

# SHORT WAVE NEWS

Vol. 1.  
No. 3.  
MARCH, 1946.

In this Issue :

LEARNING THE CODE.

BROADCAST NEWS  
OF THE MONTH.

ON THE HAM BANDS.  
AROUND THE SHACKS.

"RESONANT LINES."

BROADCAST STATION  
LIST.

HAM QUIZ, etc., etc.

AND

A.C. COMMUNICATIONS  
RECEIVER.

100 WATTS ON TEN.



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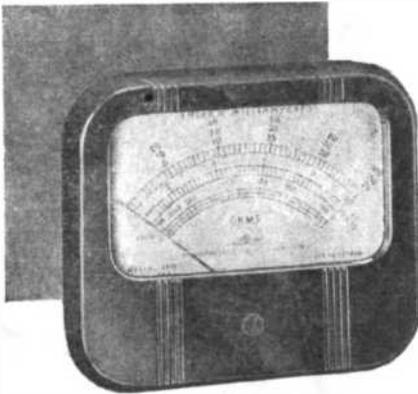
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# SHORT WAVE NEWS

Vol. I. No. 3.

Annual Subscription, 16/-.

March, 1946.

Editor : ARTHUR C. GEE, G2UK.

Asst. Editor : W. NORMAN STEVENS

Advertisement & Business Manager : C. W. C. OVERLAND, 2ATV.

## The "Hissing Phenomenon"

**T**HE largest group of sunspots seen since 1926 produced unusual sunspot activity recently, which earned a place for itself in the columns of the daily press, because mention was made for the first time of the "hissing phenomenon." This noise, produced by solar radiation, will already be familiar to workers on 28 Mcs. It was first described by an amateur, D. W. Heightman, G6DH, of Clacton-on-Sea, in 1936, to whom we are indebted for the following information.

G6DH first described the occurrence of a strange hissing sound, to be heard occasionally on the 28 Mcs. amateur band, in a letter to the *Wireless World* in March, 1936. The noise, not unlike that made by a super-regenerative receiver, was at first heard only for periods of a few minutes, and could not be attributed to any form of man-made static. A good deal of attention was paid to this phenomenon right up to the outbreak of war by G6DH and two other well-known amateurs, Miss Nelly Corry, G2YL, and E. J. Williams, B.Sc., G2XC, the latter proving its relationship to the chromospheric solar eruptions.

The "hiss" takes the form of a soft rushing sound chiefly audible in the region of 25-30 Mcs., but occasionally also audible from 12 Mcs. to over 60 Mcs. It gradually builds up in strength, lasting from a few seconds to fifteen minutes or more, gradually fading away to inaudibility. Sometimes it is spasmodic in nature, appearing and disappearing in rapid bursts. It is normally only audible during the hours of daylight at times of unusual sunspot activity. The effect on radio signals varies. When the hiss is intense and lasts for a matter of minutes, short period fadeouts

## EDITORIAL.

follow almost immediately, but at other times, when the hiss is weaker, little change in propagation conditions is observed.

## United Nations Radio Stations.

A plan was recently adopted to establish broadcasting stations in the U.S.A., to be controlled by the United Nations. Sir Hartley Shawcross, British Attorney-General, urging their value said they would "give the world the true facts and the courage and energy to solve the problems confronting it."

## Radio Amateur Examination.

It is learnt from the City and Guilds of London Institute that the first examination for Radio Amateurs will be held by the Institute on Wednesday, May 8th, from 7 to 10 p.m. There are a number of centres throughout the country at which candidates may sit, and intending candidates should apply to their nearest technical institute and request that they may be accommodated for the examination. The institute's examination fee is 10/- and examination centres may charge a small accommodation fee in addition to this.

At the time of going to press, the syllabus for the examination has not been made public, but we hope to give details in our next issue.

## Welcome.

We introduce a new feature this month — "Resonant Lines," by our old friend "Centre Tap," who will be remembered for his entertaining articles in the pre-war radio press. He has consented to write for us regularly and we join with our readers in welcoming him to Short Wave News.

A.C.G.

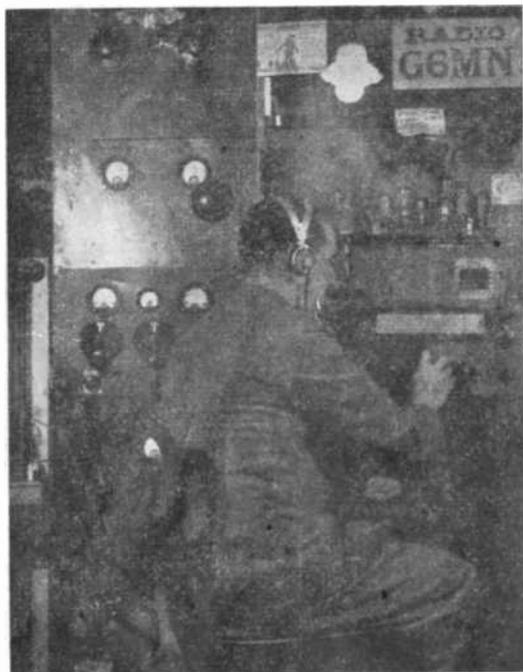
## NOTICES

**THE EDITORS** invite original contributions on short wave radio subjects. All material used will be paid for. Articles should be clearly written, preferably typewritten, and photographs should be clear and sharp. Diagrams need not be large or perfectly drawn, as our draughtsman will redraw in most cases, but relevant information should be included. All MSS must be accompanied by a stamped addressed envelope for reply or return. Each item must bear the sender's name and address.

**CLUB SECRETARIES** are invited to submit details of activities for insertion in our monthly club notes, which must arrive at this office by the 5th of each month.

**COMPONENT REVIEW.** Manufacturers, publishers, etc., are invited to submit samples or information of new products for review in this section.

**ALL CORRESPONDENCE** should be addressed to "Short Wave News," 57 Maida Vale, Paddington, London, W.9. Telephone CUN. 6579.



## Around the Shacks.

No. 2: 6MN

**G**6MN was first licensed as a transmitting station in 1927, and the operator, E. R. Martin, can therefore be truthfully classed as an "Old Timer." His experience of radio goes much further back than that, though, as the *radio bug* first bit him way back in 1922, when a crystal receiver was built and the first thrilling DX logged, in the shape of 2LO.

The next step forward was the making of a single-valver, by means of which the Morse code was learnt by listening to Dutch and French Hams operating on 100 metres. At the same time Yorkshire Hams were received on 440 metres, using telephony.

The first transmitter constructed was a Hartley, using one of the old "R" type valves as oscillator, and a Townsend T.V.T. Trench Vibrator as the H.T. unit. Italy was one of the countries worked with this gear. The next Tx was a TPTG, wired up on a bread-board. This was followed by a crystal controlled job, the crystal being made by grinding down a spectacle lens, with much "sweat and tears," until it oscillated on the 40 metres band.

After trying out many circuits and layouts, a standard size rack and panel job was built, and is shown in the photograph. The rack was home made (as most of the gear at 6MN is) and was built up out of an old iron bedstead bought at the local

marine stores for a shilling. The panels are of 16 swg. aluminium, and the chassis ex Murphy surplus. The H.T. and L.T. power packs are located at the foot of the rack, supplying grid bias, heater voltages and H.T.'s of 250, 500, and 1,000 volts. The second floor up houses the modulator, a resistance-capacity coupled unit with the output valve feeding into the P.A. stage. Above this is the exciter, a tritet C.C.O. or E.C.O., with doublers bringing the 80 or 40 metre crystals down to five metres.

The output from the exciter is fed into the next unit up, the Power Amplifier—a conventional arrangement with a W.E. 242A giving 100 watts on 3.5, 7 and 14 Mcs. A separate Tx was used for 3.5 Mcs. telephony, with a 47 as CO, a 46 as buffer amplifier, and a DET1 as PA. This was the line-up at the "great close down," and plans are now in hand for a rebuild—using more modern valves—on 28 and 58 Mcs. The aerial in use was a full wave Zepp on 14 Mcs., which was 71 feet high, the masts being home built on the hollow box principle, and tapering from nine inches to four and a half inches at the top section. The receivers employed were a National NC81X and a TRF3.

Visitors are always welcomed at 6MN, and the station hopes to be on the air again very shortly.

# On the Ham Bands.

Conducted by "CQ"

**T**HE best news of the month is that British amateurs are definitely on their way back. It appears that old licences are being re-issued—in alphabetical order of applicant's surname. At the time of writing, the GPO have proceeded as far as the H's.

Keep an eye, or rather an ear, on the 28 Mcs. and 58 Mcs. bands for local G's. If you do hear any, why not get the op. on the 'phone. We anticipate that he will be more than pleased to hear that he is getting out!

● **58 Mcs.:** The writer, owing mostly to limited time, has not yet logged any ham signals, though several British and other European commercial harmonics have been heard.

● **28 Mcs.:** Dead! After fizzling out in early December this band is still devoid of signals. This seasonal fade-out is unfortunate inasmuch as the band is one of the first to be returned to G's, and in its present state is not a lot of use! However, we live in hopes that it will open up again before very long.\*

A letter from Vic Williams, VE3KE, of Ottawa, shows that this "deadness" of the band is not confined to this country, but is international. Vic has worked no DX since early December. We reproduce his QSL on page 56 and we believe it is the first post-war ham QSL to be illustrated in any radio publication. The rig at VE3KE consists of an exciter unit feeding two HK54's in push-pull, the input being 350 watts. The aerial is 132 feet long, fed from a tuned line running NE-SW. 3KE says his brother, VE3BCO, also of Ottawa, would appreciate reports on his 35 watt rig. If anyone hears 3BCO would he please send the report to me and it will be forwarded.

● **14 Mcs.:** During January conditions have been very erratic. On some days DX signals were excellent during daylight, and poor during the hours of darkness. Other days, conditions have been exactly the reverse. A point of interest is that on some occasions PY's have been the only signals audible; those that have been heard include PY2HT, KT, KD, 4IK, FI, BU, 6AW, and 7VB.

The Argentine Republic has been represented by LU6DJK and Venezuela by YV5AE. Incidentally, 5AE was working his first AR (AR7A, we hope he gets the QSL!!). Colombian Republic is again on the map, in the form of HK7AB, and the sole representative of Mexico heard here was XP3AG.

The "catch" of the month was undoubtedly VR4AD, of Tulagi, Solomon Islands. Unlike the majority of the various VR calls to be heard these days, 4AD is definitely genuine. In pre-war days the station was operated by A. W. Dickes and ran but 20 watts, the receiving side being taken care of by an Eddystone Four.

Another interesting signal emanated from W9SHG, operating on board ship off Hobart, Tasmania. He was using an Inverted L aerial and was putting over a real R9 signal, but when he announced that he was using 750 watts input the writer tuned down the band in disgust! The latest news of G6ZY, is that he is now in Libya using the call LI6ZY. This fellow certainly seems to get around, and makes one wonder how he will settle down after he is demobbed and has to confine himself to just one call-sign!

Some light has been gleaned regarding the mystery station EP5SO. Most of us had come to the conclusion that he was just another of those pirates, but now the writer is not so sure. On looking through some back numbers of "QST," a paragraph was noticed concerning this station. In answer to a reader's query, it was stated that, although the call may have sounded a little peculiar, the station was definitely authentic. So that is that—or is it?

Have you heard that creeping frequency drift of IICA? Someone should tell him about it instead of giving him "Ur sigs vy fb, OM"!

● **7 Mcs.:** There is not much more to add to my remarks of last month concerning this band. It still remains the happy hunting ground of those hams who fly the skull and crossbones from their aerial masts! One decent snip was, however, logged on one occasion when the midnight oil was being burnt. This was in the form of LU8UB calling "CQ DX" on CW. The DX possibilities of the band are rather nullified at the time owing to



the QRM of the queer signals, but we hope it will not be long before the band has a more orthodox sound.

● **3.5 Mcs.:** A considerable increase in activity has been noted recently, and it is surprising just how much can be heard on this frequency. PAOPRK can always be relied on for a fine selection of records and a still finer whistling solo! This is all very good, as these highly entertaining activities usually take place long after the BBC has retired for the night. Apropos of "hitting the hay," PAOPRK says that he has to wait until the law abiding citizens of Amsterdam have all gone to bed before he can commence his nocturnal radio experiments. I am not surprised seeing that he uses  $\frac{1}{2}$  kW.! Another way of looking at it, as he says, "is because all pirates are against the law"!

The mixed bag on "80" is made up of various HB, PA, F, ON, OZ, LA and OK calls. Naturally we still have our quota of G7, G9, PR, XP, DG, and AA gentlemen.

Well, that is about the extent of the ham band news for this month, but before we QRT, there is one item that I have been asked to insert. G3MV, now fully licensed, would appreciate reports on his 28 and 56 Mcs. signals. Please forward

\*(Since this article was written, 28 Mcs. has opened up again although there are frequent fade-outs.—Ed.)

full details to me at 10, Orchard Lane Pilgrim's Hatch, Brentwood, Essex.

● **The Dellinger Effect:** As a new departure, we hope to present, at irregular intervals, some notes on propagation factors affecting propagation. We know that "sunspots" play an important part in the variation of reception conditions. It has not yet been established exactly what a sunspot is, but it has been described as consisting of a large "whirlpool" with a very deep vortex, from which is emitted a type of radiation (as yet undefined) which reaches the upper atmosphere, playing havoc, when severe, with radio communications. When this stage is reached, it is visibly apparent by the appearance of the Aurora Borealis or Northern Lights. Fortunately, electromagnetic storms are not a common occurrence, but fade-outs of a shorter duration, called the Dellinger Effect, occur often on the higher frequencies. It is interesting to log the numerous commercial stations giving reliable reception during the day, and to note the relative times of fade-outs in different parts of the world. A few months ago, there was a good example of the Dellinger Effect, with long distance stations being the first to be affected. South and North Americans disappeared first, followed by South Africans, Asiatics, and Australians, in that sequence. Finally the Mediterranean area stations and the Russians vanished, and eventually only the high powered Europeans were audible, but even then the noise level surged up to such a degree that practically nothing was readable. For five minutes the spectrum was devoid of signals, and then the stations started to become audible again. The point of much interest was that the first signals to disappear were the last to return and vice versa.

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# A Communications Type Receiver.

By 2ATV

THE illustrations show a communications type receiver which has been constructed during spare moments over the past few years, as opportunity and the supply of components allowed. With the better conditions in this respect now prevailing, there is no reason why such a receiver should not be built, by those constructors capable of this class of work, in a matter of a month or so. Now the stress on capability is not meant to be taken as "hot air" on my part, nor as any slur on the average builder. The truth is that a receiver of this nature is definitely not suitable for the beginner, or even those with half a dozen sets to their credit. A thorough knowledge of the theories involved, plus the possession of—and ability to use correctly—the necessary auxiliary test and aligning apparatus, is essential to success. It is therefore not proposed in this article to give comprehensive constructional details, though a few notes in this direction will be included.

**THE CIRCUIT.** Fig. 1 shows the theoretical circuit. The aerial can be of the single or double-ended type and is coupled inductively to a tuned input circuit L2/C2. V1 is an R.F. pentode operating in a normal fixed-bias circuit, and coupled by an R.F. transformer to V2, a triode hexode frequency changer. A parallel-fed tuned anode circuit is used in the oscillator section. V2 is coupled to V3, the first I.F. amplifier, through an I.F. transformer tuned to 470 kcs. Variable regeneration is applied to this stage by means of a coupled winding in the cathode circuit, shunted by a capacitor and variable resistor—C17 and R14. A further stage of I.F. amplification follows, using a similar valve V4.

A third I.F. transformer couples V4 to the demodulating diode of V5, a double-diode-triode. The remaining diode provides the A.V.C. potential to the I.F. stages, and is fed from the anode of the last I.F. valve in order to avoid sideband "shriek." The demodulating diode, it will be noticed, is fed from a tapping on the transformer secondary. The loss of gain which this entails is more than offset by the extra

selectivity obtained. The audio output is fed through a series noise limiter stage—V8—to the triode section of V5, the first A.F. amplifier. This is resistance-capacitance/choke coupled to V6, an output tetrode.

V9 is an R.F. pentode working as an electron coupled oscillator at a frequency varying from the I.F. by  $\pm 1$  kcs., the output being fed via a small capacitor C43 to the signal diode of V5, and beating with incoming signals to give an audio output. In other words, a B.F.O. The pitch is varied by C45, and the amount of injection controlled by R30.

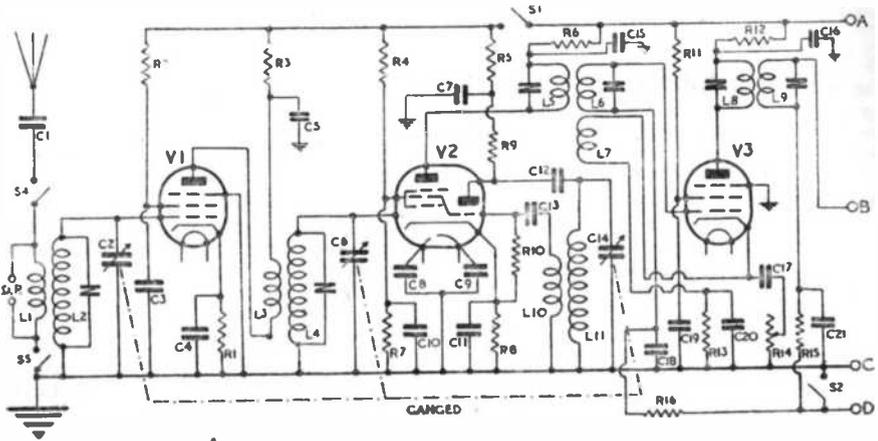
A low reading milliammeter was not available to use in the usual bridge circuit as an "R" strength indicator, and a valve-voltmeter arrangement was therefore employed. This uses a triode valve V7, and measures the A.V.C. voltage, which is proportional to the carrier strength. Although the meter itself is not too sensitive, having a full-scale deflection of 9 mA, the indicator has proved to be very lively, many a signal driving the pointer right off the scale.

The mains side of the receiver, which is not shown in the diagram, follows conventional practice, and consists of the usual transformer, full-wave rectifier, smoothing choke and capacitors.

**FEATURES.** It will have been noticed that only the I.F. stages are A.V.C. controlled. This course was taken in the interests of simplicity in the R.F. stages, when it had been ascertained that such control was quite effective enough for the occasional B.C. listening required.

The R meter has already been described in some detail. It will give a reading irrespective of the position of the A.V.C. switch, but such readings will differ according to the position. Readings should therefore always be taken with the switch in the off position. The valve used should be of the high mutual conductance type. R36 carries a fair current, and is best of the wire-wound variety.

Regeneration in the first I.F. stage not only provides useful additional gain from this stage, but also enables the selectivity



RESISTOR VALUES

R1	...	100~	R2	...	100,000~	R3	...	10,000~
R4	...	30,000~	R5	...	10,000~	R6	...	10,000~
R7	...	30,000~	R8	...	200~	R9	...	20,000~
R10	...	30,000~	R11	...	100,000~	R12	...	10,000~
R13	...	350~	R14	...	1,000~	R15	...	250,000~
R16	...	250,000~	R17	...	50,000~	R18	...	10,000~
R19	...	30,000~	R20	...	250,000~	R21	...	350~
R22	...	1 meg.~	R23	...	1 meg.~	R24	...	50,000~
R25	...	3,200~	R26	...	1 meg.~	R27	...	50,000~
R28	...	500,000~	R29	...	50~	R30	...	300,000~
R31	...	100~	R32	...	2 meg.~	R33	...	65,000~
R34	...	5,000~	R35	...	250,000~	R36	...	1,000~
R37	...	5,000~	R38	...	250,000~	R39	...	500,000~
R40	...	50,000~	R41	...	100,000~	R42	...	10,000~

CAPACITOR VALUES

C1	...	100 uuF	C2	...	100 uuF	C3	...	0.1 uF
C4	...	0.1 uF	C5	...	0.1 uF	C6	...	100 uuF
C7	...	0.2 uF	C8	...	0.01 uF	C9	...	0.01 uF
C10	...	0.1 uF	C11	...	0.1 uF	C12	...	100 uuF
C13	...	150 uuF	C14	...	100 uuF	C15	...	0.1 uF
C16	...	0.1 uF	C17	...	0.001 uF	C18	...	0.01 uF
C19	...	0.1 uF	C20	...	0.1 uF	C21	...	0.01 uF
C22	...	0.1 uF	C23	...	100 uuF	C24	...	0.1 uF
C25	...	0.1 uF	C26	...	2.0 uF	C27	...	100 uuF
C28	...	100 uuF	C29	...	100 uuF	C30	...	0.01 uF
C31	...	25.0 uF	C32	...	0.01 uF	C33	...	0.1 uF
C34	...	0.1 uF	C35	...	25.0 uF	C36	...	0.003 uF
C37	...	0.1 uF	C38	...	0.05 uF	C39	...	8.0 uF
C40	...	0.01 uF	C41	...	50.0 uF	C42	...	0.01 uF
C43	...	10 uuF	C44	...	150 uuF	C45	...	15 uuF
C46	...	600 uuF	C47	...	0.01 uF			

VALVE LINE-UP

V1	...	EF50	V4	...	EF39	V7	...	6J5
V2	...	X65	V5	...	DH63	V8	...	H63
V3	...	EF39	V6	...	KT61	V9	...	KT263

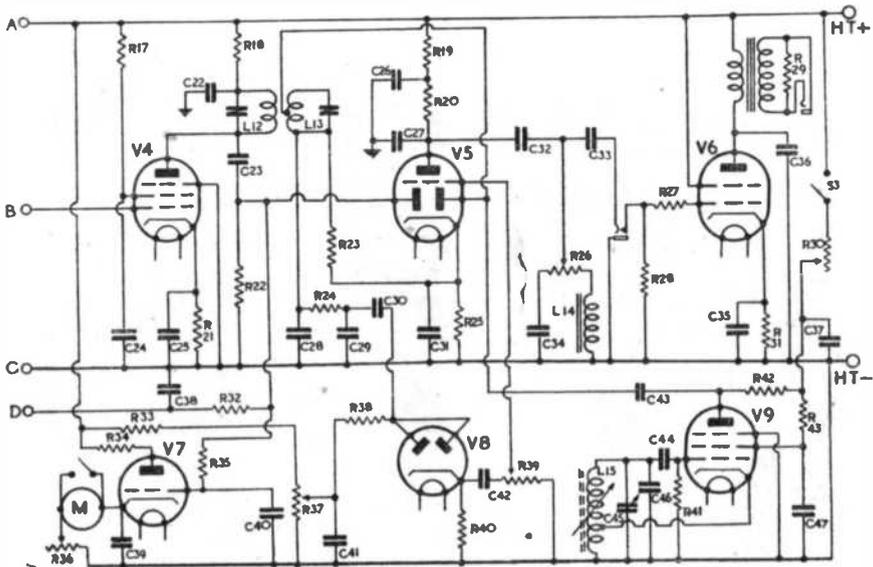


Fig. 1. Theoretical circuit of the communications type receiver.

to be sharpened to approach that obtainable with a crystal filter. With the regeneration control advanced until on the verge of oscillation, the selectivity is such that one sideband becomes almost inaudible, while a most definite peak appears on the other, as is indicated by the "R" meter. It should be noted that the regeneration control must not be wire-wound.

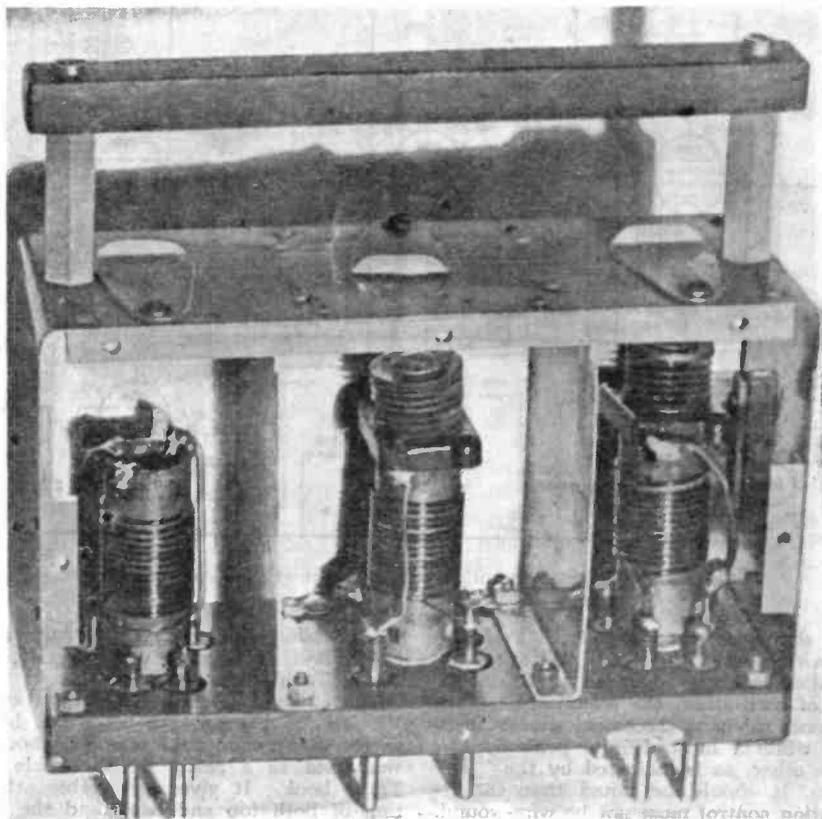
The series noise limiter employs a diode valve—V8—the anode potential of which can be varied from zero to some 30 volts positive. The control—R37—is set so that the valve just passes the required signal. Incoming high amplitude signals, such as car QRM, will result in the anode potential becoming less positive than the cathode, and the valve ceases to conduct. The action is so rapid that it is not noticeable, the effect being that such interference seems to be at a lower level than the majority of signals.

The B.F.O. stage uses the conventional electron coupled oscillator circuit. S3 is the on-off switch, and is ganged to the injection control R30. The coupling capacitor C43 is of very low value, and was made by placing two half-inch long insulated wires in a systoflex covering. It is most important that this stage should not radiate wholesale and be picked up by the R.F. stages, and it is therefore completely enclosed in an aluminium box under

the chassis, with a screening can around the valve. The pitch control, C45, is a 20 uuF variable capacitor.

The audio coupling arrangement between V5 and V6 has not yet been seen by the writer in a commercial receiver, though it was used as a result of an article in a Trade book. It gives a variable attenuation of both top and bass, and the latter has proved exceptionally useful in combating "key clicks." The A.F. choke is of low value, and was made by winding several hundred turns on an old core from a para-feed type transformer, and then removing turns experimentally until a suitable response was obtained.

**CONSTRUCTIONAL NOTES.** As mentioned earlier, these notes will be confined to what might be considered items of interest. The tuning dial is probably the most striking point shown in the photographs. A surplus H.M.V. slow-motion drive was purchased at the local stores, and with its reduction of 50-1 coupled with anti-backlash split gears was obviously ideal for the job. The one drawback was that no dial to suit was available, and that shown in the illustration was accordingly made at home. The diameter is slightly over six inches, and it is made from aluminium sheet with a turned boss of dural.

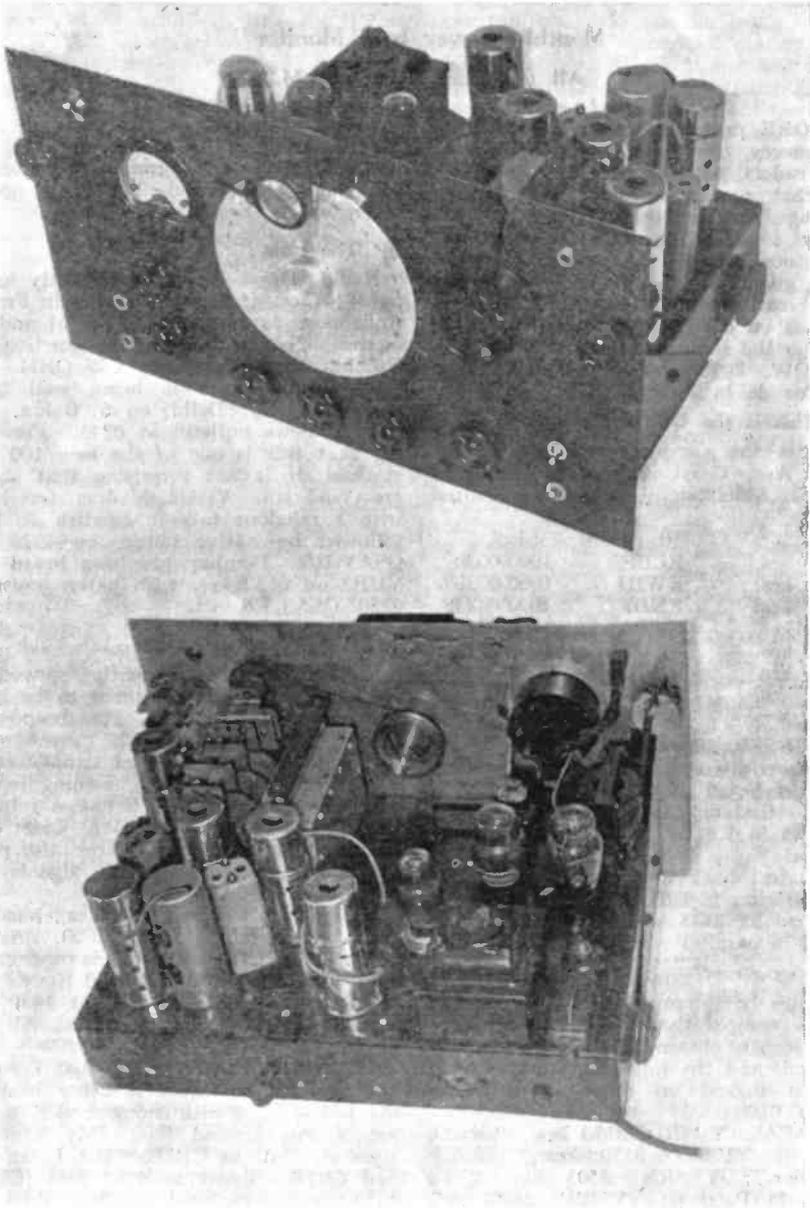


Interior of plug-in coil gang.

The dividing was done on a machine specially built for the purpose, as was the vernier which gives an accurate reading to a fifth of a division. A perspex cursor is also fitted, with a magnifying lens which is adjustable over the length of the cursor. The small box over the dial houses two small lamps. The dial rotates 345 degrees, and is driven through a cord drive, which can be seen with drum in the rear view.

This view also shows the position of the plug-in coil gangs, alongside the tuning gang. The construction of the coil boxes is clearly shown in the third illustration. High grade laboratory bakelite is used for the bases—and handles—while thin sheet dural forms the case. The end panels are removable, and are held in position by 6BA screws threaded into brass angle

strips, the latter being riveted to the case. Dust covers are provided to the holes giving access to the trimmers. Two trimmers, of the air dielectric type, are mounted in each box on the mixer and oscillator coils. The trimmer for the R.F. stage is mounted on the panel—extreme left in rear view—and enables this stage to be kept accurately aligned throughout the tuning range. The coil pins are solid, and plug in to Clix ceramic seven pin holders, which have self-aligning sockets. These pins, incidentally, were turned up from sundry lengths of potentiometer spindles taken from "dud" components. When changing coil boxes, the chassis is withdrawn from its recess on two rubber-tyred wheels, originally dinner-wagon castors, which can be seen in the photos.



Front and rear view of the receiver.

# Around the Broadcast Bands.

Monthly survey by "Monitor"

All times are given in G.M.T.

**B**EFORE proceeding with this month's survey, we would like to draw readers' attention to some modifications that are now necessary to bring preceding surveys up-to-date. In the January issue, the station reported as HHBM now appears to be HHCM. The station given as HJCT, 9860 kcs., has changed call-sign to HJCAB. YNDS reported as on 6760 kcs., should have been YNPS on the same frequency. The slogan of YNQW, 7070 kcs. should have read "La Voz de la Victoria."

## ● "This is the United Network"

Here is the complete schedule of the U.S.A. West Coast stations operating in the Latin American Service of the United Network:

Frequency	Call	Schedule
17850 kcs.	KCBF	1000-0030
17760 kcs.	KWID	1000-0030
15340 kcs.	KNBI	1000-0445
11790 kcs.	KNBA	1000-0445
11770 kcs.	KCBA	1000-0030
9570 kcs.	KWID	0045-0415
9550 kcs.	KCBF	0045-0600
6170 kcs.	KCBA	0045-0600

The CBS station at Delano, KCBA, relaying the United Network Latin American beam was heard at 0230(R7) but had a slight heterodyne and flutter on signals. Has news in English at 0400. Frequency 6170 kcs.

The latest Sackville channel to be put into operation is CKLO on 9630 kcs. It was heard at 2145 with a mighty signal, working in parallel with CHOL.

## ● "86 metres"

I wonder how many readers have listened on this comparatively new band? The writer recently obtained some coils to cover this band, and the following stations have all been logged on numerous occasions between 0100-0300.

CARACAS: YV5RD, 3570 kcs., "Radio Cultura"; YV5RS, 3530 kcs., "Radio Libertador"; YV5RX, 3505 kcs., "La Voz de la Patria"; YV5RW, 3400 kcs., "Radio Tropical"; YV5RY, 3380 kcs., "Radio Continente." MARACAIBO: YV1RU, 3440 kcs., "Radio Maracaibo." TRUJILLO: YV1RO, 3310 kcs., "Radio Trujillo."

The most reliable signals emanate from YV5RS, using 2 kW. power, and the 1100 watt YV5RW. QRM from CW stations is sometimes experienced, but it is not so severe as on the 60 metre band.

## ● The East

Radio Saigon, FZR, was recently logged on 4810 kcs. at 2330 with news in French. Announced as operating on 25, 61 and 250 metres. Signals were quite good, QSA3 R6, but there was heavy CW QRM.

All India Radio is being well heard through VUD7, Delhi, on 6190 kcs. with English news bulletin at 0245. Considering that this is one of the new 100 kW. stations, it is not surprising that signals are QSA5 R9! VUM2, Madras, was heard with a religious talk in English at 1815, followed by native music, on 4920 kcs. QSA3 R6. Bombay has been heard over VUB2 on 6150 kcs. with native music at 0250. QSA3 R6.

## Africa

Leopoldville has recently moved to 9745 kcs., where it continues to be heard with its terrific signals. Has been heard with English news at 0020, preceded by the usual tom-tom interval signal.

ZOY, Accra, has been booming in here on 4915 kcs. with B.B.C. news relay at 1800, followed by "The Gold Coast news broadcast from Accra." Since the power has been increased to 5 kW., signals have been mostly QSA5 R8.

VQ7LO, Nairobi, on 4950 kcs., has been even louder, also around 1800. As the power is but 1500 watts, this is most creditable. You may hear the local Kenya news at 1800, a weather forecast at 1830, and then an hour of classical music. All very nice.

It has also been reported that Lourenco Marques, Mozambique, is being heard in the 4 Mcs. band with commercial sponsored programmes around 1800. My informant gives the call as CR7BF, but I can only find CR7BO listed on 4920 kcs. (CR7BF 4920 kcs. has replaced CR7BO.—Ed.)

## ● South America

Several Buenos Aires stations are coming in well, especially on the low frequency end of the spectrum. "Radio Belgrano"

is heard on 6090 kcs., using the call LRY1, relaying the medium wave LR3. It also has channels on 9640/9690 kcs., call LRY. Often works in parallel with the Paraguayan ZPA5, which relays ZP5. "Radio Splendide," heard on 5985 kcs. at 0200, call sign LRS1. Relays the medium-wave LR4 and has other channels, LRS on 9320-9360 (it varies!) and on 3430 kcs., call unknown. (LRS is officially listed on 9315 kcs. The 3430 channel is given as LRS also.—Ed.) "Radio el Mundo," has been heard through LRX1 on 6155 kcs. relaying LR1. Other channels are LRX, 9660 kcs., 7½ kW. and LRU, 15290 kcs., 5 kW. These stations are associated with Editorial Haynes Ltd., publishers of the newspapers El Mundo, El Hogar, and Mundo Argentino.

Many Brazilians are providing steady reliable signals, notably "Radio Nacional," heard over PRL8, 11720 kcs., and PRL7, 9720 kcs. "Radio Tamoio," ZYC8, is well heard on 9610 kcs., relaying "Radio Tobie." The 6000 kcs. Bello Horizonte transmitter is a very good signal from 2300 using the call PRI3 "Radio Inconfidencia." Sao Paulo may be heard regularly through "Radiodifusora Sao Paulo," ZYB7, on 6095 kcs. Power is 5000 watts. The 60-metre Brazilians are still coming in well around 0230.

The 6 Mcs. band has produced a good haul of Colombians this month, and they are listed below. All of them are providing consistent signals, and the reports given are for reception between 0030-0230.

Frequency	Call	Location	Slogan	QSA	R
6018	HJCX	Bogota	La Voz de Colombia	5	7
6055	HJFA	Pereira	La Voz de Pereira	3	5
6145	HJDE	Medellin	La Voz de Antioquia	5	9
6160	HJCD	Bogota	Emisora Nueva Granada	5	9
6200	HJCT	Bogota	Radiodifusora Nacional de Colombia	4	7
6220	HJFB	Manizales	Radio Manizales	4	7
6240	HJCF	Bogota	La Voz de Bogota	4	6

If you haven't heard the "rare" country of Peru, try for OAX4Z, Lima's "Radio Nacional del Peru" which is putting out very strong signals on about 5870 kcs. Heard from 2300. A newcomer to my log is OAX4H also at Lima. Heard at 0420 with swing music programme, giving call and slogan at 0430. The latter, by the way, is "Transmite Radio Mundial de Lima," and the frequency is about 6390 kcs. (Is listed as 6368 kcs.—Ed.) The only other Peruvian heard recently was OAX6B at Arequipa on 6030 kcs. relaying "Informaciones de Radio Lima." Signed off at 0410. The official powers of the

above stations are: OAX4Z, 14 kW.; OAX4H, 1 kW.; and OAX6B, 150 watts.

Bouquets to Montevideo's CXA19, now operating on 11835 kcs. for being the most consistent South American station. This transmitter uses 5 kW, power and may be heard nearly every evening from 2130 onwards. Announces as "El Espectador" with numerous identification signals such as gongs, clock chimes, cock crowing, and so forth! It has a (bad?) habit of relaying other Latin American stations which may confuse the unwary. I heard a relay from PRA9, Rio de Janeiro, "Radio Marine," at 2215, and also a French language transmission at 0115 entitled "Radio France"!

● The West Indies

Three 31-metre Havana stations were logged between 0000-0100 under very adverse general conditions. The star performer was COBC 9362 kcs., giving call in English as "Short-wave COBC relaying station CMBC in Havana, capital of the Cuban Republic." The other two stations were COBL, 9833 kcs., announcing as "Radio Cadena Suaritos" at 0000, and COCX, 9273 kcs., the famous "Emisora El Pueblo," R5 at 0050 with frequent reference to "Pasta Gravi."

Many of the Dominican stations are coming in with steady signals nowadays, particularly HI1R, "Broadcasting Nacional HI1R, La Voz de Santacion en

en San Cristobal," with QSA5 R9 signals on 6240 kcs. On 6310 kcs., HI1Z. Trujillo City, has a very fine signal around 0100 or earlier, announcing as "Broadcasting Nacional HI2 y HI1Z en Cuidad Trujillo capital de la Republica Dominicana una de las naciones unidas." Frequent reference is made to the "Naciones Unidas," which assists identification.

Improved reception of HI2T, 6480 kcs. has been noticed on several occasions by your scribe. This transmitter is located at Monsenor Nouel and comes in QSA4 R7-8 from 0030 or earlier. Recognition is easy as the slogan, "La Voz de Yuna," is re-

(Cont. on page 79)

## Resonant Lines.

By Centre Tap

**D**EMOBBED! At least I shall be by the time you read this. Momentarily, the excitement of it overshadows my interest in everything else, even my interest in short wave radio—almost! It is now 25 years since I wound my first tuning coil and some 7 years since I addressed my fellow fans through the columns of the late "Short Wave Magazine," which disappeared in the early days of the War when most of its staff were called to the Services. At times, those happy days seem so remote while, at others, it seems but only yesterday. Now I look forward more than anything else to renewing most, if not all, of those contacts.

Unlike a great many Servicemen I have no misgivings about re-settling quickly to civilian life, an asset no doubt acquired through my long association with the Ham world. However much other things may have changed, radio itself remains unaltered and I'm confident that the friendly spirit of the amateur is as strong as ever, while the greatly expanded use of short wave communication throughout the Services has considerably increased their numbers.

**QRM.** What else of this brave new world I am about to enter? As a town-dweller whose pre-war DX-ing was cursed by more than my fair share of QRM, I've often felt that the War presented a golden opportunity for the introduction of legal measures to ensure its suppression. I hear that the manufacture of electrical appliances has been at a standstill. What an opportunity to require effective suppression on newly manufactured apparatus! Car ignition should be included. I, for one, often suffered at the hands of a neighbour who constantly left his engine ticking over for ten or fifteen minutes before driving off. All Service vehicles were fitted with suppressors as standard equipment, and in enclosed mobile stations one did not have to look to discover whether an approaching vehicle was Service or civilian. The interference from some of the latter was often so bad that one almost instinctively turned down the "gain" long before the vehicle came really close. I cannot really think that anything much has been done about this yet, but there is still time if enough

of us agitate for it. I don't want my future short wave listening ruined each time Mrs. Nextdoor decides to use her vacuum cleaner!

**HUSH-HUSH.** Maybe I am forgetting that our Administrators do things in an odd way in this country—at least they seemed to in my last civilian existence. I fancy they must do so still, having read more or less detailed technical descriptions in American journals of apparatus which at the time of writing seem to be still on the "secret list" here.

**TICKLISH.** Talking of American journals reminds me of the period of my Army life spent in instructing. U.S. books and magazines were often more readily obtainable than ours, and they proved very helpful to trainees once these had become accustomed to the American style of circuit and radio terms. They quickly saw for themselves the meanings of *Antenna*, *Ground*, *Vacuum Tube*, *Plate*, etc., but more than once I was asked the meaning of *Tickler Coil—Reaction*, of course—and *A, B and C batteries*, for L.T., H.T. and G.B. sources. The latter perhaps was made a little more puzzling by the Army calling their most used 1.5v. cells "X" and "W," the former being of the normal type, and the latter a cell intended for tropical use and requiring the addition of water before being put into service. The one point in American set descriptions that might have mattered was their different wire gauge; but even this is normally unimportant owing to the very slight difference involved.

**F FOR VESCENT.** It will be rather interesting to hear, when once the ether gets busy again with amateur transmitting, if Service training in R/T procedure will result in a marked change from our pre-war informality. Old habits die hard! I well recall when our Forces changed the phonetic alphabet from *Ack, Beer, Charlie, Don*, etc., to *Abel, Baker, Charlie, Dog*, in order to secure uniformity upon America's entry into the War, how at first one frequently slipped back into the old phonetics. It required some concentration to check oneself from saying *London, Monkey* or *Orange*, instead of the then strange sounding *Love, Mike*, or *Oboe*. About that time a mock phonetic alphabet

(Cont. on page 78)

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10 watt 50 - 2,500 ohm	...	...	2/2
18 watt 60,000 ohm only	...	...	2/6
25 watt 1, 13.5, 875, 50,000 ohm only	...	...	3/6
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100 watt 10,000 ohm only	...	...	7/6

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6 way 2 pole	...	3/0	2 way 3 pole	...	2/9
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A large assortment of first grade 4BA terminals, brass or moulded heads ... 5d

**Wire-wound Pentotometers**

1k, 2k, 3k, 10k, 20k, ohm 1½ w	...	...	4/0
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**High voltage Capacitors**

1 mfd 1,000v tubular 1/6;	1,500v block 2/0	
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0.2mfd 7,000v 20/0;	1mfd 5,000v block 20/0	

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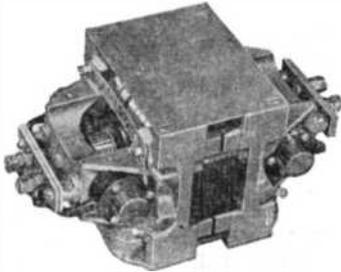
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# BROADCASTING STATION LIST.

Part 1 : 18545 kcs. - 15130 kcs.

**T**HIS list has been compiled by the Signal Survey Section of the British Short-Wave League, and contains only stations that are operating on regular or irregular broadcasting schedules. Stations not in use, channels not in use at the time of going to press, and stations under construction are not included.

Frequency	Call-sign	Location	Slogan	Power (watts)
18545	...	R . .	Moscow	Radio Centre Moscow
18450	...	HEC	Berne	Radio Suisse
18390	...	WLWS2	Cincinnati	75000
18160	...	WNRA	New York	50000
18135	...	—	Batavia	10000
18080	...	GVO	Daventry	
18025	...	GRQ	Daventry	
17980	...	KHE	Honolulu, Hawaii	
17955	...	WLWL1	Cincinnati	75000
17870	...	GRF	Daventry	
17850	...	PRL9	Rio de Janeiro	Radio Nacional
17845	...	—	Brussels, Belgium	Radiodiffusion
17840	...	—	Athlone, Eire	National Belge
17835	...	OTS	Leopoldville	Radio Eirrean
17830	...	VUD10	Delhi	Radiodiffusion
		WCBN	New York	National Belge
17820	...	CKNC	Sackville, Canada	All India Radio
17810	...	GSV	Daventry	100000
17800	...	KRHO	Honolulu, Hawaii	50000
		WLWO	Cincinnati	75000
17790	...	GSG	Daventry	10000
17780	...	KNBA	Dixon, California	50000
		WNBI	New York	50000
17775	...	PJC1	Willemstad, Curacao	Radio Princesa Juliana
17770	...	OTC5	Leopoldville	Radiodiffusion
		KROJ	Los Angeles	National Belge
17765	...	TPC3	Paris	50000
17760	...	KROJ	Los Angeles	100000
		KWIX	San Francisco	15000
		KWID	San Francisco	50000
17750	...	WRUW	Boston	100000
17745	...	OTM6	Leopoldville	20000
		GVQ	Daventry	Radiodiffusion
17720	...	LRA5	Buenos Aires	National Belge
17700	...	GVP	Daventry	20000
17527	...	—	Brazzaville	7000
17445	...	HVJ	Vatican City	Radio Brazzaville
16670	...	CNR	Rabat, Morocco	Radio Vaticano
16025	...	THA3	Algiers	Radio Maroc
15875	...	—	Berne	600
15750	...	RRRDR	Moscow	25000
15595	...	FZI	Brazzaville	25000
15585	...	—	Salisbury, S. Rhodesia	Radio Centre Moscow
15515	...	HDR/ HCJB	Quito	Radio Brazzaville
15450	...	GRD	Daventry	50000
15435	...	GWE	Daventry	
15430	...	ZOY	Accra, Gold Coast	
15420	...	GWD	Daventry	5000

SHORT WAVE NEWS

15405	...	PZC	Paramaribo, Surinam	750
15390	...	YU . .	Belgrade	
15380	...	—	Moscow	Radio Centre Moscow
15370	...	ZYC9	Rio de Janeiro	Radio Tamoyo 25000
15350	...	WRUA	Boston	50000
		VUD8	Delhi	All India Radio 7500
15345	...	CXA9	Montevideo	Radio Lihertad 5000
15340	...	KNBI	Dixon, California	50000
		KNBX	Dixon, California	200000
		—	Moscow	Radio Centre Moscow
15330		WGEO	Schenectady	100000
		MTCY	Hsing'g, Manchukuo	The Voice of Manchukuo 20000
15320	...	OQ2RC	Leopoldville	250
		—	Moscow	Radio Centre Moscow
		OQ2AB	Leopoldville	Radio Congolia 50
15315	...	VLC4	Shepparton	50000
15310	...	GSP	Daventry	
15300	...	—	Paris	
15290	...	WRUL	Boston	50000
		KWIX	San Francisco	50000
		VUD3 .	Delhi	All India Radio 5000
15280	...	WNRE	New York	50000
		—	Moscow	Radio Centre Moscow
15275	...	ZOJ	Colombo, Ceylon	South East Asia Command 7500
15270	...	RW96	Moscow	Radio Centre Moscow 100000
		WCBX	New York	50000
		KCBR	Delano, California	200000
15260	...	GSI	Daventry	
15250	...	CR7BD	Lourenco Marques	Radio Clube do Mozambique 300
		KRHO	Honolulu	100000
		WLWR1	Cincinnati	175000
		WLWK	Cincinnati	50000
15240	...	IPA2/ TPC5	Paris	
		KNBI	Dixon, California	50000
		KNBX	Dixon, California	100000
15230	...	—	Komsomolsk, USSR.	50000
		WLWL2	Cincinnati	75000
15220	...	PCJ2	Huizen, Holland	50000
15210	...	KGEX	San Francisco	100000
		WBOS	Boston	50000
15200	...	WLWS1	Cincinnati	75000
		VLA6	Sydney	
15190	...	WOOC	New York	50000
		VUD5	Delhi	All India Radio 100000
		OIX4	Pori, Finland	15000
		CKCX	Sackville	Radio Canada 50000
15180	...	GSO	Daventry	
15170	...	—	Leopoldville	Radiodiffusion National Belge 50000
		—	Guatemala City	La Voz de Guatemala 10000
15165	...	—	Algiers	United Nations Radio
		PRE9	Fortaleza, Brazil	Ceara Radio Club 5000
15160	...	VUD7	Delhi	All India Radio 100000
15155	...	SBT	Motala, Sweden	12000
15150	...	KNBX	Dixon, California	100000
		WRCA	New York	50000
15140	...	GSF	Daventry	
15130	...	WRUW	Boston	20000
		WRUL	Boston	50000
		KGEX	San Francisco	100000
		KGEI	San Francisco	50000

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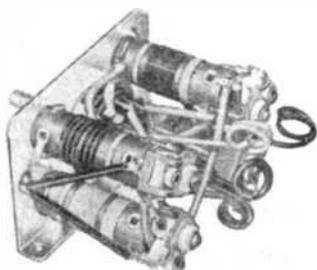
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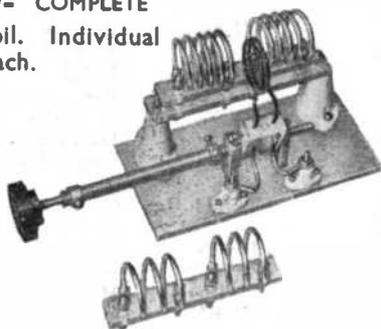
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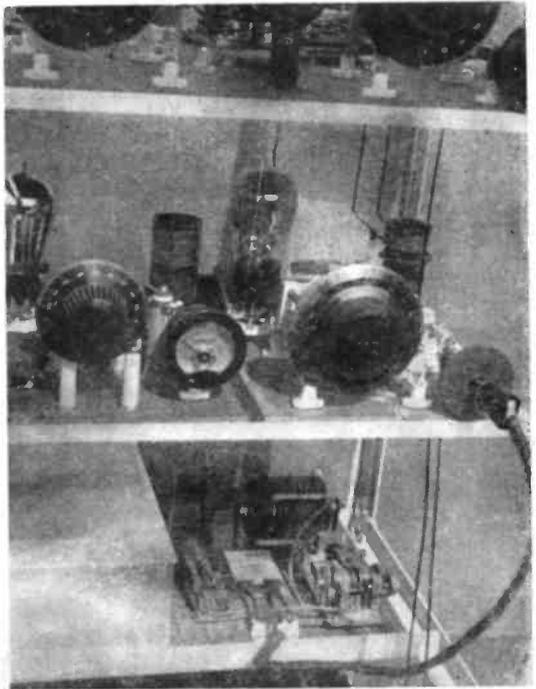
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# 100 WATTS ON TEN.

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View of Original Transmitter.

**I**T is probably true to say that the greater proportion of amateurs licensed before the war, were licensed for ten or twenty-five watts only and operated on seven or fourteen Mcs. All these amateurs will now wish to avail themselves of the facilities granted in the new licensing regulations permitting the use of up to 100 watts on the ten metre band, and they will consequently be faced with the problem of getting going on this band with as near 100 watts as possible with their existing gear, as few will wish to be delayed by having to undertake a major rebuild.

The main difficulty of getting the increased output is that few of those with pre-war 'low power permits' will have power packs giving much more than, say, 250 m.a. at 600 volts. Most of these amateurs, too, will have used comparatively simple transmitters of two or three stages only. The higher frequency allocation will therefore necessitate adding more doubler stages or in some other way getting the higher frequency drive from a 3.5 or 7 Mcs. crystal oscillator stage.

G2UK was licensed for twenty-five watts only prior to the war, and operation was

confined to seven and fourteen Mcs. When the Tx was built, the possibility of eventual authorisation for 100 watts was regarded as being extremely remote and two 500 volt 250 m.a. power packs were regarded as being sufficient to cover all needs for a long time to come. It is hoped that these few notes on the recent rebuild may be of use in helping others to utilise their existing equipment for the higher frequencies and power.

The circuit of the old Tx is shown in Fig. 1, and the general layout can be seen from the photos. As will be seen, it was a pretty straightforward CO.FD.PA using triodes. Each stage was built on to an oiled wood baseboard fitted into aluminium racks in a steel frame. All power supplies, control gear and filament transformers are in the base of the Tx, and each stage can be removed without disturbing the rest of the gear.

A perusal of the circuit soon shows that without adding at least one more FD stage, it will be impossible to get much 28 Mcs. drive. The easiest way of overcoming the difficulty is of course to rebuild the crystal oscillator stage as a tritet circuit, so that

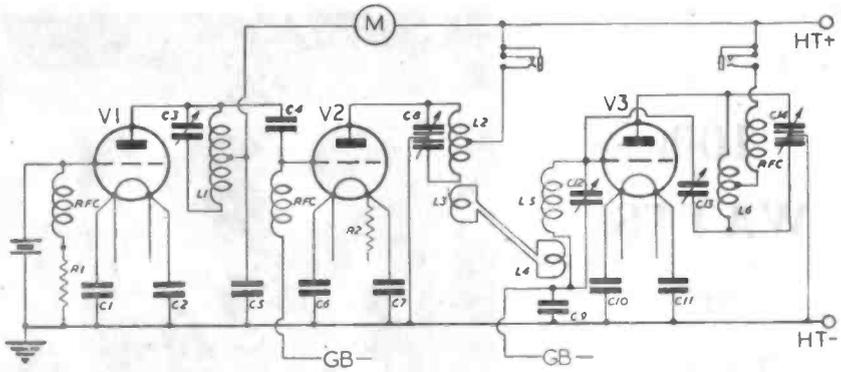
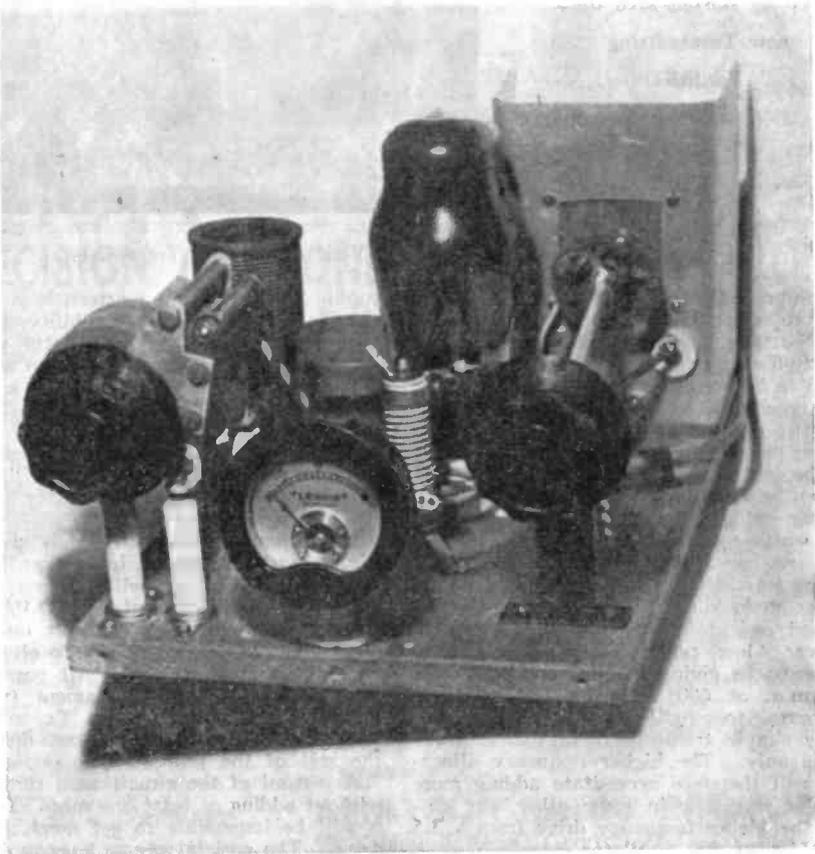


Fig. 1. Circuit of the original transmitter.



The new tritet stage.

output at 14 Mcs. can be obtained from either 7 or 3.5 Mcs. crystals, and to retain the existing doubler stage to double this 14 Mcs. output to 28 Mcs. drive for the power amplifier stage. With regard to the P.A. stage itself, as the high tension supply is limited to 500 volts, the most obvious way of getting 100 watts is to use a pair of valves in push-pull. There are not many valves readily available at the moment which will give this output at so low a voltage. However, a pair of 807's are as good a choice as any and they are readily available too, so a pair of these was obtained and a circuit drawn up for them including, as far as possible, the components of the old P.A.

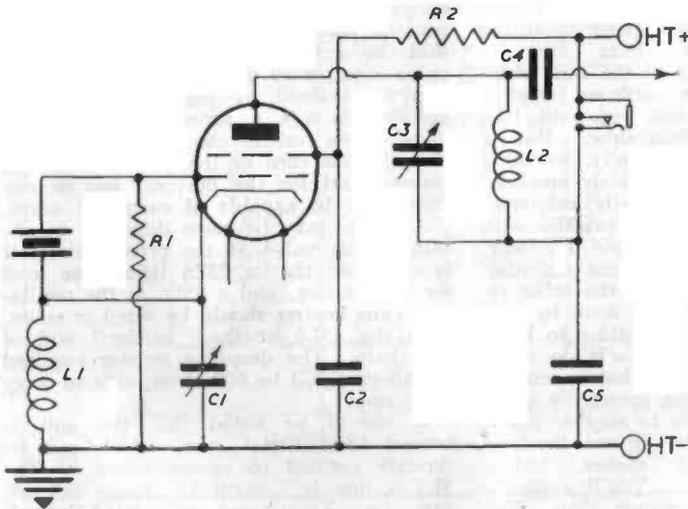
The rebuilt oscillator stage is shown herewith together with its circuit diagram. The P.A. stage will be illustrated and described in detail in our next issue.

**TRITET CRYSTAL OSCILLATOR STAGE.** The circuit of the oscillator is

shown in Fig. 2 and it will be seen that it is a conventional tritet arrangement. Most of the original components have been used in the new circuit, a new valve holder, resistor, coil and tuning capacitor being the only new components needed. The only point worth special reference is that the anode tuning circuit should be screened from the cathode tuned circuit, and this has been done by means of the small screening compartment shown in the photograph.

This oscillator works well and enough output at 14 Mcs. can be obtained to drive the doubler stage at 28 Mcs., using either 7 or 14 Mcs. crystals. The value of the components used is given beneath the circuit diagram.

The requirements of each amateur will vary, of course, in each specific case, but it is suggested that this crystal oscillator will form a very useful unit for those who have to convert a small two or three stage Tx for the new frequencies.



- C1: .0003 uF
- C2: .002 uF
- C3: .0001 uF
- C4: .00005 uF
- C5: .01 uF
- R1: 100,000~  
1/2 watt
- R2: 20,000~  
10 watt
- L1: 18 turns 20  
swg. on 1 1/2-in.  
former.
- L2: 9 turns 20  
swg. on 1 1/2-in.  
former.
- Valve: KT66

Fig. 2. Theoretical circuit of tritet oscillator.

**SOLUTION TO PUZZLE No. 2**

- |                      |              |                                |               |             |
|----------------------|--------------|--------------------------------|---------------|-------------|
| Across: (1) Traces.  | (6) Powers.  | (9) Down: (2) Ratios.          | (3) Class B.  | (4)         |
| Strain. (10) Candle. | (11) Track.  | (12) Sent. (5) Break.          | (6) Pack.     | (7) Wander. |
| Morse. (15) Fests.   | (17) SABC.   | (20) (8) Relate. (13) Radiate. | (14) Economy. |             |
| Erie. (21) Operate.  | (22) Align.  | (23) (15) Feeders.             | (16) Simpler. | (18) Tests. |
| Depth. (24) Outside. | (25) Atom.   | (27) (19) Magic. (25) Ampere.  | (26) Ornate.  |             |
| Reed. (30) Emery.    | (32) Surer.  | (33) (28) Europe. (29) Dealer. | (31) Neper.   |             |
| Press. (35) Retail.  | (36) People. | (37) (33) Plot. (34) Spot.     |               |             |
| Repeat. (38) Theory. |              |                                |               |             |

# Learning the Code.

Some Circuits for Morse Practice Sets.

**T**HE code proficiency test which is required of aspirants for a transmitting licence seems to be a bit of a bogey to many beginners. Yet the Morse Code is not all that difficult to master. The secret to keep on at it, a little every day, never missing a day without at least a short period of practice. Various short cuts have been recommended for mastering the symbols, but in our opinion the only really satisfactory way is to "get down" to it, memorising the symbols until they become almost automatic.

In this connection, quite a good tip which will give one constant yet almost unconscious practice is to "buzz off" mentally in one's mind the Morse symbols of car numbers, short adverts, etc., seen during one's journey through the day. Next time you are waiting in a bus queue or sitting in a car in a traffic jam, "buzz" mentally to yourself the numbers of the cars which pass along. You'll be surprised what a lot of practice, it gives you—and how quickly it whiles away the time. But do not forget to do this *mentally*, or other people will think you completely crackers!

Once the symbols are really mastered, a beginning can be made on practice with a key. To make really rapid headway, an enthusiastic partner is almost essential, so that one can send whilst the other receives. Quite a lot can be done by tapping out the symbols and getting to know their sounds by ear, but you'll do much better if you do not know what is coming, and have to recognise the sounds by someone else. This brings us to another point. When learning the code, do not think of symbols as "dots" and "dashes," but as "dits" and "dahs." You'll come to recognise them by their sounds, then. You want to associate the letter "V" with the sound "dit, dit, dit, dah," and not as the symbols "dot, dot, dot, dash." Get the idea?

An audio oscillator is, of course, of the utmost assistance, and we illustrate here with three circuits which should cover the needs of everyone.

Fig. 1A shows an oscillator using a battery triode. An old A.F. transformer of around 5-1 ratio has been found to work best, with a triode valve which should preferably be of the output type. If the

circuit does not work when first tested, try changing over the connections on one of the transformer windings. The 30 ohm. filament rheostat is not essential, but is advantageous in that it enables the pitch of the note to be varied. With a suitable valve and transformer, it will be found that a nine volt G.B. battery suffices for the H.T. supply when the output is required only for phones. If it is required to operate a small speaker, as for class or club work, an H.T. voltage of at least 60 will be needed.

Fig. 1B gives a practical circuit for an AC/DC oscillator. The valve shown is a 70L7GT, a diode pentode. The diode section acts as a half wave rectifier on A.C. mains, and as a series resistor on D.C. mains. The anode and screen grid of the pentode section are strapped together so that this section operates as a triode. This valve requires 70 volts on the heater, and this is obtained by dropping the mains voltage through a series resistor of 850 ohms. This resistor can take the form of either a line cord or the chassis mounting resistor sold for the purpose, but in any case must be capable of carry 0.2 amps.

As there may be some difficulty in obtaining this valve at the present time, it is suggested that a 25Z6 Brimar be used for the rectifier, and a 25L6 as the oscillator. The heaters should be wired in series, with the 25L6 at the "earthy" end of the chain. The dropping resistor required in this case will be 600 ohms, able to carry 0.35 amps.

It should be noted that the unit is housed in a metal case, which can be directly earthed to ensure safety. The H.T.—line is "earthed" via a 0.1 uF capacitor. The phones are isolated through an A.F. transformer, ratio 1-1. A suitable component can be obtained from Messrs. Partridge Transformers, Ltd.

Fig. 1C depicts the most simple type of oscillator, viz., a buzzer circuit. It consists of a low voltage buzzer in series with a suitable battery and key, with a pair of phones connected in series with a small capacitor across the coils of the buzzer. The size of this capacitor will have a bearing on the volume obtained. Suitable buzzers can be purchased from some of the advertisers in this magazine.

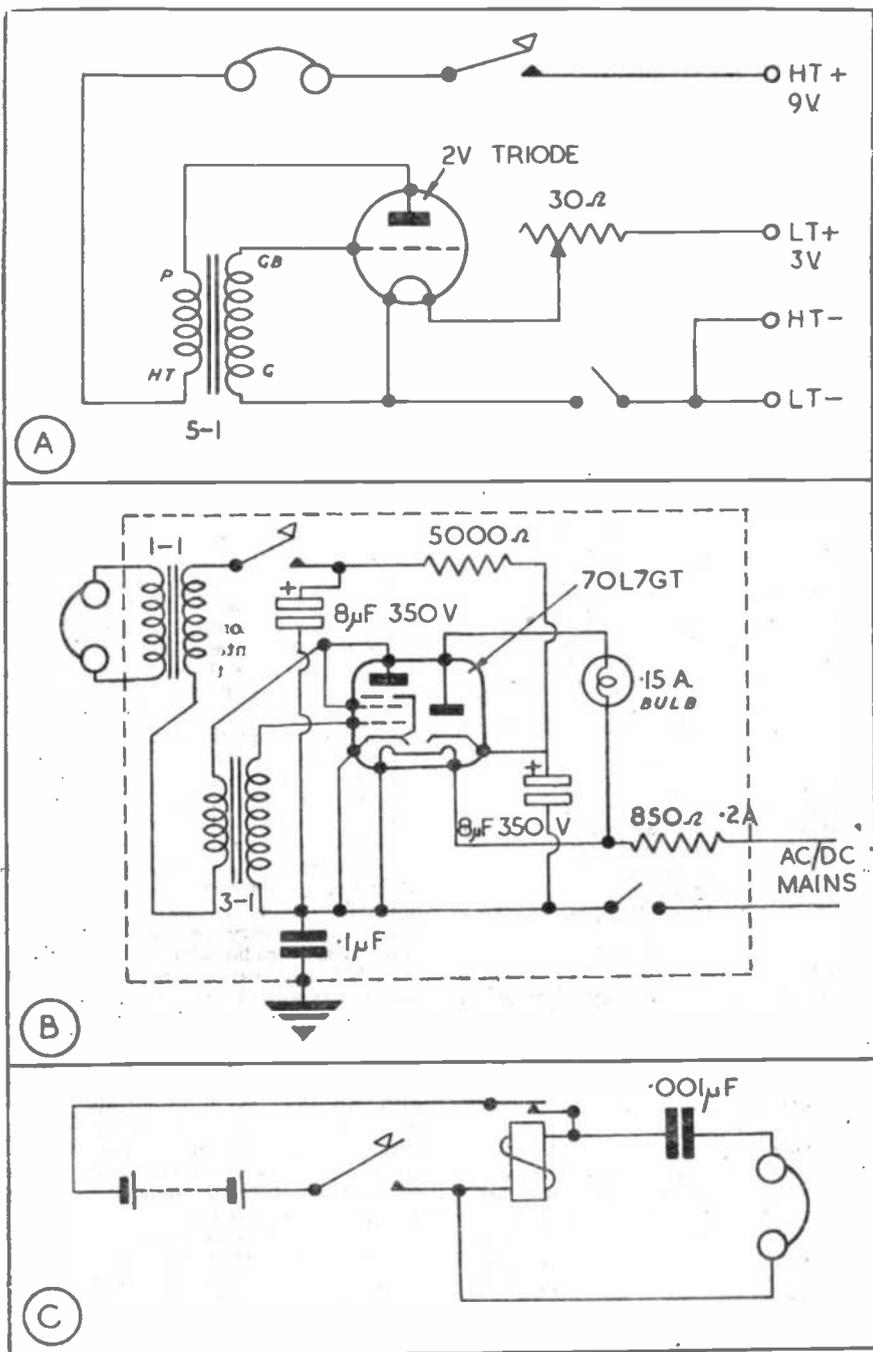


Fig. 1. Audio oscillators for code practice.

## From Our Mailbag.

Dear O.M.'s,

Vast congratulations on your amazing issue of new magazine; lovely stuff (except for the technical part which is so much Arabic to me!). The BC news is wonderfully useful. Best of luck to your fine show.

Yours ever,  
W. Welsman, BSWL 951 (Bath).

Dear Sirs,

Compliment you upon your good judgment *re* the magazine "Short Wave News." May it have a long life.

Yours,  
E. Mitchell, BSWL 1711  
(Willand, Devon).

Dear Sirs,

Let me congratulate you on the first number of your new magazine, for I am sure it will supply a much needed want, for a magazine devoted to SW news and items is what the fans wanted, and I hope they will all rally round and give you the encouragement you need so that the magazine will go forward to greater success.

Yours faithfully,  
N. W. Whitehead (Rochdale).

Gentlemen,

Congratulations and good luck with your publication, this is just what we want, and I predict a terrific sale, especially when more of the lads get home.

Yours faithfully,  
R. A. Fitzjohn (Wisbech, Cambs.).

Dear O.M.'s,

May I take this opportunity of congratulating you on producing such a fine magazine as the Short Wave News. It has all the articles that are most interesting to "tyros" such as myself! Now that components are not being imported from the U.S.A., we shall have to rely entirely on British made goods. Frankly, some of the gear now on the market could be vastly improved in many respects, and some needs are not catered for at all. May I suggest that readers of this magazine put forward their suggestions in this respect, and that these be forwarded to the appropriate manufacturers?

Sincerely yours,  
J. Peerless, BRS 10868 (Liverpool).

Dear O.M.'s,

I was introduced to your new magazine by G3AD and I thought I would drop you a line to wish you the best of luck in the new venture. I think such a magazine has great possibilities and should fill a definite need at the present time for all those new recruits to the hobby since 1939 and also to the many who are returning to the game. I think you are wise to concentrate more on the practical side than on the higher technicalities. The latter aspect being well provided for in other publications. I shall be looking forward to seeing your issue No. 2—so in the meantime may I wish Short Wave News all the success in the world,

73,  
J. R. Garrett-Pegge, G3MI  
(Chesham, Bucks).

Dear Sirs,

You ask for suggestions, and I would like to add my own which I have gathered from coming in contact with many SWL's. A great deal of interest in short-wave radio is marred because there are many listeners who are keen, but, on seeing the description of a new receiver, discover that it is mixed up with mathematical problems and so let it pass by. Your O-v-1 in the January issue is the best yet seen for the beginner, and it is to the beginner that I ask you to try and give a helping hand.

Another listener may find that, when he tries out different types of aerials, the first thing that greets him is more mathematics. My point is—is it not possible to give articles in a very practical way to help newcomers to radio who wish to build their own RX and experiment with aerials of different types. I am certain that there is a big scope for a monthly journal on these lines as there are so many fellows who want a journal that is really practical.

I am basing my letter on contacts made with intending hams during my service in the war years, and I trust that you will publish some articles for the chap that needs a real practical start so that, later on, he can tackle more difficult gear involving deep mathematics.

Once again I wish you the best of luck and I sincerely hope that at last we may get a monthly which will meet everyone's approval—newcomer and Old Timer,

Yours faithfully,  
H. Barnett (Evesham, Worces.).  
(Cont. on page 79)

# HAM QUIZ.

**T**HIS month by way of a change, we present a quiz centred around call-letters, call-signs and so forth.

- (1) When a British ham "went portable" what modification was made to his call-sign?
- (2) The Canadian ham districts are VE1-VE5, but what significance have stations with the prefixes of VE6, VE9 and VE10?
- (3) What are the ham prefixes for Tangier, Sarawak, Cyprus and Fiji Islands?
- (4) Name three Princes who have been famed as ham operators, with their respective call-signs.
- (5) What were the call-signs of the

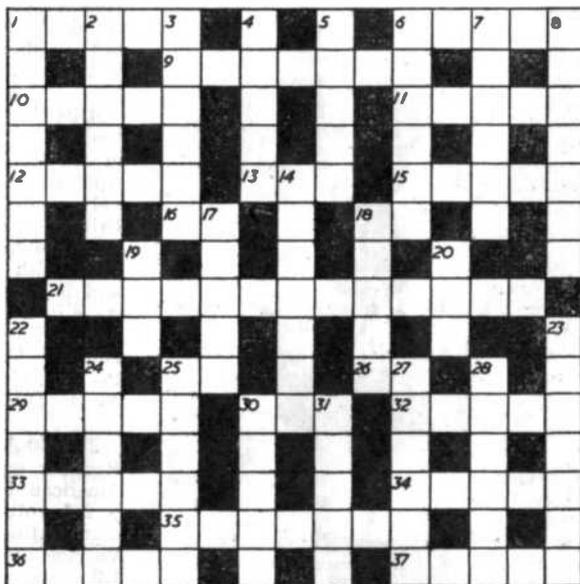
following expeditions: (a) The Ghatti expedition to the Belgian Congo, (b) The Macgregor Arctic Expedition, and (c) The Byrd Antarctic Expedition.

- (6) Name the call-signs of three short-wave stations operated, either now or in the past, with religious connections.
- (7) Panama Canal Zone issues two distinctly different prefixes for hams. What are the prefixes and what does each indicate?
- (8) In the past, certain dirigibles carried radio transmitters. What was the distinguishing feature of the call-sign?

(Answers on page 78)

## RADIO CROSSWORD No. 3 By H. Lister

**Clues across:** (1) In amateur stations this is often towards greater efficiency. (6) Well represented at Radiolympia. (9) One means of SW reception. (10) Used in some capacitors. (11) What you see on the television screen. (12) See 24 down. (13) Key men? (15) Helps in turning out good work. (16 and 18) New Army branch (abbrev.). (21) QSL's. (25) South American prefix. (26) African prefix. (29) This "match" is for aeri-als. (30) Some cells are. (32) Ohms. Amps., etc. (33) Noise this is low in good receivers. (34) A magnet will. (35) This is the camera for televi-



sion. (36) Coils are, usually. (37) These circles are of interest to the student of propagation.

**Clues down:** (1) 3 Megohm is such a value for a grid-leak. (2) In regard to shocks, you don't. (3) Signals often travel over such paths. (4) Your interest, and mine! (5) Even if it is a "rare" country you should find it here. (6) Contacts on push pull P.A. coil. (7) 9 across does. (8) Ideal site for a field day—or perhaps not! (14) Hardly the chap to "fix" a grid

leak. (17) Well-known batteries. (18) Wavelength unit. (19) See 23. (22 and 20) A.F. superimposed on the carrier. (23 and 19) Such materials have a high resistance. (24, 31 and 12 across) Conditions follow this (three words.) (25) . . . and it sometimes worked. (27) Copper this is often used in transmitter coils. (28) This should be removed from the mains. (30) But current this has no connection with sanitation! (31) See 24.

(Correct solution next month)

# Component Review.

STANDARD TELEPHONES & CABLES, LTD.

**W**E are informed that among the range of transmitting valves now being manufactured by this well-known firm are many types which are particularly suited to the needs of amateurs. Several of these are exact equivalents of popular American types which are no longer available in this country, and we give below brief details of a few of the available types.

**4052-A.** This is an R.F. Pentode having a maximum anode dissipation of 60 watts,

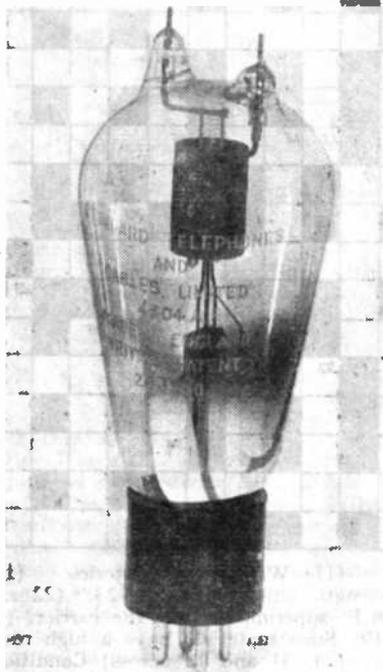
and is an exact equivalent of the American type RK20. It can be used with anode voltages up to 1,500, and is fitted with an American five-pin base. The Thoriated Tungsten Filament—7.5V. at 3A.—ensures an exceptionally long life, provided the maker's specified ratings are not exceeded.

**4074-A.** This valve, the subject of this month's cover illustration, is a Double Triode fitted with an indirectly heated cathode, and has characteristics identical to those of the American RK34. It is an ideal valve for low power V.H.F. working, with brief characteristics as follows: Heater Voltage—6.3 volts at 0.8 amps. Anode Voltage—300. Peak Current—100 mA. Maximum Anode Dissipation—10 watts. Maximum Frequency—250 Mcs.

**4304-C.** An H.F. Triode for operation at frequencies up to 100 Mcs., at full ratings or 300 Mcs. at reduced rating, and an exact equivalent of the American 304-B. This valve can be supplied with a standard British four-pin base or alternatively with an American medium four-pin base. It is fitted with a Thoriated Tungsten Filament, and is particularly suitable in the output stage of a transmitter. Brief characteristics are: Filament Voltage 7.5 volts at 3.25 amps. Maximum Anode Voltage—1,250. Peak Anode Current—0.1 amp. Maximum Anode Dissipation—50 watts.

**2V/400-A.** A Half Wave Mercury Vapour Rectifier equivalent in all respects to the American type 866. The filament voltage is 2.5 volts at 5.0 amps., and the maximum ratings are as follows: Peak Inverse Voltage—10,000. Peak Anode Current—1.0 amp. Average Anode Current—0.25 amp.

The above are only a few of the many types of "Standard" valves available for amateurs, and we hope to include another selection in a later issue. Full information concerning these valves may be obtained direct from the manufacturers, Standard Telephones & Cables, Ltd., of Oakleigh Road, New Southgate, N.11, or from their London stockists—Tele-Radio (1943) Ltd., of 177 Edgware Road, W.2, and Webb's Radio of 14 Soho Street, Oxford Street, W.1.



4304-C H.F. Triode

# Club News of the Month.

## BRITISH SHORT WAVE LEAGUE

### Birmingham Chapter:

The Annual General Meeting of the Chapter was held on January 7th at the "Hope and Anchor Hotel," Edmund Street. It was decided to give the Chapter a name, and it will henceforth be known as The Birmingham & District Short Wave Society. Officers were elected for the forthcoming year, rules formulated, and membership fees were fixed at 7/6 per annum for those over 21 years of age, and 5/- per annum for those under 21.

Further general meetings will be held on the first Monday of each month, commencing at 7.45. Although subsequent meetings will be held at the Hope and Anchor Hotel, there are no facilities for filing records, etc., so that the Headquarters of the Birmingham district will be at the President's home. (T. Burton, BSWL 709, 147 Clements Road, Yardley.)

Secretary: G. Hodgkiss, BSWL 1938, 30 Townyn Road, Moseley, Birmingham, 13, Glasgow Chapter:

For some time past, the Scottish Representative has been trying to organise meetings in or around Glasgow, but unfortunately luck has not been with him. It would be much appreciated if Glasgow readers would contact T. Jack, BSWL 1309, "Loanhead," Greengairs, Airdrie, Lanarks.

**Liverpool Chapter** (Liverpool and District Short Wave Club):

The third meeting of the above club was held at St. Barnabas Hall, Penny Lane, on the 9th of January. T. W. Carney, G4QC presided and the future policy was decided upon. The club premises consist of three rooms, one of which is to be converted into a workshop.

Secretary: T. W. Carney, G4QC, 9 Gladville Road, Aigburst, Liverpool, 17.

### London Chapter:

Meetings were resumed after the Christmas recess, on January 7th and are being held weekly. The rendezvous is still Senior Street School, Paddington, W.9, meetings commencing at 7.30 every Monday evening. Regarding the proposed meetings in South London, readers are invited to contact the local Representative, F. O. Keeling, BSWL 1770, 14 Pinnell Road, Eltham, S.E.9.

Secretary: N. Stevens, BSWL 1039, 53 Madeley Road, Ealing, W.5.

### Watford Chapter:

A local BSWL Chapter has now been formed in this district and is holding regular meetings. At a recent meeting officers were elected, membership fees fixed, and various other matters decided upon, including future policy and activity. Full details of activities may be had from the secretary.

Secretary: R. W. Halsey, BSWL 285, 7 North Approach, Watford, Herts.

## EDGWARE SHORT WAVE SOCIETY

At the 9th Annual General Meeting of the Society it was decided to rename the Edgware Short Wave Society. The new name is the Edgware and District Radio Society, and meetings will, in future, be held weekly on Thursdays. The financial position shows a considerable increase in funds, due to the careful handling of 3HT, the Treasurer. Membership now stands at 56, with many members still in the Services. 2QY was thanked for his Circular Letter Budget which he kept going throughout the war. The Committee were thanked for past services and after nominations were taken for new committee, and voting completed, it was found that the previous committee was re-elected unanimously as follows:—President: L. Gregory, G2AI; Vice-President: R. Radford, G2IM; Chairman: P. A. Thorogood, G4KD; Treasurer: W. Pope, G3HT; Secretary: P. Mugrue, G6PM; Experimental Section Manager: A. Anderson, G2QY; Society Journal: R. Filkin.

New "workshop practice night" is held on Wednesdays at Mr. Welling's specially built shack.

Secretary: P. A. Thorogood, G4KD, 35 Gibbs Green, Edgware.

## SLADE RADIO SOCIETY

This society is not exclusively devoted to short wave radio, but there is a growing interest in short wave working, particularly in the field of DF tests which are proposed to be made on 58 Mcs. and 1.7 Mcs. The outbreak of war interrupted the society's arrangements to build its own transmitter, but as soon as circumstances permit work will begin on the station.

Meetings are held on the fourth Friday of each month at Broomfield Road, Slade Road, Erdington, commencing at 8 p.m.

Secretary: L. A. Griffiths, 47 Welwyndale Road, Sutton Coldfield, Birmingham.

**SOUTHEND & DISTRICT RADIO AND SCIENTIFIC SOCIETY**

The society is now holding regular fortnightly meetings at the Art School, Victoria Circus, Southend. The society has recently celebrated its Quarter-Centenary, and in the short time that activities have been resumed old and new members have been rapidly increasing the post-war membership, and it is hoped that the total will soon reach the 130 which the society was proud to possess before the war.

Whilst constructing new equipment, many members are bearing in mind the cup presented for the Best Workmanship Displayed by an amateur member at the society's Annual Radio Exhibition. The society is proud of the fact that the name of the Editor of Short Wave News is inscribed on the cup as the winner for the year 1937.

The transmitting licence, G5QK, has been re-issued and a sub-committee are now considering plans for portable activities during the summer months. This committee would appreciate views and suggestions from any other societies who co-operated in portable days before the war. Any new societies who would like to have details of the summer programme are invited to write to the Secretary.

Secretary: J. M. S. Watson, G6CT, 23 Eastwood Boulevard, Westcliff-on-Sea, Essex.

**THE WORLD FRIENDSHIP SOCIETY OF RADIO AMATEURS**

According to the Annual Report, issued recently, it appears that, although great work has been accomplished by supporters, the Society must make a bold bid to increase membership. It has been decided to offer two prizes to the members who enrol the greatest number of newcomers, the membership drive running until Saturday, April 27th. Minimum number of new enrolments to qualify is five, and in the event of a tie, the contest will continue for a stipulated additional period.

The Society appeals for a lady secretary to take over the Ladies' Section. This section will soon be re-started, having been suspended for the duration. The only qualifications are (a) a certain amount of spare time, (b) some experience in dealing with correspondence, and (c) a genuine interest in the work of the Society.

Secretary: A. H. Bird, G6AQ, 35 Bellwood Road, Waverley Park, London, S.E.15.

**(RESONANT LINES.—**

Cont. from page 64)

was popular for off-duty use, and oddly enough considering it was the Army it was quite "drawing room." It ran *A* for 'Orses, *B* for *Mutton*, through to *L* for *Leather*, *O* for a *Pint*, *Q* for the *Nine-pennies*, *R* for *Mo*, *T* for *Two*, *U* for *Me*, finishing *Z* for *Breezes*. Some anonymous wag started it and it had quite a run before dying a natural death.

**SUNSPOTS.** I suppose most fans were amused to read of this "new radio phenomenon" in the popular press, who seemed unanimous in agreeing on their "newness." Many of these reports were apparently the work of writers intent on making the most of an interesting news item, rather than in remaining factual. Actually sunspots have been observed and charted for centuries, and it was in 1925 when the potentialities of the short waves were becoming recognised that their effect on communications was first noted.

At intervals since then they have seriously affected short wave communications and February, 1941 was perhaps the most marked occasion, with almost complete obliteration of radio and cable services. At that time there were responsible reports of most unusual effects from America, even to the extent of the tripping of power circuit relays!

*Benevo Yap*

**ANSWERS TO HAM QUIZ**

- (1) The suffix "P" was added to the call.
- (2) VE6 calls are given to Training School Stations, VE9 to Experimental Stations, and VE10 to "Amateur Broadcasting Stations."
- (3) EK, VS5, ZC4 and VR2.
- (4) Prince Mohamed Abdel Moneim (SU1AM), Prince Vinh-San (FR8VX), and Prince Faisal Ghazi (YI5KG).
- (5) OQ5ZZ, OX2QY, and KC4USA (USB and USC).
- (6) HCJB, Quito; HVJ, Vatican City; and W1XAL (now WRUL), Boston.
- (7) K5, for US Army Personnel; NY, for US Navy Personnel.
- (8) Call-signs consisted of five-letters, such as DENNE (Hindenburg).

(MAILBAG.—Cont. from page 74)

Dear Sir,

I put down your first number with a sigh of satisfaction; at last we are to have a magazine for short-wave men alone, and not cluttered up with television and stroboscopes. Pray keep it that way.

I have no criticisms whatever to make; but perhaps a few comments would not come amiss from one who must be one of the oldest of SWL's, dating back to the days when we used to accomplish fine tuning by walking steadily towards, or away from, the receiver (that reminds me, I must get a new coherer).

Firstly, please never allow yourself to neglect the constructor; quite 85 per cent. of short-wave men like to build their own rigs. Hardly anyone realises the intense and widespread interest that exists in radio construction.

Secondly, for the love of Mike, no receivers in matchboxes, child's moneyboxes or toothpaste tubes; neither are we interested in variable condensers made from used razor blades.

And thirdly, let's go all out for some really new SW circuits; do you realise that every circuit appearing in the radio press for years might have been published in 1936 and probably was?

Anyway, Mr. Editor, please accept my sincere congratulations and thanks; carry on with the good work, keep on as you started, and you'll please all of us.

Fraternally,

R. A. Clee, MRSGB, BSWL 1688  
(Shepherds Bush, W.12.)



Dear O.M.'s,

Very pleased to receive No. 1 issue of the magazine. I hope the "News" will flourish and I shall look forward to seeing in its pages useful data for the ordinary "ham" in the way of modern circuits and aids to satisfactory transmission and reception from time to time. It is the "little man" using low power and simple apparatus who counts. All the very best of luck in your efforts,

Yours sincerely,

A. H. Bird, G6AQ, BSWL 374  
(Nunhead, S.E.15).

**DISCLAIMER.** In view of certain statements which have been made to them, the proprietors of this magazine—trading as The Short Wave Press—wish to make it quite clear that they are in no way connected with any other firm whatsoever, either in the radio or any other industry.

## RADIO TERMS ILLUSTRATED



Distorted Output.

## LONDON EXHIBITION

An exhibition of radio controlled missiles is on view at the Science Museum, South Kensington, as part of a larger and most interesting exhibition of German Aircraft and equipment. Visitors to this exhibition should make a point of viewing the adjoining exhibits provided by the G.P.O., detailing the various stages in the preparation of quartz plates for frequency control from the raw quartz crystal, and a working replica of the quartz-controlled clock recently constructed by the G.P.O. for the Royal Observatory, Greenwich.

(BROADCAST NEWS.—

Cont. from page 62)  
peated at frequent intervals.

An unidentified station announcing as Santiago de las Caballeros was heard on about 6810 kcs. around 0130 with an R6 signal, but considerable CW QRM prevented recognition of call-sign.

### ● Acknowledgements

The writer wishes to thank M. Bamford, BSWL 1680, of Cheshire, and Roger Legge, Jr., BSWL 1830, of Washington, U.S.A., for information supplied and incorporated in this article.

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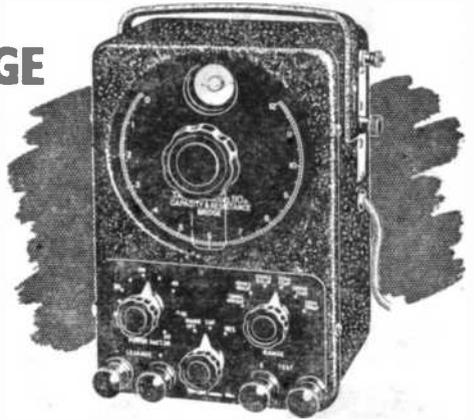
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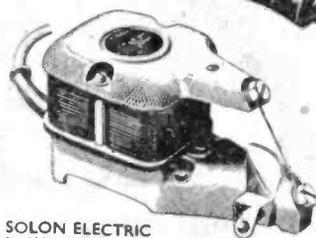
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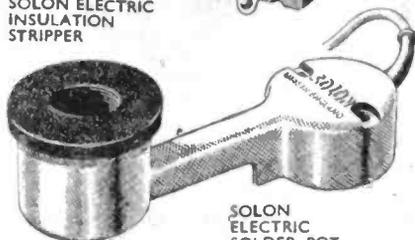
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