

'PHONE: CN8MZ, CO8MB, EK1AD, FA3GZ, J9ACN, MDIA, MI3SC, 3ZZ, OQ5CF, OX3BD, PY6AL, VE7ZM, VK2US, 3EN, 3LA, 9AZ, VO1AF, 2FL, 4Q,

VP3CW, 4TH, 7EH, 9G, VQ2HC, 4ASC, W6GLO, ZC6XY, ZD1BD, ZL3CV, ZS2G, 6CZ, 6DY, 6KK. Rx: Battery 0-V-2.)

A. Ross, 40 Chiltern View, Letchworth, Herts.

'PHONE: AR8AB, CN8AB, 8AR, 8BA, 8BB, 8EI, 8EQ, CO8MP, CX2CO, EA9AI, EK1AD, ET3PY, 3Y, FT4AI, HKIDZ, 1FE, 1FG, HZ1A, LU6AJ, MDIA, MI3FG, 3FT, 3SC, 3SI, MT2E, NY4BA, OQ5CF, 5CQ, OX3BD, PY1ACQ, 2CK, 4LZ, 4RJ, 6CO, 7DD, 7DO, 7QG, 7VI, VE8NS, VO1AF, 2BF, 2BQ, 4Q, 6AL, VP3CO, 4TH, 9G, VQ2CH, 4ASC, VU2VU, W6VFR, 7ADH, 7BDT, 7IQO, 7JMY, 4X4A, ZB2E, ZC1AZ, 6XY, ZD1BD, 1PW, 1SW, ZL3VP, ZS1PW, 1VI, 3D, 3F, 5DY, 5SY, 6CV, 6CZ. (Rx: Ex-Army R.107, 1900-2100.)

A. M. Norden, 9 Leaside Crescent, London, N.W.11.

'PHONE: CN8BV, 8EI, 8EQ, EK1AD, FA8CC, 8IH, FT4AC, 4AR, KH6AQ, 6CT, MI3DC, MT2D, OX3BD, PY1AD, 1KC, 1QJ, 7AD, 7AF, 7QG, SV0WF, VE6TM, 7TO, 8OX, VO1AF, 2BP, 2BQ, 4Q, 6AL, W6NIG, 6PWR, 7ADS, 7BBB, 7HTB, 7IUS, 7IYA, 7JMY, ØCDW/Airborne, ZD1BD, ZE1JX, ZS1JB, 3F, 4CV, 6CZ, 6DJ, 6DY. (Rx: Philips 7valve-B.C.)

D. G. Martin, 65A Winchcomb St., Cheltenham, Glos.

'PHONE: CN8BA, 8EI, CO7CX, FA8WH, MI3SC, OQ5CF, 5CQ, OX3BD, PY7DD, 7QG, UA3AX, VESMI, 8MP, 8TN, VK2AGU, 3JT, VP6IS, ZD1BD, 1PW, ZS4D, 6CZ, 6DY. (Rx: Eddystone 640.)

28 mc

R. A. Hawley, "Torview," Brookfield Crescent, Goostrey, Cheshire.

'PHONE: 4X4AC, AP2F, 2R, AR8AB, C7TY, CN8EF, 8ER, ET3AH, FA3FB, 3GZ, 3JY, HC1OY, HZ1AB, KP4CU, 4EZ, LU3AA, MT2D, 2FU, MI3CF, 3LZ, ST2AM, TA3FA, VK5GD, VP6CDI, VQ4SC, VU2LI, W2LDH/MM, 2ZBA/MM, 5AXI/MM, ØIAX/MM, ZL4AT, ZS6KF. (Rx: Eddystone 504 and 640.)

F. K. Earp, 33 Lavender Terrace, S.W.11.

ET3AH, HC2OT, HK4CO, KP4DP, 4HB, OQ5AB, TG9FG, VE6LA, VP1UF, 3TR, VU2GB, VK2ABJ, 6HL, W7FLO, 6PRB, ZL3AB, ZS6PU. (Rx: RF24 and 4-valve superhet. 0930-1030, 1530-1545, October 11.)

A. Bannister, 58 Demeses Road, Whalley Range, Manchester 16.

'PHONE: AP2F, 2R, C3KC, 4MP, CR9AG, CX1DB, 4CS, EA9AI, ET3AH, HClAY, 2OT, HH1HB, HK4CO, HV1A, J9ANZ, KG6DZ, 6ED, 6EP, MI3LZ, OQ5AB, PZ1M, VK2NY, 3KX, 3NE, VP2KM, 4TAI, 4TAN, 6YB, VQ4CUR, VS7PS, VU2CO, 2GB, 7AF, ZE1JO, 2JI, ZL3AR, 3CV, 3LE, 4AT, 4CN. (Rx: Modified P22.)

D. S. Kendall, 40 Aberdale Gardens, Potters Bar, Middlesex.

'PHONE: CE2CC, 3AB, 3CT, 3GA, CN8AB, 8EN, 8EQ, 8MI, CO2EH, 2LW, 2PA, 7GM, 7RQ, 8JB, CX2BP, EL6A, FA3JY, HClOY, 2KJ, 2KN, 2OA, 2OT, HH2CW/MM, H18WF, HK3AB, HR1MB, KP4HZ, 4IJ, 4SP, KZ5FL, LU3DH, 4BO, 4DD, 5DL, MI3AB, 3LZ, MT2FU, O44AB, OQ5AB, 5CA, 5LL, PY1ACY, 1FR, 2CK, 2FT, 2QK, 4RK, PZ1M, 1RM, 1WK, ST2AM, 2KR, TI2RC, VP3MCB, 3TR, 4TAI, 4TV, 6JC, 6CDI, VQ2DH, 2HW, XE1PA, YNIRO, YSZAG, YV4AM, ZD1AS, 4AU, ZE1JH, ZS1P, 3G, 5DD, 5FT, 6DY, 6FN, 6PT. (Rx: 14-valve home-built superhet. January 1 and 2, only.)

J. H. Woodward, 6 Council Houses, Rode Heath, Stoke-on-Trent.

'PHONE: FA3FB, HC2KJ, KP4GU, 4IER, MI3LZ, MT2E, PY2CK, PZ1RM, VO2CP, VP6CD, VQ5WCP, VS9AH, VU2GB, W2DUM/MM, 3NCV/MM, 3SPY/MM, ZC6UN, ZE1JL, ZS3G, 6JI. (Rx: Eddystone 640.)

E. A. Parkinson, 8 Hawthorn Drive, Rodley, Leeds.

'PHONE: AP2F, 2R, CE3AB, CO2LW, CR7AH, HClOY, HH2BL, HZ1AB, KP4GU, 4PI, LU3AA, MI3LZ, PY1GO, 2OE, 3CR, PZ1M, ST2AM, 2KR, VK5GD, VP3MCB, 4TAN, 6JC, 9DD, VQ4CUR, VU2GB, 2LG, ZC6XY, ZE1JO, ZD4AU, ZS1P, 5DS, 5FJ, 6EB, 6IR, 6KW, 6NM, 6OF, 6QK. (Rx: Eddystone 504.)

D. L. McLean, 9 Cedar Grove, Yeovil, Somerset.

'PHONE: AP2F, 2J, 2R, AR8AB, C3ZZ, CN8BA, 8EI, 8ER, 8ET, 8MI, FA3FB, 8CF, HZ1AB, J9ABO, 9ABS, 9ACD, 9ADN, KG6CX, 6DE, 6DP, 6DQ, 6ED, 6EO, 6ES, 6ET, 6EU, KR66B, 6BH, MD2BU, MI3LZ, MT2D, 2E, 2FU, OQ5CA, PY7QG, ST2AM, VK2AMU, 2ASN, 4AP, 5KL, 6DD, 6HF, VP6JC, VQ4ASC, 4CUR, 4SC, VS9AH, VU2GB, 2LJ, W3CHH/KG6, 3NKS/CR7, 6XYT/CR7, 7KKH/KG6, ZC6UN, 6XY, ZD4AB, 4AU, 4AX, ZE1JO, 2JK, 2JV, ZL2LW, 3BS, 3DS, 3GJ, 3JM, 3JO, 4AT, 4HP, ZS3G, 6PT. (Rx: RCA AR88LF. 0900-1100 G.M.T., 9½ hours.)

A. Levi, 33 Old Cavehill Road, Belfast, N. Ireland.

'PHONE: AP2F, CN8EQ, 8ER, CR7AH, HK4CO, HZ1AB, HR1MB, KG6ET, KP4EZ, 4HN, MD7BL, MI3CD, 3LZ, MT2E, PK2ZEF, PZ1RM, UA1BE, VK2OT, 4AB, 5SW, VP4TAN, 6YB, VQ4CUR, YT4AX, ZC6UN, 6UNT, 6XY, ZE1JO, 2JK, ZL3JO, 4AT, ZS6AM. (Rx: Eddystone 504.)

1.7 mc

D. Powell, Loughrigg, Shaftesbury Road, Wilton.

CW: D2MY, G2ADD, 2AMV, 2ATJ, 2CSJ, 2FRG, 2MI, 3AFT, 3ASR/A, 3AUT, 3BHH, 3BMR, 3BND, 3BSM, 3CHR, 3CKR/A, 3DDM, 3DGS, 3DKO, 3DXA, 3EY, 3EFX/P, 3E1W, 3EKZ, 3ERD/P, 3EWD, 3FAB, 3HR, 3PU, 3SB, 4IB, 4MU, 5LK, 6NM, 6UT, 8KV, GC2FMV, G16YM, GM3AWF, 5KF, 5PJ, 6RI, 8MJ, GW2HH, 3EOP, 3FFE, 8NP. (Rx: Battery 0-V-1.)

F. W. Lindley, 22 Panmure Terrace, Dundee.

'PHONE: G2DPZ, 2FLK, 2PU, 3AQM, 3CO, 3COD, 3KP, 3OI, 4GA, 4JH, 4OB, 4OC.

CW: G2AFM, 2FLX, 2KF, 3AAB, 3ARS, 3DRY, 3EGJ, 3EKK, 3EKZ, 3HT, 3IP, 3IV, 3NT, 3UI, 4LA, 4MU, 5UF, 6UJ, 6ZR, 6ZT, 8LG, 8LZ, 8VU, GW2HH. (Rx: 0-V-2. December 18-23.)

W. McBey, 12 Albert Street, Kirkwall, Orkney.

'PHONE: D2MY, G2BAB, 2DPZ, 2LC, 2SC, 3BYV, 4GA, 4JH, 5FN, 5LC, 5RV, 6II, 8JM, GW2FRB, 3CII, 3VL. (Rx: R107.)

D. L. McLean, 9 Cedar Grove, Yeovil, Somerset.

'PHONE: G2ALB, 2BSU, 2IK, 2MM, 2XQ, 3BBG, 3CHW, 3MT, 3YT, 5LP, 5YK, 6GN, 6GU, 6II, 8PX, GC4LI, GW2BG, 2DDX, 3BUT, 3VL, 8SU. (Rx: RCA AR88LF, 1100-1300 G.M.T. 1½ hrs.)

NEW BRITISH RECEIVERS

With the appearance on the home market of three outstanding new British receivers—the Radiovision "Commander", the Denco "DCR-19" and the GEC "BRT-400"—readers will be interested to know that full Test Reports on these receivers (all of communication type) will be appearing in forthcoming issues of our *Short Wave Magazine*. We hope to run abridged reports in these pages if space can be made available.

DX OPERATING MANUAL

We can still supply the *DX Operating Manual*, copies of which have now been circulated to many countries overseas. It tells you all you want to know about DX operating—which, of course, includes DX listening—and is an art production of 36 pp. and seven chapters, profusely illustrated. The cost is but 2s. 8d., post free. Remit to the Circulation Manager, *Short Wave Magazine*, Ltd., 49 Victoria Street, London, S.W.1.

NO SHOP KEEPS ALL YOU WANT—WE KEEP MORE THAN MOST. THAT'S WHY PEOPLE SAY—

"You'll probably get it at
SMITH'S, Edgware Road"

Pay us a visit and see for yourself.

H. L. SMITH & CO. LTD.

287-9 Edgware Road, London, W.2

Near Edgware Road Met. and Bakerloo

'Phone: PAD 5891. Hours: 9-6 (Thurs., 1 o'clock)

MORSE CODE Training



There are Candler Morse Code Courses for

BEGINNERS AND OPERATORS

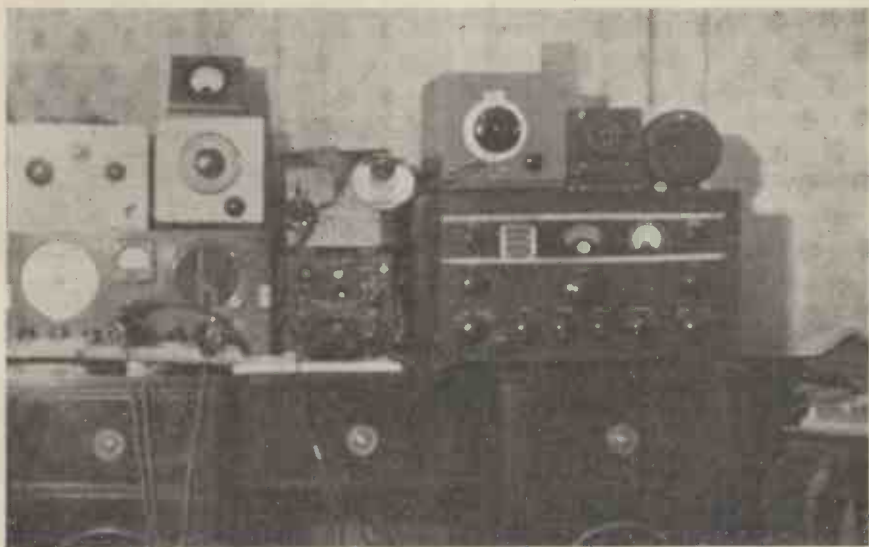
Send for this Free

"BOOK OF FACTS"

It gives full details concerning all Courses.

THE CANDLERSYSTEM CO.

(Dept. S.L.) 121 Kingsway, London, W.C.2.
Candler System Co., Denver, Colorado, U.S.A.



SWL STATIONS

No. 18

SHOWN here is the station operated by D. L. McLean at 9 Cedar Grove, Yeovil, Somerset—a well-known SWL whose name frequently figures in our pages—who has been active since 1936.

The main Rx is an AR88LF, to which an S-meter has been added; above the '88 is a BC-453 "Q5'er" and next to it a VHF converter (RF 6AK5, 9001 mixer, 9002 osc.) for the 27-58 mc bands. The stand-by receiver is a pre-war Hallicrafters Sky Champion (on the left) with a one-valve regenerative preselector for 7 and 14 mc. To the top left of the Sky Champion is a "Class-B One-Valver," from a design published in the early-1937 issues of our *Short Wave Magazine*—which is going back a bit! For frequency measurement D. L. McL. has a Class D wavemeter which can be switched to give frequency checks on either receiver.

Four aerials are in use—two are 33-ft. "VS1AA" type running E-W and NW-SE, both 40 ft. high; a long-wire of 138 ft.

running in "various directions," and the fourth a 58-mc dipole.

Results on VHF have been disappointing, attributed to the low-lying location. DX listening is carried out on all amateur bands, but mainly on 28 mc; the log to mid-December shows 162 countries heard in 37 zones, all on 'phone, with 122C in 35Z verified. Best DX logged has been OZ8A (1 watt, 14 mc); W1CPI and W2HHM on 1.7 mc (pre-war); HK4EB (1st European report on 14 mc); WØHBR (1st European report, 28 mc); W5ZG/Mobile, operating from a car on 28 mc—all these heard on 'phone. No QSL's are visible, though many are held, since they are all kept in a file, card-index fashion.

To his keen SWL activities, D. L. McL. adds the duties of secretary of the Yeovil Amateur Radio Club; readers will agree that he has a very well-equipped station, and that it is very well operated is shown by the results so often reported in these pages.

The DX Operating Manual will help your DX listening

PSE QSL

The operators listed below have informed us that they would like SWL reports on their transmissions, in accordance with the details given. All correct reports will be confirmed by QSL card. To maintain the usefulness of this section please make your reports as comprehensive as possible.

CE3CU *Castilla 3071, Santiago, Chile.* QSL's all reports of speech quality and modulation on 14060, 14350, 28050 and 28200 kc 'phone and CW transmissions, 1400-1500 and 1730-2200 GMT.

CO7RQ *Ramon Quesada, Punta San Juan, Camaguey, Cuba.* QSL's all reports on 14194 and 28108 kc 'phone, operating 1600-2000 GMT.

D2MN *Cpl. Armstrong, Section B1, RAF Wahn, BAFO, B.A.O.R.19.* Signal strength and speech quality of 3-5 and 7 mc 'phone, 1700-2359 GMT.

D5AX *SP 50,828, BPM 507, Z.F.O., Germany.* Modulation of 3-5, 7, 14 and 28 mc 'phone and CW, 1200-1300 GMT, Sundays 0800-2000 GMT.

E15X *115a N. King Street, Dublin, Eire.* 7085 kc 'phone, 1300-1330 GMT, and weekends. Report stations calling E15X that are not answered.

FA3PB *29 rue Mogador, Alger, Algeria.* 'Phone in bands 14200-14300 and 28400-28600 kc.

G2AOL *49 Sidney Gardens, Oiford, Kent.* QSL's all reports over 50 miles on 58834 kc CW and also VFO-controlled 1-7 mc CW.

G2BZ *83 Fecitt Brow, Blackburn, Lancs.* 1872 and 1900 kc 'phone, Sunday 1000-1500 GMT, Tuesday, Wednesday, Thursday 1930-2230 GMT.

G3BXF/A *Hon. Sec., Radio Section, Recreation Club, G3BXF B.T.H. Works, Rugby, Warks.* 3-5, 7 and 14 mc CW, Thursdays 2000-2230 GMT.

G3CIM *35 Melford Avenue, Barking, Essex.* 1900 kc VFO 'phone, after 2200 GMT.

GM3CVZ *16 Munro Street, Kirkcaldy, Fife, Scotland.* 7010, 7032, 14020, 14064, 28040 and 28128 kc CW, also VFO, 1700-2359 GMT and weekends.

G3DSR *8 Oxford Street, Spodnon, Derby.* 1750 and 3528 kc CW at weekends; 14010 kc CW at 1900-2200 GMT Mondays and Thursdays.

G3EAU *22 Cabot Street, Bedminster, Bristol.* Reports over 50 miles on 7046 kc 5 watts CW.

G3ECU *Broom Hill, Landford, Salisbury, Wilts.* 1-7, 3-5, 7 mc CW, 1900-2100 GMT and weekends.

G3EKN *228 Robin Hood Lane, Hall Green, Birmingham.* 28. QSL's all accurate reports over 1,000 miles on 3520, 7008, 7022, 14016 and 14044 kc CW.

G3HR *Balmoral, Chapel Lane, New Longton, Preston, Lancs.* 1765 and 1781 kc CW, 2000-2200 GMT.

I1ARU *Via O. Rinuccini 32, Firenze, Italy.* Modulation and any frequency-drift of 7 and 14 mc 'phone, 0300-0700 and 1600-2100 GMT.

I1AXJ *Piazza S. Giusto 7, Lucca, Italy.* 7 and 14 mc CW, 2000-2359 GMT.

I1AYX *Box 27, Baveno, Novara, Italy.* 7 and 14 mc CW, 0500-0700, 1200-1400 and 1900-2100 GMT.

JA2BJ *Co. D. 72nd Sig. Sv. Bn., APO. 503, C/o P.M., San Francisco, California, U.S.A.* 14028 kc CW and 28565 kc 'phone, 0500-1100 GMT.

KP6AE *W. J. Christian, Palmyra Island, Terr. of Hawaii.* 14028-14060 kc CW, 0600-0800 GMT. Also requires contact with GM-amateur.

KZ5MD *Box 661, N.A.S., Coco Solo, Canal Zone.* 28504 and 29680 kc 'phone, 0800-1600 GMT.

LU2HH *Observatorio Astronomico, Cordoba, Argentina.* Operating 14011, 14042 and 14073 kc CW, 2200-0300 GMT.

OKILI *Skrivanci kamen 557/II, Liberec, Czechoslovakia.* 'Phone and CW all bands.

OKIQM *Osecka 17, Duchcov, Czechoslovakia.* QSL's all reports, 3500-3600 kc CW, 1900-2359 GMT.

OZ3HG *Gl. Konsevej 42, Aabenraa, Denmark.* Only detailed reports on FM and signal strength of 3-5, 14 and 28 mc 'phone, 1400-1800 GMT.

OZ4PM *Absalonsgade 9, Roenne, Bornholm, Denmark.* 3-5 and 7 mc 'phone and CW, 1800-2000 GMT weekdays, 1200-1700 GMT Sundays.

PAOCF *Alexanderstraat 22, Zwolle, Netherlands.* 14 mc 'phone, after 1700 GMT, and weekends.

PAOKN *Outshoornstr. 87, Tilburg, Netherlands.* Speech quality of 3-5 mc 'phone, operating 1800-2000 and 2230-2359 GMT.

PAONEL *Aug. Fallsseweg 33, Wageningen, Netherlands.* Operating 3-5 and 7 mc 'phone.

PY2RT *Rua Iperoig 238, Sao Paulo, Brazil.* VFO-controlled 14 mc CW and 'phone, 0130-0400 and 2000-2130 GMT.

PY6AJ *Mouraria 30, Salvador, Bahia, Brazil.* 14 and 28 mc CW, 0600-0730 and 2000-2200 GMT.

ST2KR *P.O. Box 253, Khartoum, Sudan.* Reports on 14 and 28 mc 'phone and CW contacts not beamed towards U.K.

TI2KW *P.O. Box 1634, San Jose, Costa Rica.* VFO-controlled 'phone and CW in band 14300-14420 kc, 0030-0530 and 2130-2330 GMT.

VE3BBM *351 Worthington Street, E., Apt. 12, North Bay, Ontario, Canada.* 3-5 and 7 mc CW and 'phone, 1200-1530 GMT, Saturdays 1900-0200 GMT.

VE7AAD *1035 Oliver Street, Victoria, B.C., Canada.* 'Phone and CW, all bands; weekdays 0330-0830 and 1430-1530 GMT, weekends 1430-0830 GMT. Detailed reports over period of time.

VK2MA *2 Jersey Street, Enfield, N.S.W., Australia.* VFO-controlled 7, 14 and 28 mc 'phone and CW, 0800-1400 and 1900-2100 GMT.

VK3NM *61 Narrawang Road, Caulfield, S.E.8, Victoria, Australia.* VFO-controlled 14 and 28 mc 'phone and CW.

VO6AN *Box 8, APO. 677, c/o P.M., New York City, U.S.A.* 28386 kc 'phone, 0800-1330 GMT.

VP9CC *Box 20, Mangrove Bay, Bermuda.* 7, 14 and 28 mc 'phone and CW, daily.

W1MFE *45 Paramount Avenue, Hamden, Connecticut, U.S.A.* Operating 3-5, 7, 14 and 28 mc CW.

W2VC *40 Crescent Road, East Orange, New Jersey, U.S.A.* 7 and 14 mc CW, 1800 GMT onwards.

W3SGR *232 N. Narberth Avenue, Narberth, Pennsylvania, U.S.A.* 7062 and 14124 kc CW, Sundays 0300-0600 GMT.

WSBZR *P.O. Box 411, Minden, Louisiana, U.S.A.* 28 mc 'phone, early mornings and night GMT.

W5NSQ *Qtrs 187-A, Box 5600, Albuquerque, N. Mexico, U.S.A.* 14 mc CW, 0300-0800 GMT.

W6JWZ *1526 West 102nd Street, Los Angeles, California, U.S.A.* 14 mc CW 0200-0700 and 1400-1530 GMT; 14 mc NBFM week-ends 1500-0800 GMT.

W8YHO *1368 Roslyn Avenue, Akron 2, Ohio, U.S.A.* 29699 kc 'phone, week-ends 1300-1700 GMT.

W9AHD *27 East 112th Place, Chicago 28, Illinois, U.S.A.* Comparative reports and details of QSB and modulation of 28 mc 'phone operation.

W9AIU *Box 320A-R.R.1, Granite City, Illinois, U.S.A.* QSL's all reports on 3940 and 14248 kc 'phone, and on 7005 kc CW.

WØDPB *1307 North Jefferson, Mason City, Iowa, U.S.A.* 14250 and 28700 kc 'phone, 1800-1950 GMT. Comparative reports over period of time.

ZB1AM *82 Rue D'Argens, Gzira, Malta.* Reports only on 29180 kc 'phone transmissions.

ZL3DK *37 Norwood Street, Beckenham, Christchurch, New Zealand.* QSL's all overseas reports on 14 mc CW, operating 1700-1900 GMT.

4X4AA *P.O. Box 4150, Tel-Aviv, Israel.* VFO-controlled 14 and 28 mc 'phone, Enclose I.R.C.

Receiving Equipment for the Discriminating Amateur

THE "COMMANDER"

DOUBLE SUPERHET COMMUNICATIONS RECEIVER

★ COMPLETE COVERAGE 1.7-31 mc. ★ ELECTRICAL BANDSPREAD.
£48/10/-. ★ "Q-FIVER" SELECTIVITY ★ £48/10/-.

And a host of other fine features making it Britain's finest Communications Receiver.

THE "HAMBANDER" still leads the field for a low-priced communications receiver at £22/10/-. Complete with Speaker.

Pep up your present receiver with a **RADIOVISION PRESELECTOR**. Will increase strength of signals, improve signal noise ratio, reduces second-channel interference. Price £13/13/-.

Send 2½d. stamp for illustrated Literature

RADIOVISION (LEICESTER) LTD., 58/60 RUTLAND ST., LEICESTER

Phone : 20167

OPPORTUNITIES IN RADIO



Get this **FREE Book!**

"ENGINEERING OPPORTUNITIES" reveals how you can become technically qualified at home for a highly paid key appointment in the vast Radio and Television industry. In 108 pages of intensely interesting matter it includes full details of our up-to-the-minute home-study courses in all branches of **RADIO AND TELEVISION**; A.M. Brit.-I.R.E., A.M.I.E.E., City and Guilds, Special Television, Servicing, Sound-film Projection, Short Wave, High Frequency and General Wireless courses.

We definitely guarantee
"NO PASS—NO FEE"

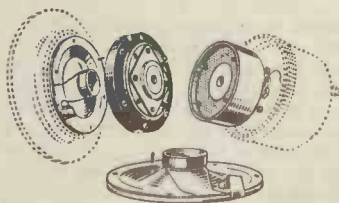
If you're earning less than £10 a week this enlightening book is for you. Write for your copy to-day. It will be sent **FREE** and without obligation.

**BRITISH INSTITUTE OF
ENGINEERING TECHNOLOGY**

926 Shakespeare House,
17-19 Stratford Place, London, W.1

ELECTRADIX RADIOS

MOVING COIL HEADPHONES, P.M. less headbands. Here is a wonderful opportunity to secure highly sensitive headphones with coils energised by the famous ALNI magnets.



These moving coil sound units have a 45 ohm. ½ inch coil. They can also be used as miniature mikes, or as a miniature loudspeaker if matching transformer is used. Size 1½ in. overall, in bakelite case with 3 in. front flange. As new. Price each 12/6, or per pair, 21/-.

BUZZERS. The tiny Townsend high note wave-meter buzzer, plat, contacts, 5/- G.P.O. test buzzer, double contacts for distant signals, 5/- Morse practice buzzer, adjustable note, 2/-.

MORSE KEY on polished base, A.M. type, 2/- Transmitters key on bakelite base 3½ x 1½, insulated arm and large knob, heavy adj. back and front contacts, smooth action, 5/-.

Please include postage for mail orders

ELECTRADIX RADIOS

214, Queenstown Road, London, S.W.6.

Telephone : MACaulay 2159

The VHF End

Survey of the Year—Results and Conditions — VHF Listeners' Club
by A. A. MAWSE

THIS issue of the *Short Wave Listener* sees the completion of the first year of "The VHF End" and, coinciding as it does with a lull in activity, appears to be a suitable occasion for a retrospective survey. We are very glad to know that this column has been instrumental in persuading a number of readers to build receivers for the VHF's, and to experience the thrills of VHF DX for the first time. In at least one instance we awakened sufficient enthusiasm for a reader to apply for his transmitting licence and to start up on five metres only. He is now a keen supporter of G2XC's column in the *Short Wave Magazine*. We refer, of course, to W. S. Hall (Otford, Kent) who as G2AOL is to be congratulated on his excellent performance in the *Magazine* VHF Contest last November. He is rapidly approaching 100 stations worked, we are told, and has 20 counties to his credit.

The Club

Among the other results of the inception of this feature has been the formation of the VHF Listeners' Club. Membership now totals 42. For the benefit of new readers we would say that the object of the Club is to encourage VHF activity generally, and all applicants for membership are required to give a signed statement that they are interested in VHF work and undertake to support all such activity to the best of their ability. No membership fees are called for, and there are no other conditions of membership—although we do appreciate an occasional, or, better still, a regular report from you just to prove you are active and still interested.

An attractive membership certificate is issued to all members and occasional circular letters are sent out with details of QTH's of new members, club activities and so on. There is a club advisory committee to assist us on club matters, consisting of four experienced members, one each from the North, the Midlands, the South-West and London. We are considering appointing a Scottish representative as well, and will do so as soon as there is a slight increase in the GM membership. The arranging of area

meetings is a matter we must leave to members themselves, but we do feel that such gatherings would serve a very useful purpose, in getting members to know each other in the discussion of their problems. We know the committee members will welcome a visit from any of you, but do write first and arrange a convenient time.

Review of Results

Looking back over the past year's events and conditions we find the hopes of 50 mc DX in the spring were unduly optimistic and the remarkable conditions of the autumn of 1947 failed to recur. That autumn had brought us 6-metre signals from all districts of the U.S.A. and other DX parts, but the only reported opening of early 1948 was on March 27, when ZSIT broke through for a few hours.

Early March had, however, produced some excellent tropospheric conditions, March 8 being one of those evenings which comes just once every few months and which is one of the great attractions of the VHF's. Similarly, March 27 brought its thrills when the five-metre stations in Northern France came through in unusually large numbers and well above normal strength. This gave many readers their second country on five metres.

May saw the opening of the EDX season, the first spor-E signals from Europe being reported on May 5. The first really big opening for Europe, however, did not occur until May 25, when signals from F and I were logged over a period of four hours up to midnight. The outstanding day was June 4, when readers

VHF Listeners' Club

Third list of members

T. B. Atkins (Hereford)
D. T. Bradford (Denham)
W. E. Gates (Dewsbury)
J. M. Graham (Glasgow)
R. M. James (Chatham)
W. A. Kane (Ballywalter)
B. & D. Kendall (Potters Bar)
J. McGreevy (Glasgow)
M. Neale (Aylesbury)
T. A. Newton (Bristol)
G. H. Smith (South Woodford)
A. C. Spong (London)
G. A. Steer (Brighton)
M. Taylor (Tooting)
C. Watts (Petersfield)
E. Wicks (Bournemouth)

reported signals from *seven* different countries. There were numerous other EDX periods during June, as well as some good tropospheric conditions (GM3OL putting a good signal into parts of Surrey and Kent on June 13), while a further EDX highlight occurred on June 23, when the SM's broke through at midnight just as we were all about to switch off for the night.

After the first week of July, EDX became comparatively rare, but August, provided one of the greatest thrills of the year when, on the afternoon of August 8, a spell of "Aurora DX" enabled GM and GI signals to be heard in the south of G, all notes being T4. One reader, P. J. Towgood (Bournemouth), on that occasion broke the GDX reception record by logging GM2DAU, the distance to Cupar being 402 miles.

Two Metres

September 1 was the date of the release of the 145 mc band for amateur operation and a useful new field of experiment was open to VHF enthusiasts. Getting receivers to work efficiently, or even at all, has provided many with an occupation during the winter evenings! "Finding the band" has been a game played by many of us, but gradually the number of readers equipped for reception on the 2-metre band is growing and when conditions and activity improve in the warmer months ahead we are sure there are thrills in store for you, and that we shall be receiving long lists of Calls Heard, just as we did for five metres last summer. The autumn months of 1948 showed that the possibilities of 2-metre work are great. Already the Tx men have pushed their record for the band up to 379 miles (G5BY/PAØZQ). Sporadic-E signals are, of course, not likely ever to occur on frequencies as high as 144 mc, the upper limit being about 90 mc. Nor is Aurora DX believed to be

a possibility; but on this latter point we would not be definite, so it may be worth a listening session if you know there is an Aurora manifestation in being.

Readers' reports are scarce this month, due in part, we hope, to the seasonal inactivity on the VHF bands. Activity usually declines in mid-winter, due to the poorer conditions making the bands less attractive, and this year, with the VHF transmitting fraternity divided between two bands, the position has been worse than usual. Several readers, including M. Taylor (Tooting) who has built the G2XC converter, have failed to find signals on the band. M. T. remarks that the converter works well on 5 metres by using suitable coils. We feel sure the failure to hear anything on two metres is due to the very low level of activity. We ourselves have spent many uneventful hours on the band recently.

We would be interested to hear from any readers who are preparing receivers for the other new VHF and UHF bands. Details of the frequencies which were released on January 1 were given in these pages last month. We would advise anyone contemplating building for these frequencies to work in co-operation with a local transmitter as otherwise much time may be wasted searching for signals which just do not exist! These bands are an ideal field of operations for the listener who wants to do something different, so what about a few pioneers?

In Conclusion

If we have not presented much news this month it has been because it has not existed. Please remember this column depends on you! So send along your reports to A. A. Mawse, *Short Wave Listener*, 49 Victoria Street, London, S.W.1, by February 4, for next month's issue—when we hope to have much more to discuss.

Radio G200 announces

for the New Year new premises—so please note this

CHANGE OF ADDRESS TO 55 UNION STREET

which is close to the centre of Maidstone and where most of the bargains previously advertised are on view together with many other equally interesting items.

A. C. HOILE, 55 UNION ST., MAIDSTONE,
KENT

BARNES RAD.-ELEC. CO.,

12 Pipers Row, Wolverhampton, Central

Speak from Den to House or Room to Room, etc., without batteries; three wires and the job's done. Self-operated balanced armature handsets, 10/6 per station (minimum supplied one pair). Telephone Selectors, 25 way on each, three banks and continuous running contacts, 8/6, bargain. 10 mfd 450v Block Condensers, 3/-. 32 mfd 650v Electro Block, 9/6. 60 mA chokes, 5/-. Colour lights (three) for railways (with leads), 3/-. Get on mailing list for bargains, 3d. Special R1116 8-valve TESTED Receivers, £11, for speaker. Leaflet 3d. Thousands of components.

Preparing for the R.A.E.

Advice to Aspirants

by I. A. BATES (GM3BZP)

(Everyone desiring an amateur transmitting licence must show proofs of proficiency in the fundamental techniques of Amateur Radio. For most, this means passing the Radio Amateurs' Examination, conducted at centres all over the country by the City and Guilds of London Institute. The notes below will be found helpful in preparing for the forthcoming examination in May, 1949. —Ed.)

IN May next, the City and Guilds of London Institute will once more hold their Radio Amateurs' Examination, success in which is indispensable to the would-be amateur transmitter who cannot claim exemption. Reports on previous examinations suggest that much preparation is entirely mis-directed; it is for this reason that the notes following are offered. Later, perhaps, something may be said about examination technique, which is far more important than is generally realized; meanwhile, preparation is the immediate job in hand.

When preparing for this particular examination, the purpose for which it is held should always be in the forefront of the mind; and that purpose is simply to make sure that you are not going to be a nuisance to yourself or others—particularly others.

The licensing authorities have laid down clear-cut and easily understood regulations on the subject; and the examiner is prepared to make you a gift of 20 marks for knowing these regulations and how to observe them. The question on this point is always the highest marked on the paper; so learn the regulations thoroughly, and learn the means of carrying them out. You will then start with a bonus of 20 per cent.

Now let us examine the other questions in previous papers; these have been reprinted in the *Short Wave Magazine* and the *Short Wave Listener* (see October, 1948, issue), or can be obtained from the City and Guilds of London Institute.

It is obviously essential for the intending operator of a transmitting station to understand something about transmitters; and in fact this part of the paper was worth 20 marks in May, 1946, 10 in November, 1946, and no less than 40 in May, 1947. All you have to know in this direction is

the simple theory of how a valve works as an oscillator, amplifier, modulator or frequency multiplier; typical circuit diagrams; and, of course, how to avoid being a nuisance.

Notice how the questions often contrive to include this last point. Question 4 in the first paper says "Why are quartz crystals frequently used in radio transmitters?" This is just another way of asking "Do you understand the importance of frequency stability?" The point is again emphasized in Question 5 of the May, 1947, paper.

Practise drawing complete circuit diagrams and describing the action of, say, 28 mc phone transmitters, stating how frequency stability is achieved and interference avoided, and you have little to fear from this part of the paper.

Not So Important Subjects

Aerials, too, must receive attention, but in general this subject does not account for a great many marks, and the same also applies to receivers. I do not mean that the subjects should be ignored, or nearly so; but a great secret of successful preparation for any examination is to seize on the really important points and give them particular attention. In the nature of the R.A.E., aerials and receivers are obviously not so important as other parts of the syllabus, and a more general treatment will suffice; remember, though, that *aerial coupling* has a lot to do with the radiation of harmonics and key clicks, and that superhets can squirt round nasty whistles. Nuisance value again!

The theory questions may seem rather arbitrary; but without a knowledge of Ohm's Law you can hardly be trusted to observe power restrictions—after all, milliammeters have to be shunted sometimes. Again, unless you know the theory underlying the frequency and Q-value of resonant circuits, how are you going to be sure of accuracy and stability of frequency? You see how almost all the questions work back to the same thing—*will you be able to behave yourself when you go on the air?*

I hope you will; but unless you pass the R.A.E. you won't be on the air at all. I have passed ten examinations of the Institute on my way to Final Certificates and I can assure you that, given honest preparation, you need never fail in any of the City and Guilds examinations.

Monthly Comment by R. H. GREENLAND, B.Sc.

DX broadcast

This month we have to announce a special broadcast by the Schweizerische Rundspruch - Gesellschaft (Swiss Broadcasting Company) to be given on February 10, and subsequent days. The broadcast to the United Kingdom is to be made in the regular Thursday evening session as part of the feature: "We Recorded It for You," from 2000 to 2015. The transmitters to be used are HE13, 7210 kc and HEU5, 11815 kc. Included in the programme is a logging contest for which there will be a small prize which will be awarded to the writer of the neatest correct log. All reports will be acknowledged, but the Swiss authorities request that a 6d. International Reply Coupon be sent with each letter. Other features of the programme will be an interview with a DX'er, greetings from the Swiss Broadcasting Company, and some Swiss music. All reports for this special broadcast should be sent to: The Swiss Broadcasting Service, Shortwave Division, Neuengasse 30, Bern, Switzerland. For listeners in other parts of the world there will be various re-broadcasts of this programme, so that everyone will be eligible to compete for the prize. The complete list of transmissions carrying this DX feature appears herewith.

WORLD WIDE RECEPTION OF SHORT WAVE PROGRAMMES

We have recently had from Cyprus a letter giving details of No. 4 Forces Broadcasting Station, Lakatamia. R. N. Joyce, who is in charge of the "Reports Received" programme broadcast regularly on Saturdays from 2200 to 2400, has helped us to clear up some points concerning certain of these Forces Broadcasting stations. (Incidentally, we were pleased to have confirmation over the air of our own report to this station, on 7220 kc at 2300 on December 18.)

The transmitter is a Hallcrafters BC-610, output 400 watts only, and was formerly in use at Haifa, Palestine. The old Jerusalem transmitter on 7220 kc, with a power of 7½ kilowatts, has been moved to Malta but is not yet operating. In Cyprus they also transmit on medium waves on 1420 kc, using a Rediffusion G-36 and

an output of 1 kilowatt. Signals have been picked up by the BBC in London. The regular daily transmissions, both over medium and short waves, are: Weekdays 0430-0630; 0930-2100; Sundays: 0430-2100.

R. N. J. mentions that he has received reports chiefly from the South of England and North Wales. As he is a native of Whitley Bay, near Newcastle upon Tyne, he would greatly appreciate some reports from the North-East; so what about it, you "Geordies"?

AUSTRALASIA

Radio Australia continues to put over the most consistent of all DX signals. J. B. Harwood (Blackpool) heard VLB3, 11760 kc, with its regular Sunday DX session from 1400 to 1415 on December 5.

10 Feb.	Thurs.	To: United Kingdom	2000-2015	HE13 7210 kc HEU5 11815 kc
10 Feb.	Thurs.	To: South Africa	2100-2115	HER6 15305 kc
10 Feb.	Thurs.	To: North America	2300-2315	HEU5 11815 kc
11 Feb.	Friday	To: North America	0315-0330	HER3 6165 kc HEU5 11815 kc HER4 9535 kc
11 Feb.	Friday	To: Far East	1245-1300	HER7 17784 kc
12 Feb.	Sat.	To: Australasia	0730-0745	HER5 11865 kc HE15 11715 kc HER6 15305 kc
12 Feb.	Sat.	To: Far East	0900-0915	HER5 11865 kc HE15 11715 kc HER6 15305 kc

All times given in this article are GMT except where stated

The next day he logged the evening broadcast to the United Kingdom, given at 2000 over VLB2, 9630 kc. G. Mould (Trinidad) says that Radio Australia on its evening beam to the United Kingdom is as good there as it is at home; he suggests this is what is to be expected if we consult our Great Circle map! The writer heard the elusive BLR2, Lyndhurst, 6150 kc, when it closed with the "pips" time signal and God Save The King at 1400 on December 11. On December 31, at this hour over VLG3, 11710 kc, we heard the twelve booming strokes from the Melbourne Post Office clock, and one minute later the announcer said: "The time in Eastern Australia is one minute past midnight on the morning of the first of January, 1949."

Radio New Zealand continues to claim attention. On December 11, ZL3, 11780 kc, was logged with the call of the kiwi at 0658. At 0730 came the announcement: "The time in Wellington is 7.30 p.m." The same station has recently been logged in the evenings around 1900; on December 13, music was being broadcast at this time, and at 1917, after station directions, there was a weather forecast for New Zealand including Chatham Island, that part of the Dominion which lies just to the west of the International Date Line.

At 1930 the time was given as "half-past seven (a.m.)."

AFRICA

Signals from the Gold Coast over ZOY, 4915 kc, have been unusually consistent of late. December 4 was an excellent example.

From 1730 to 1745 there was a session of recorded dance music, followed by a weather forecast, including "a depression over North-East Togoland," and the Gold Coast News. Then, at 1759, after a final slow waltz, came the

directions: "This is Accra calling on 61.04 metres," and "Accra, Gold Coast is now closing down; Goodnight Everybody." The National Anthem brought the proceedings to a close. On another occasion, at 1730, there was a talk on Agricultural Developments in the Gold Coast Colony in which we learnt that during the next eight years the Colonial Development Corporation plans to sow there 8,000 acres of groundnuts and millet alternately.

We are indebted to D. D. Michie, of the Broadcasting Department, P.O. Box 250, Accra, from whom we have just received a verification card and a short description of this station. The transmitter at Accra is only a part of the broadcasting service in the Gold Coast Colony. There is, in addition, a comparatively large rediffusion service which covers most of the towns in the Gold Coast.

The actual broadcasting station ZOY is situated some seven miles inland and is housed in a modern building. In addition to the two transmitter halls and power rooms, the building contains two talks studios and a large music studio, and there are the usual administration offices. The control room, with an observation window overlooking the music studio, contains two Dramatic Control Board positions which have been modified from the standard Marconi No. 6a studio control desk. The boards provide a dual programme service controlled by keys and variable attenuators; in addition, the boards house the microphone amplifiers and the usual cueing and monitoring equipment. A separate engineering control position is installed in the vicinity of the transmitters providing direct control of the line amplifiers used to feed the transmitter modulators. This board contains, also, VTVM's

on each input circuit and RF monitors on both transmitters. The latter are: (1) A Marconi SWB 8 with high power modulator—DC filaments on all stages and 1.5 kilowatts to the final; (2) A Marconi SWB 11 with high power modulator and 5 kilowatts to the final. The aerial is a half-wave length, delta fed and non-resonant feeder; it is 105 ft. high and is directed north-west from Accra. *Sweden Calling DX'ers* Christmas Day bulletin informed us that Accra was also testing on 15435 kc from 0900 to 0930.

In Lusaka, Northern Rhodesia, ZQP has changed its frequency to 9715 kc. It opens up at 1500 with a News Summary and closes down at 1802 with God Save The King after a local weather forecast.

Johannesburg III, 4895 kc, was logged on December 12, closing at 2105 after station directions in English and its two National Anthems. Radio Mozambique, Lourenco Marques, has been well heard in the same band over CR7BU 4932 kc; on December 10 at 1740 it was giving advice to obese people on how to get slim! (An advertising programme, of course.) CR7BE in the 31-metre band, has recently moved to 9705 kc.

Station OTC2, 9767 kc, has been well received here of late during its regular weekly DX session each Wednesday at 1940. It opens with the words: "This is the Belgian National Broadcasting Service, Leopoldville, Belgian Congo—Station OTC2 (Oboe-Thomas-Cat-No. 2)—the International Goodwill Station of the World—operating on 30.71 metres, 9767 kc. Good Evening, DX'ers; whenever you hear a new station, write to the Goodwill Station on the Congo and tell us all about it!" The English broadcast can be heard nightly until 2030, and there is an additional English session to the United States at 0200.

On December 20 at 1820 an excellent signal was received from OQ2RC, Leopoldville, 9210 kc. This is a regular daily half-hour broadcast of native dance music commencing at 1800, and at 1830 it closes down to the strains of La Brabanconne.

E. Strangeway (Scagglethorpe, Yorks.) logged No. 7 Forces Broadcasting Station, Benghazi, on November 28, between 2040 and 2100 with Community Hymn Singing and a short Epilogue on an estimated frequency of 4800 kc; and Radio International, Tangier, with dance music and announcements in French, was found on a new frequency of 6110 kc at 1510 on December 11.

ASIA

On December 19 at 2100, a station announcing in Japanese was heard in the 60-metre band. After a time signal of three short "pips" and one long, station directions were given by a female and these were followed by a man reading the News in Japanese; at 2130, there was an English lesson for Japanese listeners. The frequency was 4910 kc, this being the channel used by JKF2, Tokio, using a power of 5 kW. Some eight days earlier, XUPA in Tai-Pei, Formosa, the station of the Taiwan Broadcasting Service, was logged with the news in Mandarin at 1520 on a frequency of 6017 kc.

Radio Dalat in French Indo-China, on 6180 kc, is now using reduced power of 240 watts temporarily; the schedule is 1330-1430, 2300-0100. The Viet Nam station on 11974 kc, broadcasts 1130-1300 daily; reports to this one will not reach their destination if sent direct. It is understood, however, that they can be sent *via* the Editor of the *Bangkok Post* in Bangkok, Siam.

Radio Malaya with its Red and Blue networks can still be



One of the Radio New Zealand transmitters, situated at Titahi Bay, Wellington, N.Z.

heard in this country. On December 4, it was logged on 4825 kc, with dance music at 1545, followed at 1600 by a time announcement—"11.30 p.m."—a last News Summary and the National Anthem. The Blue Network schedule is: 0930-1030 (Chinese), 1040-1530 (continues until 1600 on Saturdays) (English), with the following frequencies: 4825 kc and 4780 kc. The Red Network operates as follows: 0930-1130 (Tamil), 1130-1330 (Malay), 1330-1530 (Chinese), and the frequencies are: 7200 kc, 6135 kc, and 4985 kc. The Kuala Lumpur station of Radio Malaya uses a frequency of 6025 kc.

The Rangoon station on 6035 kc, has again been heard at good strength. On December 4, at 1515, came the clear direction: "This is the Burma Broadcasting Service" and the National Hymn of the Burmese Republic brought the transmission to a close at 1516. On December 11, at 1500, the time was given as: "9.30 p.m. Burma Standard Time," and the News in English followed. Radio

Ceylon, broadcasting from its SEAC studios the special United Kingdom Sunday session on 15120 kc on December 19, closed at 1830 with a request for reports but added the rider: "Replies may be delayed owing to extreme shortage of staff."

VUB2, Bombay, 4880 kc, was logged as late as 1738 on December 11 with a description of the day's play (in English) in the India v. West Indies cricket Test Match. Both VUB2 on 7240 kc, and VUM2, Madras on 7260 kc were logged at good strength with the news in English at 0240 on December 13, and VUD11, Delhi, was heard on 11760 kc at 1900 the same day, preparatory to its daily English broadcast at this time. Nearer home, ZNR, Radio Aden, 6765 kc, announcing only in Arabic, was particularly good with the playing of Schubert's Unfinished Symphony (both parts) at 1935, followed a little later by Handel's Largo on December 6.

J. B. Harwood logged No. 4 Forces Broadcasting Station,

Cyprus on 7220 kc from 2315 until midnight on November 20. This was one of its special Saturday night test transmissions. The writer logged the same station at 0630 on December 4, when this announcement was made: "This is Your Forces Broadcasting Station, Cyprus: the time is half-past eight. We are now signing off until half-past eleven. Good Morning to you all."

Finally in Asia, J. B. Harwood logged TAP, Ankara, Turkey, 9465 kc, between 2300 and 2315 with a programme in English on November 30. This was stated to be a fortnightly transmission to the U.S.A.

SOUTH AMERICA

J. B. Harwood has logged ZYN7, Fortaleza, Ceara Province, Brazil, 15165 kc, between 1915 and 2000; the call in French was: "Zed-Eegrec-Enn-Sept," thus confirming that the first letter is Z (pronounced Zee by the English announcer). At 2021 on December 6, ZYN7 was transmitting the Brazilian National programme of dance music. J. B. H., on the same day, 2300-2330, heard ZYK3, Pernambuco, 9565 kc, with a broadcast of Brazilian music with announcements in Portuguese and English, described as a programme sponsored by a firm of sugar plantation owners and presented by the *Radio Journal do Comercio*, Pernambuco, Brazil. ZYC8, Radio Tamoio, Rio de Janeiro, is audible on its old frequency of 15370 kc up to 1945; at 2015 it reverts to 9610 kc.

LRX, Radio El Mundo, Buenos Aires, 15290 kc, was logged at 2010 on December 6 with a broadcast of typical Spanish variety. The call at 2015 mentioned both LRX (Ellay-Erray-Ekis) and LRU (Ellay-Erray-Oo). On December 18, 1700-1900, a broadcast was heard on 17890

kc from HCJB. This was a test transmission; it is given on Tuesdays, Wednesdays, Thursdays, Fridays and Saturdays "from 12 noon to 2 p.m. Quito time." The programme is made in Spanish, with the following direction: "Hatchay-Say-Hohtabay," but listeners are favoured with this direction in English at the close: "Your station is HCJB, The Voice of the Andes, broadcasting from Quito, the Republic of Ecuador, South America." A time-signal of three long and one short pips concluded the transmission at 1900.

It is reported by Radio Italiana, Rome, operating in English every second Sunday at 1500 on 11810 kc and 9630 kc, that short-wave stations in Colombia have ceased operations as the result of an order by the Government of that Republic which has banned private owners from continuing to operate. We have since heard Colombian amateurs in the 28 mc band, but we would welcome any further news in respect of short-wave broadcasting stations in Colombia.

CENTRAL AMERICA

G. Mould mentions that for all-day reception in Trinidad the best station is the very powerful and well modulated "La Voz del Yuna" on 9735 kc. It opens at 1200 with the National Anthem of the Dominican Republic and announcement of the calls HI2T, HI3T and HI4T on 9735 kc, 1045 kc and 5970 kc respectively; during the later hours of the day only the slogan: "La Voz del Yuna" is used.

G. M. tells us that the elusive HI8Z, which is constantly changing its frequency, was logged at 0045 recently on 5025 kc. He mentions, too, a new Dominican Republic station in the 60-metre band using the slogans: "La Voz

del Tropico" and "Radio Caribe."

HI2L, Ciudad Trujillo, on 9520 kc, which operates as late as 0500 or 0600, uses the slogan: "La Voz del Tropico"; it is apparent that this new station is therefore operating on more than one channel.

E. Strangeway heard VP4RD, Radio Trinidad, 9625 kc, with a weak signal at the unusual hour of 1020 on November 28 (Sunday).

There was a clear direction at 1030: "This is Radio Trinidad" and the time: "6.30 a.m." A local News at 1045 was followed by a relay of the BBC News from London at 1100. HOLA, Colon, Republic of Panama, 9505 kc, may be logged from 2200 until it closes down at 0400; this one verifies with a card describing it as: "Radio Atlantico, at the Crossroads of the World."

We wonder how many of our readers have recently picked up point-to-point transmissions from the island of Barbados. At 2210 on November 30, the following were all logged: VPO11, 11475 kc; VPO15, 5040 kc; and VPO16, 5725 kc (S9). These transmitters are in operation for the benefit of the Caribbean Press Association, and on December 10 VPO16 was logged just before the conclusion of a News bulletin embracing the entire British West Indies at 2222.

NORTH AMERICA

CKLO, Sackville, Canada, 9630 kc, was an excellent signal at 2245 on December 10, during the broadcast of a talk on recent steps taken to ensure a constant supply of electrical power in British Columbia. Actual recordings were given of the work in progress, excavators in motion and the noise of the 300 r.p.m. water wheels in the cathedral-like power house at Stephen Lake near Vancouver.

TABULATED SCHEDULES

I. Radio Ceylon. S.E.A.C. Studios in Colombo.

Frequencies : 17730 kc, 15120 kc, 9520 kc, 6075 kc, 3390 kc.

- (a) Daily Schedule, including Typical Programmes
- 0930 Summary of the Day's Broadcast
 - 0935 In Lighter Vein (Music)
 - 1000 Relay of BBC. News Letter
 - 1015 Football Results.
 - 1030 R.A.M.C. (Colombo) programme.
 - 1100 World and Home News.
 - 1115 Nights at the Opera (BBC Transcription).
 - 1200 Three-Four Time. (Except 17730 kc).
Programme for Forces in Malaya (17730 kc only).
 - 1215 Yours for the Asking. (All channels).
 - 1230 Home and World News (from BBC).
 - 1315 A Nightingale Sings.
 - 1330 Souvenirs of the British Cinema.
 - 1400 Radio News Reel.
 - 1415 Sunday Symphony.
 - 1530 All Serene (Closing Music).
 - 1600 World News (from BBC).
 - 1615 Programme Summary for next day.
 - 1620 Radio Ceylon leaves the air.

(b) Sunday Broadcast to the United Kingdom.

- Frequencies : 17770 kc, 15120 kc, 9520 kc, 6075 kc, 3390 kc.
- 1630 Opening March and Announcements.
 - 1633 Roundabout.
 - 1700 Request Items. (Classical Melodies.)
 - 1745 Fiesta. (Latin-American Music.)
 - 1800 Swing Session.
 - 1830 Close Down.

Another Canadian, CKRZ, is now operating on 6060 kc from 2215 to 2315. CBLX, Montreal, 15090 kc, was logged with dance music followed by announcements in French at 2238 on December 10.

EUROPE

J. B. Harwood reports that Monte Carlo is making test transmissions on 9460 kc from 1400 to 1500. According to the Swedish DX'ers, the call-sign of the American station in Athens which broadcasts each Friday from 1830 to 1930 on 8000 kc is JJOY and *not* KJOY.

The new 85 kW transmitter of the Finnish Broadcasting Company working from Helsinki on 15190 kc now operates according to the following schedule: 0300-0500, 1200-1215, 1225-1300, 1645-1700 and 2100-2200.

E. Strangeway has a poser for some of our experts! He heard Radio Eireann, Athlone, around 66 metres (4500 kc) (probably a harmonic) between 1730 and 1800 and 2130-2215, and has ascertained that it is not in evidence during the afternoon transmission from medium-wave Radio Eireann. He assumes, therefore, that it is associated with

Radio Eireann's short-wave outlets on 17840 kc and 9595 kc.

Finally, it is announced from Sweden that a new interval signal is in operation at the Stockholm studios. A more cheerful tune replaces the former air in a minor key, and consists of the following musical notes: *doh-me-ray-fah-me-soh-doh*.

STOP PRESS

Sydney, Australia, has two new short wave outlets in VLI2, 6090 kc and VLI3, 9500 kc. It is hoped that these will cover those parts of New South Wales where medium-wave reception is imperfect.

The schedule is: Saturdays 2045-2230 (6090 kc); 2245 Sats. to 0815 Suns. (9500 kc); Sundays: 0830-1330 (6090 kc) Sundays to Fridays inclusive: 2000-2245 (6090 kc) and 2300-0815 (9500 kc); Week-days: 0830-1330 (6090 kc); Saturdays: 0830-1400 (6090 kc).

Our final item is concerned with two frequency changes: the British Far Eastern Broadcasting Service has moved from 11850 kc to 11880 kc, and the Forces Broadcasting Station in Mombasa has reverted to 7220 kc.

Please remember to post your reports and other short wave BC station news to reach us not later than February 15, 1949. The address is: R. H. Greenland, *Short Wave Listener*, 49 Victoria Street, London, S.W.1.

SPECIAL 1.7 mc TEST

During the period February 6-12, stations G2DRT, G2FJR, G2HOP, G3ANM, G3ARD and G3QS will be operating from 2100 GMT each evening in the area 1880-1924 kc. They particularly ask for SWL reports from distances over 50 miles from Spalding, Lincs. Reports should if possible cover the week's working and be sent to G2FJR, 76 Bridge Road, Sutton Bridge, Spalding, Lincs., or through our QSL Bureau. All reports will be QSL'd. This is a special Top Band test, for which SWL co-operation will be greatly appreciated.

NEW GERMAN-TERRITORY CALLS

With effect from January 1, licensed nationals of the occupying power in the British, American and French Zones of Germany have been using DL2, DL4 and DL5 respectively as the Zone prefix, instead of the old D2, D4 and D5. When (and if) the German authorities decide to license their own nationals the prefix will be from the series DL1, DL3, DL6-DLØ. The DA's and DK's still to be heard in such numbers on all bands are unlicensed German nationals (in other words, pirates), who are now in conflict with their own authorities, the German Posts and Telegraphs Department.

SHORT WAVE BROADCAST STATIONS

Revision 87-46-129'6 and 11-49-19'68 Metres

Giving Frequency, Wavelength, Callsign and Location

These lists appear each month, covering the 11-128 metre section of the wave band within which all the short wave broadcasting services of the world operate. For economy of space, this band is dealt with in five sections, a list of active stations in one of these sections being given in full every month. Such revision is necessary due to constant changes of frequency, callsign and operating schedules. All stations appearing in our lists are normally receivable in this country and are under regular observation.

Fre- quency	Wave- Length	Callsign	Location	Fre- quency	Wave- Length	Callsign	Location
3430	87-46	YV4RK	Maracay.	17800	16-85	KRHO	Honolulu.
3420	87-72	YV2RC	Merida.			OIX5	Helsingfors.
3400	88-24	YV5RW	Caracas.	17790	16-86	GSQ	Davenport.
			Umtali, S.R.	17784	16-87	HER7	Schwarzenburg.
3395	88-37	SEAC	Colombo.	17780	16-87	WNBI	New York.
3370	89-02	YVIRT	Maracaibo.	17775	16-88	PHI	Hilversum.
3365	89-18	ZEA	Salisbury, S.R.	17770	16-88	SEAC	Colombo.
3335	89-96		Hyderabad.				Moscow.
3330	90-09	YV6RK	El Tigre.	17765	16-89	XGRZ	Nanking.
3310	90-63	YV1RO	Trujillo.				Paris.
3280	91-46	WVTO	Tokio, Japan.	17760	16-89	KWID	San Francisco
3228	92-95	HDZ	Riobamba, Ecuador.			VUD3	Delhi.
3024	99-20	YDA	Bandoeng, Java.	17755	16-90	WRUW	Boston.
2600	115-40	YDD	Batavia, Java.			WRUX	Boston.
2510	119-50	HLKA	Seoul, Korea.	17750	16-90		Moscow.
2465	121-70	WLKS	Kure, Japan.	17730	16-92	SEAC	Colombo.
2315	129-60	PICI	Willemstad.	17720	16-93	LRA5	Buenos Aires.
				17715	16-93	GRA	Davenport.
26100	11-49	GSK	Davenport.	17700	16-95	GVP	Davenport.
25100	11-72	WRUX	Boston.	17630	17-02	PLD6	Batavia.
21750	13-79	GVT	Davenport.	17445	17-20	HVJ	Vatican City.
21730	13-79	WNRX	New York.	16666	18-00	CNR3	Rabat, Morocco.
			Oslo, Norway.	15895	18-87	CR6RL	Luanda, Angola.
21710	13-82	GVS	Davenport.	15825	18-96	WBC	New York.
21690	13-83	WLWL1	Cincinnati.	15614	19-21	FZK9	Dakar, Senegal.
21680	13-84	VLC10	Shepparton.	15596	19-24		Brazzaville.
21675	13-84	GVR	Davenport.	15450	19-42	GRD	Davenport.
21650	13-86	WLWS1	Cincinnati.	15440	19-43		Moscow.
21640	13-86	GRZ	Davenport.	15435	19-44	GWE	Davenport.
21610	13-88	WNRA	New York.			ZOY	Accra, Gold Coast.
21590	13-90	WGEA	Schenectady.	15412	19-47		Moscow.
21570	13-91	WCRC	New York.	15405	19-48	PZC	Paramaribo.
21560	13-91		Moscow.	15385	19-50		Moscow.
21550	13-92	GST	Davenport.	15360	19-53		Moscow.
21540	13-93	VLB5	Melbourne.	15350	19-54	VUD9	Delhi.
21530	13-93	GSJ	Davenport.			WRUL	Boston.
			Moscow.			XGOA	Nanking.
21510	13-95	VUD8	Delhi, India.				Paris.
		VUD10	Delhi.				Luxembourg.
21500	13-95	WOOW	New York.	15345	19-55		Athens.
21480	13-96		Hilversum.	15340	19-56		Moscow.
21470	13-97	GSH	Davenport.	15330	19-57	WLWR2	Cincinnati.
21460	13-98	KNBA	Delano.			KCBA	Delano.
21450	13-99	XGSW	Nanking, China.			AFRS	Manila, P.I.
			Brussels.			WGE0	Schenectady.
21002	14-28		Brazzaville.	15325	19-58	OQ2RC	Leopoldville.
19850	15-11	WBE	New York.	15320	19-58	OZH2	Copenhagen.
19345	15-51	PLF2	Batavia.			CKCS	Sackville, Canada.
18600	16-18	PLA	Batavia.			VLA5	Shepparton.
18950	16-19	EPI	Teheran, Iran.			VLC4	Shepparton.
18160	16-53	WNRI	New York.				Moscow.
18135	16-54	PMC	Batavia.	15310	19-60	GSP	Davenport.
17890	16-77	HCJB	Quito, Ecuador.				Moscow.
17880	16-78	WGEX	Schenectady.	15305	19-60	HER6	Schwarzenburg.
		KGEX	San Francisco.	15300	19-61	GWR	Davenport.
			Moscow.				Singapore.
17860	16-80	PRL9	Rio de Janeiro.				Boston.
17850	16-81	KCBF	Delano.	15290	19-62	WRUL	Boston.
			Paris.			WRUA	Boston.
17840	16-82	VL9	Shepparton.			VUD3	Delhi.
		HVJ	Vatican City.			VUD11	Delhi.
			Athlone, Eire.			LRX	Buenos Aires.
			Brussels.	15280	19-63	WNRE	New York.
17838	16-82		Moscow.			ZL4	Wellington, N.Z.
17837	16-82		Brazzaville.				Moscow.
17830	16-83	VUD10	Delhi.	15270	19-65	WCRC	New York.
		WCBX	New York.			WCBN	New York.
		OLR6A	Prague.				Sverdlovsk, USSR.
17830	16-83		Moscow.	15260	19-66	GS1	Davenport.
17820	16-84	CKNC	Sackville.	15250	19-67	WLWR1	Cincinnati.
17810	16-84	GSV	Davenport.			KNBX	Dixon, California.
17800	16-85	WLWK	Cincinnati.			KRHO	Honolulu.
		WLWS2	Cincinnati.	15240	19-68	VLG6	Lyndhurst.

PREMIER A.C.

MORRIS AND CO. (RADIO) LTD.,

All Post Orders To: JUBILEE WORKS, 167 LOWER CLAPTON RD.

LONDON, E.S.

(Amherst 4723, 2763, 3111)

NOW OPEN. LARGE NEW PREMISES AT 152 & 153 FLEET STREET (Central 2833)

NOW OPEN. NEW BRANCH AT 207 EDGWARE ROAD, W.2 (Ambassador 4033)

GOVERNMENT SURPLUS MAINS TRANSFORMERS. All for use on 230v 50 cycle mains.

Type		15/-
33	88v 2a. Tapped at 32, 34, 36v	15/-
42	500-0-500v 170mA 4v 4a	35/-
44	10v 5a, 10v 5a, 10v 5a	35/-
51	12v 70a. An Ideal Transformer for sol heading or welding.	60/-
50	350-0-350v 60mA, 6-3v 1a, 6-3v 2-5a	12/6
53	250-0-250v 60mA, 5v 2a, 6-3v 2-3a	15/-
54	275-0-275v 60mA, 5v 2a, 6-3v 2-3a	15/-
55	250-0-250v 100mA, 5v 2a, 6-3v 3-5a	17/6
56	380-0-380v 70mA, 5v 2a, 6-3v 2-3a	17/6
57	300-0-300v 70mA, 4v 2a, 4v 3-5a	17/6

E.M.T. TRANSFORMERS. For 200-230v 50c input half wave. For use with valve or metal rectifier. Used in a voltage doubling circuit, these will give slightly over double the half-wave output. We can supply suitable rectifiers.

E.H.T.1.	Output 800v	17/6
E.H.T.2.	Output 1,000v and 2-0-2v 2a	25/-
E.H.T.3.	Output 2,000v and 2-0-2v 2a	35/-

MINE DETECTOR PANELS. Include three IT4 valves, 12-1 Midget Trans., three ceramic valveholders, 18 condensers and resistors, etc., 20/-. Without valves, 5/-.

WIRE WOUND RESISTORS. 50K 200 watt, 4/-, 20K 200 watt, 4/-, 2K +12K 150 watt, 4/-. 75K 100 watt, 4/-. 350Ω 75 watt 2/-. All vitreous enameled.

TELEVISION MAGNIFYING LENS. Suit any 6", 6", or 7" tube. Increase picture size considerably, 28/6.

P.P. DRIVER TRANS. Split Sec., super quality, 10/-.

METERS

Full Scale	Mark- ings	External Dimen- sions	Mov- ement	Price
1mA	0-100	3 1/2" x 2 1/2"	M/C	15/11
1mA	0-1	2 1/2" x 2 1/2"	M/C	7/6
50mA	0-30	3 1/2" x 2 1/2"	M/C	10/6
50mA	0-50	2 1/2" x 2 1/2"	M/C	8/6
150mA	0-150	2 1/2" x 2 1/2"	M/C	6/-
250mA	0-250	3 1/2" x 2 1/2"	M/C	10/-
2-5 amp.	0-2.5	3 1/2" x 2 1/2"	Thermo.	5/-
15v	0-15	3 1/2" x 2 1/2"	M/I	7/6
20v	0-20	2 1/2" x 2 1/2"	M/C	5/6
40v	0-40	2 1/2" x 2 1/2"	M/C	5/6
5000v	0-5	4 1/2" x 2 1/2"	Elect.	50/-
500uA	0-500	2 1/2" x 2 1/2"	M/C	7/6
500uA	0-500	3 1/2" x 2 1/2"	M/C	19/6

ALUMINIUM CHASSIS

Substantially made of bright Aluminium with four sides.

7" x 3 1/2" x 2 1/2"	4/6
9 1/2" x 4 1/2" x 3"	5/6
10" x 8" x 2 1/2"	7/6
12" x 8" x 2 1/2"	7/6
14" x 8" x 2 1/2"	8/6
16" x 8" x 2 1/2"	8/6
20" x 8" x 2 1/2"	10/6
22" x 10" x 2 1/2"	13/6

2v BAKELITE CASED ACCUMULATORS by Oldham, Dagenite, Ixide, etc., New and unused, unspillable vents. 7" x 4" x 2" each 8/6

BATTERY CHARGER KITS. 6v Ia (tapped at 2v), 22/6. 12v Ia ... 27/6 These incorporate Metal Rectifiers and Transformers. For 200-250v. A.C. mains.

SECTIONAL WHIP AERIALS. Seven sections which plug into each other making an Aerial 14 ft. long... each 3/6

Insulated Bases each 2/6

C.B. TUBES. VCR67, 6" diameter, green screen, 4v Ia. Heater, 2,500v max. H.T. Complete with socket, in maker's original cartons, 35/-.

C.B. TUBES. E.M.I.4/1 Cathode Ray Tubes, 3 1/2" diameter, green screen, short persistence, 4v 1-3v. Heater, 800v H.T. Complete with socket, 17/6 each.

PLESSEY AUTO CHANGER with magnetic pick-up. A.C. 200/250v 8-reccords mixed. 18/8 8

GARRARD ELECTRIC GRAMOPHONE UNIT with magnetic pick-up. A.C. 100/250v 25/19/8

COLLARO ELECTRIC GRAMOPHONE MOTOR with 12" turntable. A.C. 100/250v 25/19/8

CONRAD ELECTRIC GRAMOPHONE MOTOR, 9" turntable, 200/250v A.C. 37/6

All above motors include purchase tax.

NEW 2-VALVE ALL WAVE KIT. 16 to 2,000 metres. Switched Coil Pack ready wired and tested. 2 Mazda HL23 Valves, 1Phone, H.T. and L.T. Batteries, Condensers, resistors, diagrams and steel case, all ready to assemble, 23/10/-, including P.T.

MIDGET SUPERHET RADIO KIT with Illuminated Glass Dial. All parts including Valves, M/C Speaker and Instructions. 15-300 metres and 200-257 metres, 200 to 250v A.C. or A.C./D.C. mains. State which is required. Size, 10" x 6" x 6", 28/5/-, including Purchase Tax.

MIDGET RADIO CABINETS in Brown Mahogany. Can be supplied for the above Midget Kit at 25/-, including P.T.

NEW TRF RECEIVERS

Complete and ready for use in Bakelite Cabinet, 12" x 6" x 6".

3 Valves plus metal rectifier, medium and long wavebands.

A.C. or A.C./D.C. for 200-250v mains. Pre-War Price 27/19/8 including P.T.

ALL-WAVE SUPERHET KIT

A Kit of Parts to build a 6-valve (plus rectifier) receiver, covering 16-50 valves. Medium- and long-wave bands. Valve line-up, 6K8, 6K7, 6Q7, 6J7, two 25A6 in permanent Metal Rectifiers are incorporated for H.T. supply. Output impedance is for 3 and 15 ohms. The latest Wearite Coil Pack incorporating Iron Dust Coils is used, making construction and alignment extremely simple. A pick-up position on the wave-change switch and pick-up terminals is provided. A complete kit including valves, but without speaker or cabinet. Chassis size, 14" x 6". Overall height, 9". Price, 110/18/3, including Purchase Tax. Wired and tested, 121/10/-.

Portable loudspeakers are the GOODMAN'S 10" 6-watt P.M. at 47/6, or for superlative reproduction, the Goodman's 12" P.M. at 23/15/-.

THE FAMOUS R1155 RECEIVER Frequency range, 18-5 mea-75 kcs. in 5

wavelengths. 10 Valves including magic eye, completely enclosed in black metal case, 16" x 9" x 8", 28/8/-.

All tested and in perfect order.

R.1155 POWER SUPPLY UNIT (incorporating output stage). A robust unit contained in a black enamelled case, 10" x 8" x 6", which matches the receiver. There are two models for 100-250v 50 cycle mains. Each supplies an output of 250v at 80 mA, which is ample for the R.1155 with the output stage. With output stage, 70/-.

Power pack only, 50/-.

P.M. LOUDSPEAKERS by famous makers, 5" W.B. or Truevox, 2-3 ohms, 10/-; 5" Celestion, 2-3 ohms, 12/6; 5" Rola, 2-3 ohms, 16/6; 3 1/2" Magnavox, 2-3 ohms, 17/6; 6" Rola, 2-3 ohms, 16/6; 8" Rola, 2-3 ohms, 17/-; 10" Rola, 2-3 ohms, 23/6; 12" Rola, 612, 15 ohms, 85/-.

Output transformers if required for above 2/11 extra (except G12).

Valves at Low Prices—08N7, 6/8; 12BR7, 6/8; 6SH7, 6/8; 6H6, 5/-; 12BN7, 6/8; 12A, 6/-; 12SH7, 7/6; 12SL7, 7/6; 6K7 met, 7/6; 6B7, 5/-; 6B8Q, 5/-; 6J7G, 7/8; 6K7, 7/8; 7H7, 5/-; 7Q7, 7/8; 7N7, 7/8; 7Q7, 6/8; 71A, 7/8; VR90-954, 4/-; CV172, 5/-; CV73-11E3, 10/-; VU11-V1907, 10/-; V870-7475, 7/6; VR57-EK32, 7/6; CV67, 10/-; V178-D1, 2/6; VR39-MU14, 7/8; CV6-DRT90, 5/-; VR65-8P61, 3/6; VU133-V960, 10/-; 3B24, 10/-; VR503-KT33C, 7/8; VR91-EF50, 5/-; VR92-EA50, 5/-; VR136-FF54, 7/6; VT66A-807, 7/8; VR16-V872, 10/-; VR54-EB34, 3/6; VR65-EF36, 6/-; 9D2, 7/8; 8D2, 7/8; 15D2, 7/8; 4D1, 7/8; 11C6, 10/-; 11LN5, 8/6; 11LD5, 7/6; 3D6, 8/8; 9003, 6/8; 68G7, 6/8; 6X5, 7/8; 5U4, 5/-.

SPECIAL OFFER OF ELECTROLYTIC CONDENSERS

16+16mf 500v working, cardboard	4/11
8+8mf 500v working, cardboard	4/11
32+32mf 350v working, all cans.	6/11
32mf 350v working, all cans.	2/6
16mf 350v working, all cans.	2/6
16mf 450v working, cardboard	3/6
8mf 450v working, cardboard	3/-
8mf 500v working, cardboard	2/6
16+8mf 450v working, all cans.	4/11

COLLARO AUTO CHANGERS. Mixer-changer rim-drive. High fidelity, crystal pick-up. Repeat reject mechanism. 14/6 8

COLLARO A.C/D.C. GRAMOPHONE MOTORS, with turntable, but without pick-up or auto stop. 18/5 8

UNIT TYPE A562A. Brand new, contains two ceramic base 807, one 5U4G, one 8F50, one EA50. A large quantity of condensers, chokes, resistors, etc., 30/-.

UNIT TYPE T.28/APT-1. Contains one 832, one 829, two 6C4, two 5R4, one 6X3, three 6A7, one 6V6, one 931A, and a huge variety of other material. 210. Valves available separately.

ROTARY TRANSFORMERS. Used in reverse will charge a 2 to 6v accumulator from 3 amps from D.C. mains. Many other applications, 10/-.

METAL RECTIFIERS. Half-wave, output 230v 30ma, 2/6. Half-wave or voltage doubling 260v 30ma, 3/-.

Half-wave 300v 75ma, 4/-.

550 400v 2ma, 3/6, or six for 16/6. 16v Ia bridge, 2/-.

NEW DECEMBER CATALOGUE NOW READY

SMALL ADVERTISEMENTS

CHARGES: Readers', 2d. per word, minimum charge 3s. Box Nos. 1s. 6d. extra. Trade, 6d. per word, minimum charge 7s. All advertisements must be of radio interest only. Add 25% extra for Bold Face (heavy type) announcements. Copy date for next issue, February 14, addressed Advertisement Manager, *Short Wave Listener*, 49 Victoria Street, London, S.W.1.

CALL BOOK. Complete list of HAMS throughout the world, 10s. plus 9d. postage. *Radio Handbook*, latest edition, 17s. 6d. post paid. Order now, the above are in stock. *CQ*—the Amateur magazine published in the U.S.A., subscribe now, only 20s. for 12 large monthly issues. Dale International Publications, 105 Bolsover Street, London, W.1.

QSL CARDS AND LOG BOOKS, APPROVED G.P.O. SAMPLES FREE. ATKINSON BROS., PRINTERS, ELLAND, YORKS.

G200'S VR65, VR65A (SP41), 6J5GT, VR137 (RL16), 12v 4-pin vibrators, 5s. 6S07, 6AC7, CV81 (RK34), 6L5, 6s. 6d.—A. C. Holle, 55 Union Street, Maidstone, Kent, or 'phone: Loose 83579.

RADIO test gear, Taylormeter 90A, £9, Weston Analyser, E665, £9. U-18 Mtr 'Bandmaster', £10.—Ferranti 0-150 v/Mtr., £4 10s. All 1000 O.P.V. Service sheets, 1,500, Books, manuals, manufacturers' data (irreplaceable) £20; Offers any, Triplet Oscillator, 6-range (Battery), £7. Various Mtrs., stamp.—Redhead Powell Street, Harrogate.

EDDYSTONE 640. Perfect order, still guaranteed. Complete outfit. Speakers, phones, jacks, etc., AC/DC. Best offer over £30. Forced to sell. Make appointment. Tickner, 15 Spencer Road, Twickenham.

EDDYSTONE 640, brand new, instruction manual, £24 or near offer.—Benton, 33 Douglas Road, Sutton Coldfield, Warwickshire.

HAVE YOU

had your **FREE** copy of our 32-page illustrated catalogue? It's about the same size as this magazine, with everything from A to Z, and good illustrations of all the important items.

No surplus gear is listed, all articles mentioned are the current products of the makers concerned, no need to bother what condition they are in, very much different to some of the surplus going about.

We sell a large amount of surplus as well, and issue special lists from time to time, copies of which are sent free to all customers on our regular mailing list. Are **YOU** on it? All orders are **POST FREE**, we're about the only firm that do this, no need to bother with postage, and every order is actually despatched on the same day that we receive it, a real **RETURN OF POST SERVICE**.

Orders large or small are attended to promptly, so if you only want a few resistors, couple of condensers, or a coil, send us your order.

The following are just a few of the things described and illustrated in the catalogue.

Belling-Lea plugs, sockets, fuses, aerial kits, etc.; Denco: the complete range of their well-known products is available; Gardners transformers, chokes, etc., a very wide range stocked; Muirhead National HRO dials; Partridge transformers, chokes and the rest of their range here; Sifam instruments, including full details of their $3\frac{1}{2}$ " moving coil, multi-range test set, at a really amazingly low price; All Taylor instruments are here, and we do the H.P. terms for these; Wearite coils, switches, I.F. transformers, etc. Condensers, valves, and hundreds of other things.

Send a Post Card now, simply write "Catalogue Please", and your name and address, it's quite easy, and we'll have your copy in the post straight away. If you're wanting anything at the moment, just mention it, and we will send full information.

TORBAY ELECTRIC

43 Colley End Park Paignton S. Devon

R1116 In good condition. 8-valve double super-het. 15-2000 metres. Also AC eliminator and 'phones. Carriage paid, £9.—Senior, 3 Lidgett Park Gardens, Leeds 8.

R107 £10 for quick sale. Buyer collects.—Slight, 18 Ewelme Road, Forest Hill, London S.E.23.

R1155 and power pack, £12. Also Eddystone 504 and speaker, £35.—530 Lea Bridge Road, Leyton, London, E.10.

EDDYSTONE 504X, built-in S-Meter, speaker unit and Brown's 'phones, instruction manual, as new. Snip! £35.—Box. No. 007.

HAMBANDER Bargain, with speaker, perfect, as new. FB for SWL. Best over £15.—GJGDV, 58 Wyngate Drive, Leicester.

1155 RECEIVER in excellent order and complete with valves, £6. Buyer collects or arranges transport.—131 Church Lane, Birmingham 20.

RADIOVISION EXPANDER, 10 and 20 metres, bandsread, AC mains. Perfect condition, £10 10s.—Box No. 008.

BRITISH SHORT WAVE LEAGUE (founded 1935) over 20 departments (QSL Bureau, DX Certificates, Technical Translations, etc.) and monthly *Short Wave Review*. For membership details, send S.A.E.—HQ, 145 Uxendon Hill, Wembley Park, Middlesex.

THE RADIO & ELECTRICAL MART

(G3BSW) of 253B Portobello Road, London, W.11
PARK 6026

take pleasure in offering the following:

Type 22 Transmitter Receiver: 2 to 8 Mcs. We have a few left of this 13-valve ex-RAF crystal controlled T/R. The sets are as new—tested—in canvas holdalls with 12v Power Pack—Mike and Headphone Set. Price £15, add £1 for wood case. Returnable.

Type BC605 U.S. Signals Amplifiers. These 15-watt sets are complete except for power supply in handsome duralmin cases—olive green finished and contain 2, 1619 metal valves—input and output tapped transformers—Carbon and Magnetic Mike Jacks. Price 50/-.

12v. Vibrator Power Pack, complete with twin triode P.P. Audio Amplifier—in self-contained case. Bargain Price of 30/-.

R.A.F. Test Set Type 46, New Battery-operated Frequency Meter, 2 to 23.5 Mcs. Made by Marconi Instruments. Can be made all-wave by inclusion of MW and LW coils. 40/- each.

Type 2 Valve Tester. Contains 5", 0 to 100 Micro-Ammeter—a genuine bargain, £3/15/-, about half the price of the meter. Made by Turner Instruments.

Type 3002 UHF Units containing 10 valves—Resistors, Condensers, etc. Price 20/-.

Type BC453 A or B. If you own one of these excellent receivers, we can offer you a medium-waveband coil pack which is easily mounted, complete with circuit diagrams, for 17/6. You will be delighted with the results.

2-Metre Oscillator-Receiver or Signal Generator, using an EC53. Requires only LT 6-3 and HT 120v supply to work immediately, no conversion. Complete with circuit. 16/6 each.

YOU CAN OWN A TELEVISION RECEIVER !

THE extension of television transmissions to the Provinces is fast becoming a reality. The Midlands will soon benefit by this incomparable home entertainment, and closely following the Birmingham transmitter are others to eventually embrace the United Kingdom.

Since the inception of our "W.D. Televisor", the volume of enquiries, orders and repeat orders has steadily increased in number.

Prospective purchasers for miles around have, in many instances, trekked to our premises at Ruislip to view the finished prototype. Saturday afternoon proves the peak period, and even those originally sceptical of our claims concerning the receiver have registered mixed amazement and pleasure at the clarity of reception — an inherent feature of the "W.D. TELEVISOR."

Its conversion from ex-Government equipment is made comparatively simple by our explanatory manual, a profusely illustrated and lucidly expounded data. The modifications involved should therefore present no terrors to a person ordinarily conversant with radio fundamentals.

Featured in the booklet is a detailed price list of necessary items. The three basic units are the Vision Receiver IF Strip, the Radar Indicator and the Merribull Transformer type UT7. These are priced respectively at £2/15/-, £3/15/- and £5/10/-. If the three units are simultaneously purchased a saving of 10s. is effected, as the charge is then progressively reduced to £11/10/-.

Every component thereafter required is specified, and we are in the happy position of being able to supply immediately from stock. At the outset you are advised to acquire the booklet together with the three equipments noted above; the smaller components necessary may already be in your possession.

May we extend to you an invitation to visit us at Ruislip during viewing hours? You will be instantly impressed and convinced.

CONCLUDING

We close with a warning. The demand is going to be exceptionally heavy. Our Despatch staff will be inundated and orders must be treated in strict rotation. We seek your kind co-operation and request that orders be submitted with the minimum of delay.

There is no need to hesitate. Hundreds of satisfied customers will testify to the efficiency of the "W.D. TELEVISOR", probably the finest post-war apparatus marketed.

QUESTIONS and ANSWERS

Q. What, please, is the size of the picture?

A. Approximately 5" x 4", but this can be proportionately enlarged by a magnifying lens which we can supply at £1/19/6, plus 2/6 delivery. (Smaller, cheaper but less powerful lenses available from 29/6.)

Q. What is the colour of the picture?

A. Most people who have seen a demonstration agree that the green and black picture is no real disadvantage, and in any event there is no reason why a black and white picture tube should not be fitted as soon as these are available from the tube manufacturers.

Q. Why isn't a large black and white tube used?

A. Because the only tube really suitable for television extensively used by the Services is the 6" green and black VCR97. Large black and white tubes were utilised in isolated cases, but it would be hardly practical for us to issue data and specify parts that are unobtainable.

Q. Is the set difficult to construct?

A. There is quite an amount of work involved, but it is emphasised that anyone capable of reading a circuit diagram and possessing basic radio knowledge is competent to undertake the task.

Working in the evenings, it will probably take you about a month to construct your first TV Receiver. Subsequent models, however, could be made within a much shorter period. (Constructors can be put in touch with one another with view to mutual help.)

Q. Is the Circuit superhet or straight?

A. Straight receivers are used for both sound and vision reception.

Q. What is the total cost?

A. We are unable to supply Government surplus small components, volume controls, resistors, etc., but even buying these necessities as new manufacturers' stock direct from us the total cost remains in the vicinity of £17/10/-.

SHOULD YOU SO DESIRE, THE GOODS CAN BE SUPPLIED ON FAVOURABLE H.P. TERMS. SEND US 25% OF THE TOTAL PLUS CARRIAGE. THE BALANCE, INCLUDING A NOMINAL INTEREST, CAN BE EXTENDED OVER TWELVE MONTHS!

Q. Will the set operate outside the normal T.V. area?

A. Assuredly. Within limits, it has come to our notice that our set functions where commercial models fail. Please bear in mind, however, that perfect results cannot be expected in these weak areas, and the addition of a pre-amplifier (we can supply details of a suitable circuit, 2/3) is recommended for areas over 50 miles from Alexandra Palace.

Q. Can all the parts be replaced?

A. Yes, indeed, all parts are standard—even the Cathode Ray Tube. We expect always to be able to provide spare parts at reasonable prices.

Q. Can any other questions be answered?

A. OUR 7/6 PUBLICATION CONTAINS 26 POOLSCAP PAGES OF DATA INCLUDING 26 WIRING DIAGRAMS AND PHOTOGRAPHS. IT CONTAINS ALL THE DATA THE AVERAGE CONSTRUCTOR REQUIRES. If, however, you are beset by difficulties, more information will be dispensed provided your questions are written on our Query Form, Mark 2. Under no circumstances can queries of a technical nature be answered either by telephone or to callers. Our booklet "66 Pitfalls of T.V. Constructors," price 2/3, is also recommended.

Q. What are the service numbers of the equipment used?

A. The Mark 2 Televisor uses Indicator type 62—Receiver type 194—The Mains Transformer, which is not ex-Government, carries full manufacturers' guarantee. This transformer is the Merribull type UT7.

Q. Is data available covering other units?

A. Yes. Mark 1 data shows how Indicator type 6 and Receiver type 3131 or 3132, or 3170 or 3084 and Merribull Transformer type UT6 could be used. The price of this data is 7/6 post free. If required, please ensure that Mark 1 data is in fact ordered.

Q. One final question; can this Televisor be modified for use in the Birmingham area?

A. The only difference will be due to the frequency of the Birmingham transmission. As this frequency is higher than that used in the London area, the coils used in both Vision and Sound Receivers will require less turns of wire than at present.

W. D. SALES

4 Electron House,
Windmill Hill,
Ruislip Manor, Mdx.

CLYDESDALE

For Bargains in Ex-Services Electronic Equipment

Ex-R.A.F.

RI155 Receiver

A 10-valve Communication and D.F. Receiver for 1E-3 mcs., 1500-600 kcs., 500-75 kcs., in 5 W.B. Complete, and ready for operation, with valves, etc., circuit and available plugs/skts. in metal case, 16½ × 9 × 9 ins., less power pack. "Airtested" before despatch.

Clydesdale's price only **£12.12.0** each Carriage paid

Combined Power/Output Pack, for RI155

Supplying H.T. and L.T. to operate receiver, plus output stage, and 8 L.S. in metal case, 14 14 7 ins. Available for 200-250 volts, A.C. or 6 or 12 volts D.C.

Price for RI155 and this unit **£18.10.0** Carriage paid
Ready to operate

Ex-R.N. DC to AC Converter

High Quality Naval unit for 24 volts D.C. input, the A.C. output being variable between 182-302 volts, A.C., at 75 watts. Complete with controls, voltmeter, etc., and housed in heavy diecast case, finish grey with high insulation front panel. Size 18 × 12 × 11 ins.

Clydesdale's price only **£6.19.6** each Carriage paid

Receiver Unit Type 78

A superhet Receiver for 26 volts, frequencies 2.4-5.9 mcs., 5.8-13.0 mcs., with 5,6-3v valves, EGH35, EF39, EF50, EA50, 6J5, desynn trimmer control 12v, 100 kcs. Xtal, 5.M. Drive, etc., less power pack, in metal case, 10 × 8½ × 6½ ins. Good condition.

Clydesdale's price only **42/6** each Carriage paid
in transit box

Stainless Steel Aerial Wire

Made by Temco.

7/015 in reels, approx. 1,680 feet each. Price on application.

New, Ex-R.A.F.

Battery Amplifier A1368

A 2-stage, 2-valve amplifier for inter-com. and Xmtr. mod., pre-amp., with valves, VR35 (QP22B), VR21 (PM 2HL) transformers, etc., etc. Complete (less batteries) in black metal case, 7 × 4½ × 4½ ins.

Clydesdale's price only **11/6** each Carriage paid

Brand New, Ex-R.A.F.

Battery Amplifier A1219

A 2-valve, 2-stage relay controlled pre-amplifier, with VR35 (QP22B), VR21 (PM2HL) transformers, etc. Complete (less batteries), in black metal case, 7 4½ × 4½ ins.

Clydesdale's price only **12/6** each Post paid

Brand New, in maker's carton.

Ex-R.A.F. Electro-Magnetic Microphone (flying-helmet type)

For Amplifiers A1134, A1368, A1219, etc., imp. 50 ohms approx., with short lead. Ask for £16.S.W.L.

Clydesdale's price only **5/6** each Post paid

or with transformer 6/6

Ex-R.A.F. I.F./A.F. Amplifier Unit RI355

5-stages of I.F. amplification, 8 valves, etc.

A first-class receiver by plugging-in R.F. units 24, 25, 26 or 27 (not supplied), in metal case, 18 × 9 × 8 ins. Used.

Clydesdale's price only **30/-** each Carriage paid

Ex-R.A.F. Vernier Slow Motion Drive

A Muirhead Unit with an illuminated escutcheon graduated in degrees, 0-180°. Ratio 38 : 1. Dia. 3". As used in R.F. Units 26 and 27, fits standard spindle. A removable lamp holder plugs into the top of the drive unit and provides a marked logging point.

Clydesdale's price only **9/6** each Post paid

in maker's carton

I.F. Transformer

1.35 mcs., slug tuned, fully screened and decoupled. Size, 3½ × 1½ × 1½ ins. Ask for E514.

At **2/6** each, or **4/-** per pair. Post paid
in maker's carton

I.F. Transformer

1.5 mcs., slug tuned, fully screened and decoupled. Size, 3½ × 1½ × 1½ ins. Ask for E515.

At **2/6** each, or **4/-** per pair. Post paid

Send now for New Illustrated Lists. Please Print Name and Address

CLYDESDALE SUPPLY CO LTD

2 BRIDGE STREET
GLASGOW - G.5

'Phone: SOUTH 2706/9

VISIT OUR BRANCHES IN ENGLAND, SCOTLAND AND NORTHERN IRELAND