

SHORT WAVE NEWS

Vol. 2 • No. 5

MAY, 1947

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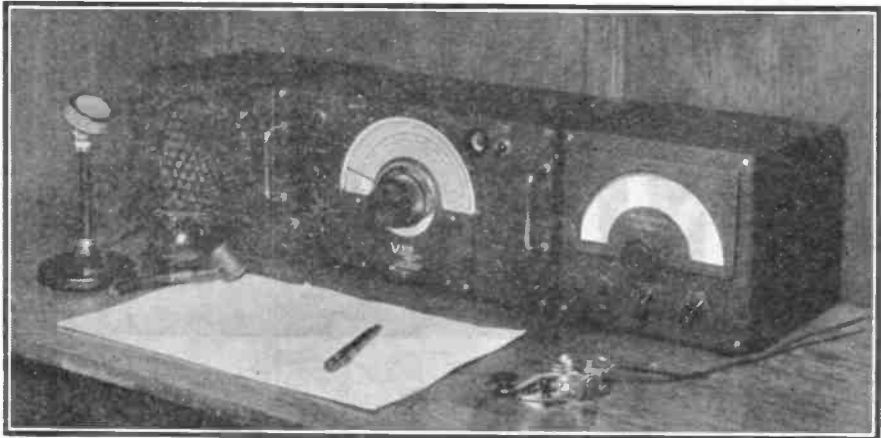
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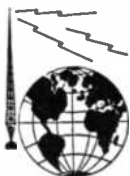
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Short Wave News

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May, 1947

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Asst. Editor : W. NORMAN STEVENS, G3AKA

Advertisement & Business Manager : C. W. C. OVERLAND, G2ATV

EDITORIAL

On Reporting

LETTERS received by us from broadcasting stations indicate that far too many SWL reports fall well below the standard required to be of any practical value. Too many listeners send reports of utter uselessness and too many think that "veries" are the only thing worth considering in short wave listening.

Before we go any further read these "shining examples" sent to "Radio Australia":—

Example 1: Report on sigs. of VLB9. Heard on 31.2m. at 1515-1540 GMT on Dec. 23, 1946. Strength QSA5 QRK R7-8 with QSB to R8-7. QRM (if any) from Italian Tr. Transmission received: News, brass band music and choral item. Wx here: Rain. Rx: Communications SW3, home built. Notes: Please send me your QSL card *this time.* (Our italics).

Example 2: Radio BLA8. Rx. Ecko 4-tube. Reporting Reception: Fairly good on 31m. band at 1530 on 12/12/46. Sigs. QSA3 R5. Remarks: weather wet and frosty. Gales in sea areas. Pse QSL.

What sheer rubbish! The "weather" described in example 2 certainly corresponds to the report! Incidentally, example 1 was sent out by a County Representative of a British society! Another sample remark, a typical one, was . . . "Your QSL card should have been sent to me as I held your station for over 15 minutes."

Nauseated? So are we. What value is such drivel to any station—except to fill the waste paper baskets. One would gather from the attitude of these "experimental listening stations" that the sole object a station has in going on the air is to enable it to distribute QSL cards to all and sundry. Most stations know they are getting out, but a large number of SWL's seem to think it a miracle of science that they hear such stations on their "3 valve communications receivers." Many of the powerful stations have been good friends of the SWL in the past but frankly this attitude is on the

wane. This undisputed fact must be faced squarely: *If reports generally do not undergo a pronounced improvement then the day is in sight when QSL cards for the listener will be discontinued.*

In other words, a selfish section of the fraternity is jeopardising the SWL's hobby, and it is up to every one of you to make sure your reports are up to the mark, otherwise . . .

Far from opposing reporting, regular readers know us as energetic champions of the SWL's, but we are greatly distressed by the increasing evidence of mass-reporting—the cause of scrappy information—in our midst. Some readers may say that they only send brief reports but get back a fair number of cards. That may be so, as most BC stations either verify or they don't. The fact remains that such reports are still useless. Many stations have now ceased to verify due to the reports received not justifying the expense of providing cards. How many other stations will follow suit? That matter rests entirely with the SWL's.

What constitutes a good report? We cannot delve too deeply into the subject in this Editorial but here are some pointers:

- (a) Read, *and re-read*, the chapter on reporting in "Annual."
- (b) Use our reporting forms—or failing that make your report equally as informative.
- (c) Always send, on separate sheet of paper, a sufficiently detailed extract of programme to enable station log to be accurately checked.
- (d) If you *must* send a SWL card then send a REAL report as well. The information contained on a SWL card is totally inadequate.

Reports based on the above notes and to the standard prescribed in the "Annual" will be of value to any station.

No mention has been made of amateur stations, but the same principle obtains. Send in a report that you would appreciate if the position were reversed.

Next month will appear an important announcement of direct interest to all ISWL members. We are starting on a campaign for better reporting!

W.N.S.

V.H.F NEWS

THE FULL STORY OF THE PAoUN-ZSIP ACHIEVEMENT

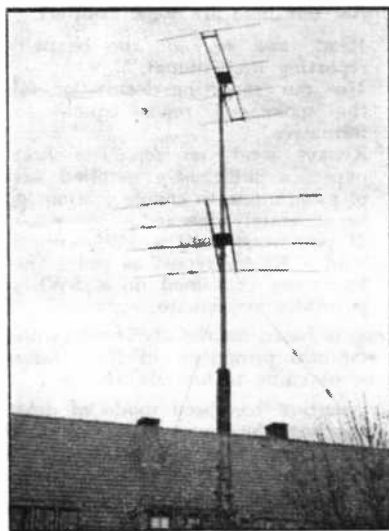
OUR "flash" last month that PAoUN's 50 Mcs. signals had been heard in S. Africa, will have given readers a hint that VHF conditions have peaked up considerably. So far, no further ionospheric DX has been reported, but your conductor enjoyed a very exciting week-end at G6DH's recently when it looked as though a 60 Mcs. G/PA "tropo" contact might be made. Conditions were just not quite good enough however. 6DH is carrying out daily tests with PAoUN and PAoUM; checking conditions several times a day. A VHF transmitter on the Philip's factory at Eindhoven and the French Television transmissions are both checked as additional indicators of conditions and with the hard and consistent work these stations are putting in on the band, we feel sure that when the right conditions do occur, the opportunity will not be missed.

Now for the full story of PAoUN's S. African propagation. He writes:—"PAoUM had been testing with ZSIP for a week or

so previously. One day he told me that he had worked Ed. Tilton, WIHDQ, and Ed. said that the MUF to S. Africa was very high in March and that there was a good chance to make a contact. Ed. said he was already keeping the headlines open in "QST" to mention it. So that opened my eyes and I asked PAoUM if he agreed if I tested together with him with ZSIP. He said OK, so there I started. I don't know the exact date, but for about one week we tested without results until that fatal Wednesday, 26th of March. I did not hear ZSIP on the usual 28 Mcs. schedule times at 1230 and 1300, so thought conditions were very bad. No other 28 Mcs. signals—not even ZBIAB—were to be heard. Having altered the automatic sender, I decided to give it a try. I went off to work telling the XYL to turn off if any of the meters went down to zero. The XYL usually checks conditions every half hour, but being busy and conditions seeming bad, did not bother that afternoon. At 1430 she switched the 50 Mcs. rig off as the grid meter of the final was pointing to zero—due in fact to a fault in the meter. So at 1530 she found the 10 metre band busy talking about PAoUN and found out that I had been heard in Capetown during an hour at S9. So she phoned my laboratory and I got the news at 1600. I did not realise it at first and went off slowly but gradually I realised our trials had succeeded and I rushed home, but was too late to make a cross-band QSO. On Thursday we tested again, the MUF being reported up to 48 Mcs. Friday it was 49 Mcs.—near success! Saturday I came home just about 1230 and listened to ZSIP. He invited us to come on 6 metres because the band was open as he had heard a navigational beacon on 51.2 Mcs. So I switched on the Tx and ZSIP came back on 10 metres saying he was receiving me S9 and would I please come on phone. We worked duplex for about half an hour making three stops for ZSIP to listen for PAoUM and other stations. But he heard nothing else but my signals. After 1300 we changed over to CW until 1320 when the signals faded out."

Our illustration shows PAoUN's beam aeriels. The top one is the four element 50 Mcs. beam, which is about fifty feet high and can be rotated from the shack by cable. It is fed by 70 ohm feeder. The dimensions are similar to that used at WIHDQ and described recently in "QST." The lower beam is a four element 28 Mcs. one and it is unique in that it is supported by a salvaged tank ball bearing fixed around the pole! The top beam is supported on a bicycle fork and both beams can be rotated independently of each other.

The excitement at 6DH's started when he heard PAoUN's 60 Mcs. signal at 2200 GMT on 11th April. No contact was made,



50 Mcs. beam at PAoUN which put signals into South Africa. See text for details.

but the tests mentioned above have been in operation since and it is now just a matter of being on when the right conditions exist for the making of the first post-war 60 Mcs. G/PA QSO. 6DH wonders whether a 60 Mcs. G/PA QSO has ever been made before. Anyone any definite information? The Paris Television transmitter is on 46 Mcs. and the VHF Tx on the Philips Building is on 43.2 Mcs. Both are very good checks on "tropo" conditions between this country and the Continent. The boys over there are using our television transmissions for "tropo" checks. VHF activity is increasing rapidly on the Continent—particularly in Holland. PAoUM, PAoUN, PAoNK, and PAoHQ are all active on 50 Mcs. or 60 Mcs., Dutch amateurs being licenced for both these bands.

The aurora showed up again on April 17th. It was clearly visible at the writer's QRA and it was observed by 6DH at Clacton whose description of it closely followed the course of events as seen in the Midlands. A bright greenish white "glow" was seen in the N.E. at about 2130 GMT. It was quite steady in intensity and there were none of the usual "streamers" and banks of light usually associated with the aurora. It increased in extent until at 2200 GMT it appeared to be right overhead. It had faded out by 2230 GMT. The first short-skip conditions were noted on 28 Mcs. that day. 14 Mcs. signals had a very noticeable flutter on them that evening and faded out entirely later in the evening giving a band which was quite dead even the next morning. No reports of auroral reflected 60 Mcs. signals are to hand, but 6DH noticed a signal with a T6 note on 43.2 Mcs. received with the beam pointing N., and he heard two fluttery phone carriers on 60 Mcs. with the beam N.

The Month's Conditions

Tropospheric. Conditions have improved greatly since the anti-cyclone which began on April 9th, and formed first over the S.E. of England. It gave 6DH his first contact with 2XC again this year. G2TK in Scarborough, heard 6DH on April 10th, and on the 11th, 6DH heard PAoUN.

2XC reports that conditions have been above average since April 10. Conditions to the Devon area in particular have been very good, far better than they were to the north. He has been working good G—DX again with numerous contacts over the 100 mile mark. For those who like the scientific side of VHF work—and it is surprising to find how many there are in this category—2XC sends the following data for one particularly good evening:—

Ht ft.	Temp. F.	Humidity	Refractive Index
		o/o	(n-1) x 10
440	43	83	326
870	46	76	318
1020	49	?	?
2300	46	67	302
3700	42	70	287
5200	37	42	258
6800	35	36	242

He writes:—"A little simple arithmetic will show that the decrease in refractive index is about twice as rapid between 3700 ft. and 5200 ft. as at other levels and it was presumably from this region that reflections were occurring. It was under the above conditions that I worked 5BD and heard 2IQ. By the way, 326 in the refractive index column, of course, means 1.000326 for actual index."

Ionospheric. PAoUN 50/28 Mcs. with ZS1P on March 28th. Nil else, but sporadic E. should be showing up shortly.

Midland Area Monitor Station Report

Shortage of space has made it necessary to abbreviate N. W. White's (G3IS, 59 Eastlands Road, Rugby) report. Sorry Norman.

The following "firsts" have been made by 6YU:—2BJY (West Bromwich), 2VA (Harrow), 4LU (Owstry), 5US (Camberley), 8TO (Leamington), 8WV (Hanslope) remarks on the poor conditions during March, but managed to work 5US, 5BY, 6VA, 8JV, 4IG, 6LK, 6XM and 8UZ.

8UZ has made first contacts with 2BJY, 2COP (Litchfield). He has heard 4JJ (Barnsley) and 3LN (Kings Norton). He was "in" on the auroral reflection of March 8th, hearing 2XC with beam pointing N. 3APY was also "in" on it, hearing 5BY peaking max., with his beam N.E., and he noticed that the notes were very rough.

G6MN of Worksop is active on 59.03 or 59.610 kcs. He reports contact with 6YQ (Liverpool). The latter is QSO nightly with GM3OL.

Southern Area Activity Report

2XC sends us the following report on activity in the South:—There has been a fair measure of activity recently, although it is still too much confined to the late evenings. At present 2NM, 6KB and myself are running a sked at 1630 GMT, while 2YL and 8LY appear to have a sked at 1750 BST. 2VH and 5U5 can frequently be contacted around 1900 GMT, but other than these no one seems active until after 2100 GMT. The following have been contacted during April and will give an indication of

(Cont. on p.118)



A concert studio at Polskie Radio.

Around the Broadcast Bands

Monthly Survey by
"MONITOR"

All times are given
in G.M.T.

(For DBST add two hours; for
EST subtract five hours; for
AEST add ten hours.)

YOUR scribe would appreciate more reports from overseas readers and especially our I.S.W.L. Country Representatives. QRA for all matter for this column should be sent to "Monitor," c/o "S.W.N." to reach me by the 5th of the month.

Condx. have been rather erratic at your scribe's QRA, with VK being the most consistent country. Now for the month's news.

● Africa

Ethiopia. Letter veri from Radio Station Addis Ababa says: ETA on 15074 kcs. Power 7kW. At present off the air on BC, but is on the air daily on CW working Mackay Radio, New York, on the hours of 0600, 1800 and 2000. Hopes to be on the air daily soon using voice transmission. (Pearce).

● Australasia

Australia. Sidney Pearce reports BC to British Isles at 0700-0800 over VLB6 15200 kcs. in parallel with VLA9 21600 kcs. Latter carries programme. to 0815. On Saturdays VLA6 15200 kcs. and VLC10 21680 kcs. carry BC instead. He has heard VLA4 11770 kcs. operating at 2030-2300, VLC4 15320 kcs. 2030-2330, VLB6 2115-2330. On Saturdays, gives DXers Programme from 1700.

N. Moor of Pocklington reports VLB9 9615 kcs. VLA8 11760 kcs. and VLG9 11900 kcs. with extremely strong signals at 1452-1545.

Latest schedule as copied from Radio Australia's DXers Programme of April 12th which comes into effect on April 13th is as follows:—

To British Isles: 0615-0730: VLA6 15200 kcs., VLB8 21600 kcs. (not Sats.), VLG9 17840 kcs. (from 0645-0730)

1500-1545: VLA6, VLC9, VLG10 11760 kcs. and a new transmitter in VLB4 11810 kcs. from 1500-1600.

1745-1915: VLA4 11770 kcs., VLC11 15210 kcs.

Changes in times are due to DBST coming into force on April 13th.

To New Caledonia and Pacific: 0745-0845: VLC4, VLG3 11710 kcs.

To Forces in Pacific area: 0830-1300: VLA6. 0830-1245: VLB8. 1030-1300: VLG10. 1200-1245: VLC4 15320 kcs. 0855-1030: VLC4. 0855-1200: VLG10.

To S.E. Asia (French prog.): 1300-1335: VLA6 (Siamese at 1335-1400).

To N. America (East Coast) and S.E. Asia: 1300-1415: VLB 9540 kcs., VLC7 11840 kcs., VLG10 (1300-1400).

To India and Forces: 1400-1500: VLA6, VLG10. 1430-1500: VLB4, VLG9.

North America (West Coast): 1600-1700: VLA8.

South Africa: VLG4: 11840 kcs.

Forces: 2115-2300: VLA6, VLC9.

N. America (East Coast): 2300-0045: VLG9, VLA9 21600 kcs.

Forces: 0200-0400: VLB5 21540 kcs., VLG9, VLG6, VLA9 (carries prog. Sats. and Suns.)

Special sports programme is transmitted over VLB5/VLG6 from 0315-0730 on Sats.

N. America (West Coast): 0445-0545: VLA5 15320 kcs. (another new transmitter), VLB8, VLG6 (latter two not used Sats.)

South Africa: 0445-0545: VLC9.

Reports on these new times of transmission are requested and should be sent to: DX Editor, "Radio Australia," Melbourne. DX programme is now given Sundays instead of Saturdays. Mail-Bag programme is now given Sundays and presented by Eric Rowell. Your scribe had a

letter answered over the air on March 16th. We still await the QSL!

No tuning note is used in the transmissions beamed to the British Isles now there being a 10 minute recording of "Waltzing Matilda" on a Vibraphone, according to a new reader, H. A. Meyers of London, whom we welcome to this column. VLG7, 15160 kcs., has been heard by your scribe with R9 plus signals Q5 at 2155 with 3 chimes and Inland News after news relay from BBC at 2145. Closed at 2200. VLB6 logged R9 Q5 at 2215 with very consistent signals. VLC11 is badly jammed by CKCS on same freq. when giving 2030 transmission. VLA4 heard with colossal signal at 2100 although now suffers bad QRM. The RX at your scribes QRA is a Phillips SH4 with DB20 Pre-Selector. Aerial $\frac{1}{2}$ Wave Windom N.N.W-S.S.E.

I often wonder why more readers do not use Pre-selectors as signals can be brought up by around 3 R points with them in use. But still it depends on the RX firstly!

New Zealand. Arthur Cushen of "down under" says ZLT10 has been testing on 6150 kcs. at 1800 so keep a careful watch on this frequency. Power is 7 kW.

● North America

Canada. Schedule of CBC transmissions effective from March 1st: CKNC 17820 kcs.: 1400-2300. CKCX 15190 kcs.: 1400-1700. CKCS 15320 kcs.: 1705-2300. (Stations CKLO and CHOL discontinued). These transmissions are beamed to British Isles and Europe. (Pearce).

U.S.A. (West Coast). Sidney Pearce reports a fine log of Californians in the following and heard on a "Sky Champion" Rx: From 2145: KNBX 15340 kcs., KWID 17760 kcs., KCBF 17850 kcs., KCBA 15230 kcs. From 2230: KCBR 15330. Between 0700 and 0800 KGEX 11730, KGEI 11790, KCBA-KCBF 9750, KCBR 9700 and KNBX 15250 kcs.

● South America

Argentina. T. B. Williamson of St. Albans lists a station believed to be LRM "Radio Aconcagua" Mendoza on 6180 kcs. and heard at 2330 with R5 Q3 signals. Announced as LR1, LRX, LRX1 and call given as "Radio El Mundo." (Yes, O.M., this was LRM relaying prog. of LR1. LRA2 is now discontinued I believe. Power is 10 kW.)

Brazil. PRA8 Radio Clube do Pernambuco, Recife 6015 kcs. heard at 2100 relaying "Radio Inconfidencia." Signals were R8 Q3. PRI3 "Radio Inconfidencia" Bello Horizonte 5995 kcs. R6 Q3 at 0050. PRE9 "Ceara Radio Clube" Fortaleza 6105 kcs. R7 Q4 at 0315 giving Samba prog. ZYB7 Sao Paulo 6095 kcs. R8 Q4 signals at 0000.

Give call as "Radiodifusora Sao Paulo." (These Brazilian notes come from T. B. Williamson).

Chile. CE622 Santiago heard on 6220 kcs. at 0325 with weak signals being R4 Q2-3. Suffers bad QSB. Call is "Radio Sociedad Nacional de Minería." (Williamson).

Columbia. HJCD Bogota 6160 kcs. R8 Q5 at 0200 giving call as "Emisora Nueva Granada." (Williamson).

Ecuador. HC4EB "Radio Manta" Manta R6 Q3 at 0050 operating on 6870 kcs. with some CW QRM. Recordings of waltzes. (Williamson).

Venezuela. YV6RD "La Voz de Guayana" Cuidad Bolivar on 6205 kcs. heard R7 Q4 at 0000 with music and call. (Williamson).

● Asia

Ceylon. Radio SEAC Colombo now heard on new frequency of 21470 kcs. Good signals with re-broadcast of Test Matches from Radio Australia at 0700-0810. Signs on at 0650 with frequent mention of "You are in tune with the Forces Broadcasting Service Radio SEAC Ceylon on 21470 kcs." From March 16th BC to British Isles on Sundays will be from 1730-1930 (due to DBST). Now heard better on its 15120 kcs. channel than on 7185 kcs. in parallel. The 15 Mc. channel is very good afternoons until close at 1700. (Pearce).

Lebanon. FXE Beirut 8036 kcs. sends QSL to H. A. Meyers and states following schedule: 0500-0615, 1015-1300, 1530-2100.

Iran. "Radio Teheran" Teheran EPB 15100 kcs. heard R8-9 with news in English daily at new time of 1215. (Pearce).

India. VUD4 Delhi 9670 kcs. with excellent signals Tuesdays. Has programme of recordings at 1630-1730. (Pearce). Good signals from AIR on their 9570 and 11820 kcs. channels are reported by N. Moor.

Indonesia. "Voice of Free Indonesia" Jokjakarta 11000 kcs. R6-7 at 1600-1630 with BC to British Isles and Europe of news, music, commentaries, etc. Gives call as YHM and W/L as 27.27m. Suffers strong CW QRM also from Russian fone station. Schedule also gives other English BC as: 0900-0930 to Pacific and Australia, 1030-1230 to Australia and S.E. Asia, 1400-1430 to S.E. Asia and India. The Dutch BC 1530-1600 is also heard by Sidney Pearce, who sends in this news.

● Central America/ West Indies

Dominican Republic. T. B. Williamson, our Latin American "expert," sends in a good log in the following:

HI1N Trujillo 6245 kcs. R7 Q4 at 0135. Call "Emisoras Unidas"; HI1Z Trujillo 6310 kcs. R8 Q4 at 0140. "Broadcasting

Nacional"; HI1X Trujillo 6385 kcs. R6 Q4 at 0150. "Radiodifusoras Oficiales"; HI2A Santiago 6785 kcs. R7 Q4 0200 "La Voz de Re-eleccion y La Voz del Pueblo"; HIT Trujillo 6635 kcs. R3 Q3 at 0210. "El Hit del Aire"; HI9T Puerto Plata 6175 kcs. R6 Q3 at 2300. "Broadcasting Tropical"; HIL Trujillo 6185 kcs. R7 Q4 at 2345. No slogan. The Rx at Williamson's QRA is a Phillips Commercial by the way.

El Salvador. YSN San Salvador 7315 kcs. heard R5 Q3 at 0100. Still has good music modulation but voice very weak. Gives call as "La Voz de Democracia," states Williamson, who has also heard these other Salvador stations: YSR San Salvador 6270 kcs. at 0105 R6 Q3 signals with news in Spanish till 0105, Pepsicola advert. and call "La Voz de el Salvador."

YSU "Radio Mil Cincuenta" San Salvador 6250 kcs. R8 Q4 at 0120 and 0330. Records at 0122 and call.

Nicaragua. YNAO Masaya heard at 0110 on 7413 kcs. but periodically wiped out by WEG with CW on 7415 kcs. Latin music and Spanish announcements.

YNBA Managua 8190 kcs. heard with musical programme and news at 0045 R6 Q3.

YNOW Managua 6850 kcs. R7 Q4 at 0100 with Tangos and call "Voz de America Central."

YNPS Managua 6760 kcs. R5 Q3 at 0110 playing march and giving call as "La Voz de Managua."

YNBH Managua 6540 kcs. R5 Q3 at 0200. Commentary on some game and gave call as "Radio Panamericana."

All YN stations reported by Williamson.)

Guatemala. TG2 Guatemala City 6620 kcs. R6 Q3 at 0010 with news items interspersed with a few bars of "Stars and Stripes for ever." Gave call as "Radio Morse."

TGRA? 6255 kcs. heard at 0200 with hetrodyne from YSU. (Williamson).

● QSL's Received

EPB has obliged your scribe, while Sidney Pearce has had a good mail in ETA (via Airmail), YHM (also by air), VONH, VUD3, VUD5, Radio SEAC (11mc.), CE1173, OLR4A, OLR2A (now sends cards), ZFY, VLB2, VLB9, OTC2. G. K. Sutherland from VUD7, KCBA, VONH and VLB9. A. Levi TAQ.

● Acknowledgements

T. B. Williamson BSWL1635 (St. Albans, Herts.), Sidney Pearce (Berkhamsted, Herts.), H. A. Meyers (Golders Green, London, N.W.11.), N. Moor (Pocklington, Yorks.), Arthur Cushen (Invercar-

gill, New Zealand), A. Levi ISWL/GI 38 (Belfast, N. Ireland), G. K. Sutherland (Llanfairfechan, N. Wales).

Also all those who have sent in reports, etc., which are held over until next month.

DEDICATORY PROGRAMME FOR THE I.S.W.L.

Make a note of this date—JUNE 8th!

Yes, make a note please, O.M's, for on this date "Radio Australia" radiates a special programme dedicated to the I.S.W.L. The complete details are as follows:—

Date: Sunday, June 8th. Time: 1700 GMT. Frequencies:

VLA8, 11760 kcs. and VLC11, 15210 kcs.

We want all the reports we can get on this special transmission, so please do your best to co-operate. DO NOT send reports to "Radio Australia" direct but to I.S.W.L. Headquarters. We will send off all the reports in one batch by air mail. The deadline for reports sent via HQ is first post on Thursday, June 12th.

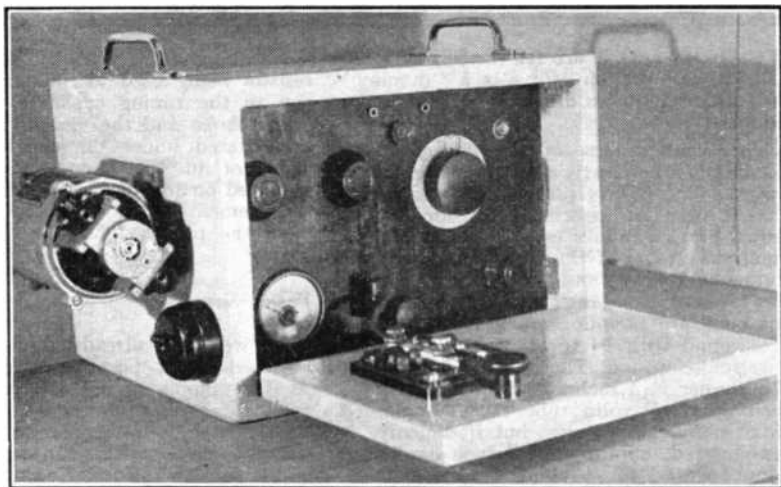
(VHF NEWS—Cont. from p.115)

active stations in Southern England. 2MV (Coulston), 2NH (New Malden), 2NM (nr. Chichester), 2UJ (Tonbridge Wells), 2VH (Southsea), 2YL (Walton on the Hill), 3PW (Maidenhead), 4DN (Battersea), 4IG (Beckenham), 5AS (Kingston), 5MA (Ashted), 5PY (Clapham Park), 5US (Camberley), 6AG (Bexley), 6FO (Penn), 6KB (Henley), 6OH (Ascot), 8JB (Havant), 8LY (Basinstoke) and 8TS (Farnham). G5CM and G5MR of Bognor are active.

Frequency Modulation.

The RSBG announced recently that FM may now be used in the 28 and 60 Mcs. bands. In view of the advantages of this system, we feel sure that these facilities will be used by some of the more experimentally minded amateurs without delay. We are particularly anxious to hear of any stations using this system either on 60 Mcs. or 28 Mcs. Talking of FM, the BBC recently placed a contract with Marconi's Wireless Telegraph Company for a 25 kilowatt FM broadcast station. This will be the first FM broadcast station in this country. Its site has not yet been decided upon and it is anticipated that it may be two years before it will be in regular operation. The Radio Industry Council has been asked to arrange for suitable receivers to be available by the time this station is due to go on the air.

**A
PORTABLE
TRANS-
CEIVER
FOR
FIELD
DAYS**



Introduction

THE rig described herewith has been designed primarily for portable work, but it can be run from a normal power pack and thus used as a complete, compact, station. The original was designed for use on the 1.7 Mcs. band only and in order to keep the cost as low as possible, home made coils, chassis, etc., were used. However, if desired, the 3.5 and 7 Mcs. bands could be covered by using plug-in coils.

The rig consists of a separate single-stage transmitter and a two-stage receiver, both built on a single chassis. The filament supply is common to both and by putting by-pass capacitors in the filament leads of the detector valve, AC can be used without any trace of hum appearing in the Rx. When operating portable, the filament current may be drawn from the accumulator supplying the rotary converter or from a separate battery.

The Tx derives its H.T. from a rotary converter when portable. A normal 350 V., 50 mA., power pack is a satisfactory alternative when using the rig in the shack. The Rx H.T. is drawn from an H.T. battery for both portable and fixed working. The current consumption of the Rx is so small that it is not worth while trying to take its H.T. current from the converter.

The valve line-up is an 807 oscillator/amplifier in the Tx, a 6J7G as detector and 6C5 as audio amplifier in the Rx.

The general arrangement of the rig can be seen from the illustrations. Both Tx and Rx are built on the same chassis and no difficulties from stray capacitances have been encountered. The chassis and panel

were built up from plywood, dimensions being:—Panel 12in. by 8in. Chassis 12in. by 8in. by 3½in. The whole was stained with black shoe-leather dye and varnished, a most attractive finish thus being obtained. Any standard size chassis would of course do just as well, except that capacitor C1 is "alive" and must then be insulated if the panel is a metal one. Also, if the rotary converter is mounted on the side of the cabinet as shown, a metal chassis has a tendency to rattle—a difficulty not encountered with a wooden one. It is quite worth while mounting the converter as shown, as the rig is thereby made very portable, the switch to the converter can be placed conveniently to hand and long leads carrying H.T. are avoided—a particularly useful feature when operating under portable conditions.

Construction

The construction is pretty straightforward and most details can be seen from the illustrations. The controls on the front of the panel are:—Tx anode tuning capacitor C1; Tx aerial tuning capacitor C2; Tx aerial socket; Rx aerial socket; Rx tuning capacitor C1 slow-motion tuning control; reaction control. The small flash lamp bulb shown between the aerial sockets is that shown at A in the Tx circuit diagram and is a flash lamp tuning device for the Tx aerial system. It can be left permanently in circuit and is a most useful indication of how the RF is "going up the spout." The other pilot lamp shown is connected to the filament leads. At the bottom, a 50 or 75 mA./meter shows Tx anode current. The

two sockets next it are for the key and the knob in the bottom centre is a "dummy" used as a handle to draw the rig out of its cabinet.

The arrangements of the various components can be clearly seen from the photographs. The 807 is placed underneath the chassis with its associated resistors, capacitors, etc. A Brooks crystal holder is seen mounted on top of the chassis and the coil former and anode and aerial tuning capacitors are also above the chassis. The details of the coils are as follows:—Both L1 and L2 are wound with 14 turns of 22 SWG DCC wire, close wound. The outside diameter of the former is 3 inches and the coils are $\frac{3}{4}$ inch apart. Paxolin tube can be obtained from many radio stores, but if difficulty is encountered, obtain some 3 inch cardboard tube as used for packing pictures, maps, etc., from the local art shop. Well doped with shellac varnish, this makes an excellent substitute.

C1 and C2 are old broadcast receiver type variables of .0003 μF or so capacity. It is as well to use as high a value for C2 as is available, so that widely differing lengths of aerial wire can be brought to resonance.

Before going on to the description of the Rx, there is one further point about the Tx. Some of the better types of 807 will not oscillate readily unless some feed-back is applied to the grid. No difficulty will be experienced in getting the Tx working, but the circuit will prove sluggish when keying and will not "follow" the key readily. Should this occur, matters can be readily corrected by joining a piece of insulated wire to the grid and twisting a few turns of the free end round the anode lead as shown at B, making sure of course that the two wires are insulated from each other. In our own case four turns proved sufficient and no further trouble has been experienced from the crystal refusing to "start."

The construction of the Rx requires a little comment. The main tuning capacitor is a 60 μF Eddystone Microdenser. A 100 μF mica preset is wired across it to act as a band-setting capacitor, and to give sufficient capacitance. The aerial coupling capacitor is also a 100 μF mica preset. The coil is wound with the same wire as that used for the Tx. Former is $1\frac{1}{2}$ inch outside diameter. Coil data:—L3, 9 turns, close wound, spaced $\frac{1}{2}$ inch from L4. L4, 40 turns, cathode tap taken 4 turns up from "earth" end.

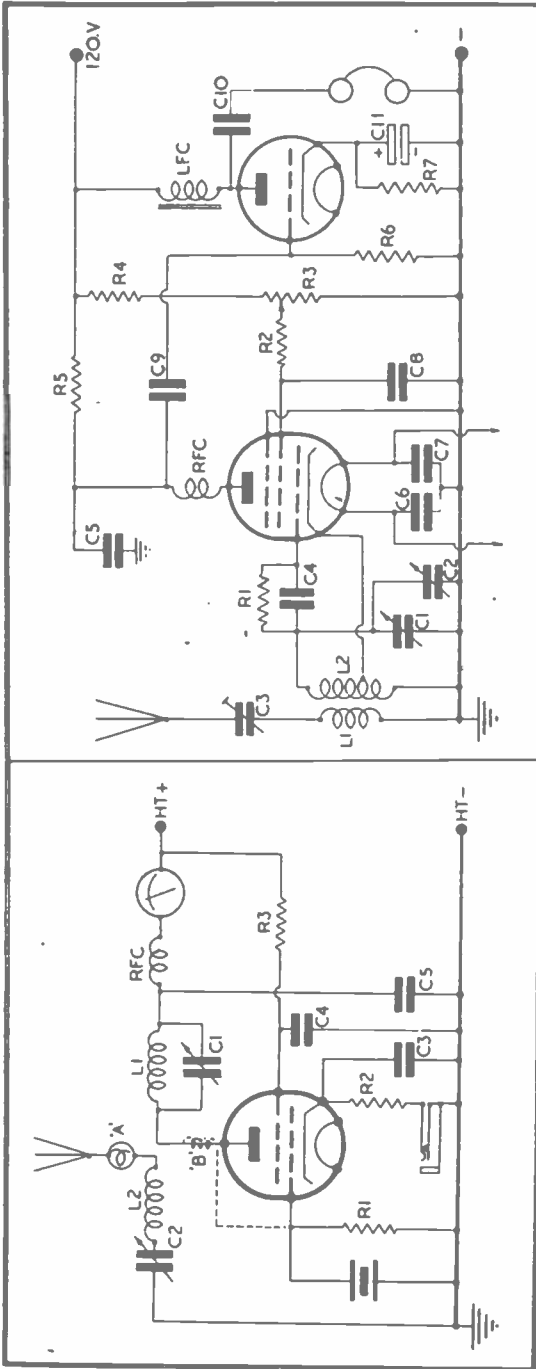
The slow motion tuning dial shown is one of Eddystone's pre-war slow motion driving heads, but any small slow motion dial could of course be used if the one shown is not available. The 6J7 is the rear-most of

the two valves, the grid capacitor and resistor being used to connect the top grid cap to the tuning capacitor directly. The audio choke and the various resistors, etc., are located under the chassis. The 2 μF capacitor in the phone circuit is shown mounted on top of the chassis. The general arrangement and layout can be clearly seen from the photographs.

Power Supplies

As we have already said, this rig can be used either portable or in the shack. A H.T. supply of 350-450 volts, 50 milliamps, is required for the Tx and a filament supply of 6.3 volts 1.5 amps. for the Tx and Rx together. This can be supplied from a filament transformer, when the rig is used in the shack. The Rx H.T. supply is derived from a 120 volt H.T. battery. For portable work, the Tx H.T. is obtained from a rotary converter and that shown gives 480 volts at 40 mA., which is more than adequate for the requirements of the 807. Its input is 12 volts, 4 amps. and it can thus be run conveniently from a car battery. The problem of how to obtain the filament current when operating portable can be solved in two ways. Either another 6 volt car battery can be used, or the 12 volt car battery can be used by tapping the 6 volt requirement off. If this is done, it may be found—if the battery is of low capacity or "down" a bit, that on switching on the rotary, the filament voltage drops so low that the Tx will not work. If this is the case, then another battery must be obtained. In testing out this rig, we took both current for the rotary and for the filaments off our car—which has a 12 volt system—by simply tapping on to the car battery without removing it from the car. With the battery in normal working order, we were able to obtain both voltages without any trouble. If you use this system, be very careful to mark your tapping clips "12 volt" and "6 volt," so that the wrong one is not connected to the wrong terminal on the car battery. Otherwise your valve filaments will also "go up the spout"!

Just exactly what type of rotary is used will depend on what can be obtained. There are some excellent Government-surplus rotaries on the market these days. Some have 6 volt input, others 12 volt and the output varies from type to type. Something which will give from 350 to 450 volts at about 50 mA. is the type to go for. That shown cost us 30/- which seems reasonable enough.



TRANSMITTER

- C1 See text
- C2 See text
- C3 .01 μ F
- C4 .001 μ F
- C5 .001 μ F
- R1 50000 \sim 1 watt
- R2 350 \sim 1 watt
- R3 50000 \sim .5 watt
- L1/L2 See text

RECEIVER

- C1 .0001 μ F.
- C2 60 μ F.
- C3 .0001 μ F
- C4 .0001 μ F.
- C5 .0001 μ F.
- C6 .01 μ F
- C7 .01 μ F
- C8 .01 μ F
- C9 .05 μ F
- C10 2 μ F
- C11 4 μ F elect.
- R1 5 M \sim
- R2 15000 \sim 1 watt
- R3 50000 \sim Pot
- R4 15000 \sim 1 watt
- R5 60000 \sim 1 watt
- R6 .5 M \sim
- R7 1500 \sim
- L1/L2 See text

The switch shown is a 5 A. tumbler switch wired in the primary of the rotary. There is no need to put a switch in the H.T. side. If you wish, you can fix another switch to cut the filament current, but we rely on disconnecting from the car battery when finished operating.

Aerial Arrangements.

As a Marconi type of aerial system is used more or less any length of wire can be used, but for best results as long a wire as possible is advised. The same aerial can be used for both Tx and Rx, by simply plugging into either the Tx aerial socket or the Rx socket as the case may be. This arrangement was found to be simpler and quite as effective and quick as an aerial change-over switch. Also this arrangement allows for a separate receiving aerial if desired. The aerial terminates in a banana plug which fits the aerial sockets.

Tuning Up

Connect up the filament leads to the battery and see that the filaments are

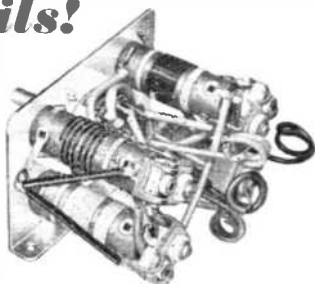
alight. Plug aerial into the Tx aerial socket. Connect up rotary leads to battery. Switch on the rotary and the mA./meter should read current. Rotate the anode tuning capacitor until a "dip" is obtained on the mA./meter. Now rotate the Tx aerial tuning capacitor until the flash lamp bulb glows. It will be necessary to readjust the anode tuning a little as the aerial tuning is varied. By suitably adjusting each, obtain the maximum brilliance in the flash lamp bulb consistent with ready oscillation of the crystal. To go over to "receive" simply switch off the rotary and plug aerial into the Rx aerial socket. Reaction is controlled by means of the potentiometer, and the value of C3 should be adjusted to give as good a signal strength as possible consistent with smooth reaction. C2 will have to be adjusted to locate the 1.7 Mcs. band so that the bandsread capacitor spreads it nicely over the dial.

This rig has been extensively tested and has proved most satisfactory. From the Midlands, contacts have been made with GM, GW and stations on the South Coast and those who have worked G2UK on "top band" during recent weeks will have heard this rig in operation.



For the past 15 years we have devoted our energies exclusively to the manufacture of Transformers and Chokes. Modern transformer technique is essentially the province of a specialist. Our technical department will be pleased to assist you in your transformer problems. Illustrated above is one of our varied range of styles shown in our catalogue—Free on request.

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FOUR SHORT WAVE BAND COIL UNIT for One or Two-valve battery-operated receiver covering frequencies from 31 Mc. to 1.4 Mc., with air-cored coils. Each coil consists of aerial, grid and reaction windings. Size: 3½x2½x2½ in. (as illustrated) Price 30/-

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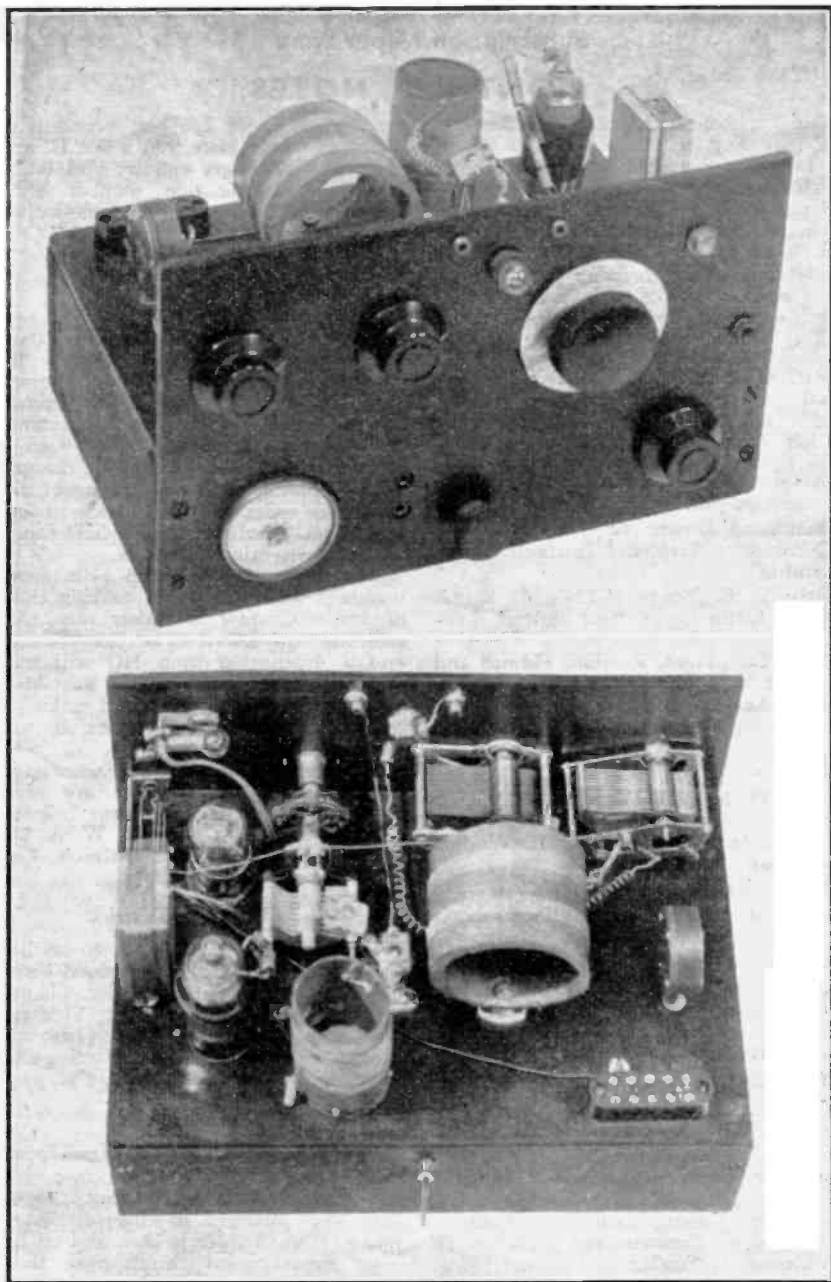
Telephone:

Abbey 2244

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Top) View of the transceiver with cabinet removed. (Bottom) Rear view of transceiver.

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Subscription 1/- per annum

MONTHLY NOTES

FOR the benefit of new members we are listing below a complete list of I.S.W.L. Services and addresses of sectional managers. As the I.S.W.L. is just six months old, we feel that the progress made in the shape of members' facilities is highly satisfactory. We would appreciate suggestions from members for new services and we would also like to hear from members willing to supplement existing services by taking over additional sections.

CORRESPONDENCE BUREAU. (International pen-pal centre): Walter Davies (G256), "The Bungalow," Kingsley Fields, Nantwich, Cheshire.

TRANSLATION SERVICE. (To translate short messages and letters):

German and Dutch: C. Jakes (GM34), 83 Adamson Crescent, Townhill, Dumfermline.

French: T. E. Tonge (G124), 67 March Road, Little Lever, near Bolton, Lancashire.

Oriental Languages, Russian, Finnish and Magya: M. Preston (G380), 2a Brenda Road, London, S.W.17.

Spanish: W. A. Impett (G477), 76 Wills Crescent, Park Avenue, Hounslow, Middlesex.

BC STATION QUERY SERVICE: (For queries on unidentified BC stations and data on current schedules): C. L. Wright, c/o BM/BTP, London, W.C.1.

QSL BUREAU: (Incoming and Outgoing Bureau for BC and amateur stations reports and QSL's): I.S.W.L. QSL Bureau, 57 Maida Vale, London, W.9.

I.S.W.L. EXCHANGE HOLIDAY SCHEME: (An exchange holiday scheme with European amateurs): Details on application to HQ.

TECHNICAL QUERY SERVICE:

Home-constructed Receivers: T. Vallard (G6), 58 Hawthorn Road, Willesden Green, London, N.W.10.

Test Gear, Oscilloscopes and Television: A. H. Burkill, 28 Raglan Court, Willesden Green, London, N.W.10.

Mechanical Construction: A. G. Anderson, GM3BCL, 87 Braemar Place, Aberdeen.

All of the above services are entirely free to members, with the exception of the Outgoing sections of the QSL Bureau for which

an annual fee of 2/6 per section is made. Members should note that a S.A.E. must be enclosed with every enquiry and that their I.S.W.L. identification number must be stated. If further details are needed, please write HQ.

Social Activities

South East London

The I.S.W.L. Chapter in S.E. London is now making considerable progress, though the main trouble is still the obtaining of a good permanent club room. At the meeting of March 21st, a small working committee of three was elected as follows: Two of the older members were elected on the grounds of experience and one younger member elected in order to represent the under-18's. Mr. W. A. Martin, the CR, holds the position of non-voting chairman.

At the meeting of April 11th, four new members were welcomed, making the total of active Chapter attenders now 15. The meetings are described as "very chummy" and a deputation from HQ will soon be making a call to confirm all this! Members are busy building up gear and making plans for expansion of the Chapter as soon as circumstances permit.

Members in S.E. London who have not yet contacted the Chapter are earnestly requested to do so, and thus help in the good work. Your CR is Mr. W. A. Martin, 61 Silvester Road, East Dulwich, London, S.E.22.

Uxbridge District

The Middlesex CR is soon to hold a preliminary get-together in or around Uxbridge, to discuss the setting up of a Chapter. A number of members are giving their support but even more co-operation is needed. Please write to Leslie M. Harris, 93 Long Lane, Hillingdon, Middlesex.

Birmingham

Plenty of support is reported from Birmingham, though once again the problem of a permanent club room is being encountered. Can any member in the district help, please? The Chapter is keen and on its toes—we expect great things once the club room has been found. Enquiries etc. to: Malcolm B. Taylor, 136 Alvechurch Road, West Heath, Birmingham 31. (Telephone Priory 1020).

A group of "lads" at the I.S.W.L. Khartoum Chapter. Judging from the QSL's on the wall, plenty of DX is being worked by ST2AM.



CO-OPERATION INVITED

The following Representatives are doing a fine job in getting the I.S.W.L. organised in their areas and ask for support from every member that is in a position to help.

Swansea: (general appeal for support from Welsh members and especially from Swansea area with a view to forming a Chapter): D. Hughes, "Lyndale," Cefn, Cwmllynfell, Swansea.

Chelmsford (support needed for proposed Chapter): Walter C. Mills, 3 Elm Cottages, School Lane, Broomfield, Chelmsford.

Romford: Chapter proposed and general support needed): P. F. T. Redman, 108 St. Andrews Avenue, Elm Park, Romford.

Oldham: (Chapter): G2FAY, 62 Chestnut Street, Chadderton, Oldham.

Manchester: (Chapter): E. D. Hebron, 9 Argyle Avenue, Manchester 14.

Darlington: (Chapter proposed. Quite good support, but more needed): Martin Harrison, 36 Southend Avenue, Darlington.

Scotland (Contacts wanted with any GM members): J. Thomson, 15 Chambers Street, Innerleithen, Peebleshire.

In addition to the above, most of our other CR's and TR's are anxious to hear from their local members. Why not drop your local Rep. a line tonight? He will be pleased to hear from you.

Club Directory

Since our last "Club Directory" was published, several alterations have taken place with regard to meeting dates and several new clubs have sent along details of their activities. We hope to include a revised "Directory" in the next issue, but meantime here are the amendments.

BLACKPOOL: This club now holds meetings on the 1st and 3rd Tuesday of each month at 7.30.

LIVERPOOL: Meetings are now held every Tuesday night instead of Wednesdays. A new Secretary has been appointed and his address is M. B. Morgan, G8JU, 17 Gerneth Close, Speke, Liverpool, 19.

SUNDERLAND: A new club has been formed here in the Sunderland Radio Society. Meetings are held every fortnight on the 2nd and 4th Wednesday of each month, at 16 North Bridge Street, Sunderland, commencing at 7.30. The

Secretary's address is S. A. Herbert, G3ATU, Roker House, Roker, Sunderland.

ABERDEEN: The Aberdeen Amateur Radio Society is now meeting at Room 70, Forsyth Hotel, Aberdeen, every Friday at 7.30. The Secretary will gladly supply further information. His address is A. D. J. Westland, 17, Beaconsfield Place, Aberdeen.

WANSTEAD: Meetings of the Wanstead and Woodford Radio Society are held every Tuesday at the "Wanstead House," The George Green, Wanstead, London, E.11, commencing at 8.0. The Secretary is R. J. C. Broadbent, G3AAJ, 24 St. Margarets Road, Wanstead Park, E.12.

CROYDON: The Surrey Radio Contact Club now has a flourishing membership of more than 60. Details may be obtained from the Secretary: L. C. Blanchard, 122 St Andrews Road, Coulsdon, Surrey.

WORLD NEWS

AMERICAN NEWSLETTER from Grove Calkins

At a meeting of the Radio Manufacturers' Association in New York last month, their President, R. C. Fosgrove, stated that two million FM radios are to be manufactured in 1947. Stating that radio prices were too high, he said "with or without FM, good table models will sell for an average of \$50 and consoles will run from \$175 to \$200."

Console radios continue to be hard to get, as the demand still outruns the supply. This was revealed by a check-up last month by the *New York Times*. Table models, says the report, have made considerable gains in stocks and are available for immediate delivery in many types.

The first commercial pocket radio to be seen is the Belmont "Boulevard," a 5-valve superhet. Dimensions are 6in. x 3in. x 3/4 in. Local stations are received at good volume with the ear-phone cord aerial provided (30in. long). Weaker stations also received quite well. The selectivity, because of the RF stage, is better than that of the average 5-valve small radio. By actual experiment, the receiver was found to fit comfortably into a vest pocket.

HUNGARIAN VIEWPOINT from Peter Somssich, HA8S

The Allied Control Commission for Hungary has approved the re-establishment of the Society of Hungarian Short Wave Amateurs (M.R.R.E.), but transmitting licences and the issuing of new call signs will follow only after the ratification of the peace treaty.

Hungarian stations heard operating on the air are illegal, but are not pirates in the accepted sense. All are genuine pre-war amateurs, and may be QSL'd through the society's Bureau. Note that the society has a new HQ, it is getting organised for future activity. The QSL Bureau address is now fixed as:—M.R.R.E. QSL Bureau, c/o Andor Sass, 5 Dohany-Utca 1/c, Budapest.

Myself (HA8S) and Mr. Antalffy (HA4H) are now all set, with two 9-valve receivers, for monitoring any amateur stations from 1.7 Mcs. to 60 Mcs. Any readers wishing for reports from Hungary should send their

requests to HA8S, c/o "S.W.N." The best 60 Mcs. DX heard at time of writing have been OK's.

The new "Radio Budapest" on 555 metres has a power of 50000 watts, and its aerial tower is the highest on the continent. The aerial is an exact replica of the original which was blown up during the war. The power will be increased to 120000 watts as soon as circumstances permit.

NEW ZEALAND NEWS AND VIEWS

from Arthur Cushen

Due to serious electricity shortages in the North Island, all New Zealand stations, National and Commercial, are now on the much reduced schedule of 0900-1100, 1300-1430 and 1830-2230 local time. Power is more plentiful in the South Island but stations here have been closed to prevent North Island listeners not observing the restrictions.

A recent parliamentary decision was to convert New Zealand's local time into permanent Summer Time, thus making our local time now 12 hours ahead of G.M.T. and not 11½ hours as stated in the "Annual."

NEW AMATEUR LEAGUE

A new radio amateur league was recently formed in Tokio for American service personnel. Meetings have been held on February 18th and March 18th at the Dai Ichi Auditorium for the purpose of electing permanent officers for the league and to draw up plans for the future. The name of the society has been decided as the Far East Amateur Radio League and those persons having a bona fide interest in amateur radio are eligible for associate membership. Those holding valid licences and who applied for membership before April 1st have been granted charter membership.

(From cuttings of the "Pacific Stars and Stripes" sent in by Anthony W. Gilbert.)

CQ LONDON READERS

The I.S.W.L. is now well over 900 strong, and this growth brings with it, as you can guess, ever increasing correspondence and general clerical work.

We should be grateful, therefore, for any offers of assistance from I.S.W.L. members who would be willing to lend a hand. We are unable to enjoy the customary weekly half-day off at the office and we are here until 7 p.m. every evening, including Saturdays! Write, 'phone or, better still, call on us at any time convenient to yourselves. Thanks, O.M.'s.

Resonant Lines

G 5GQ has been back on the air at odd intervals, but at the moment of writing he is busy rebuilding to reduce his former Shack-size assembly to "corner-of-the-Drawing-room" dimensions to suit modern flat life. He will be remembered by many readers as the founder Editor of the "S.W. Magazine," which, under his guidance, rocketed to a high circulation. Assisted by the late S. W. Clarke (2AMW) and in a much lesser degree, myself, a new note in radio journalism was struck, and innovations such as HAVE YOU HEARD?, DX CORNER, STATION PANELS, HAM BANDS, ROUND THE SHACKS, etc., were brought into being. It is gratifying to read a recent tribute to the "features, styles and ideas developed" and now so faithfully followed. It is better to follow good design than to originate inferior, but odd that the originality should be claimed by an interest which has but little link with the originators!

Conference

In the early days most of these ideas and plans (I suppose you could call it a "conference") were thrashed out over a pint in the local from where we would adjourn to 5GQ's shack and put them into practice. 2AMW was responsible for the lay-out, etc., was continually fussing over short ends to fill in the odd corners—he was dead keen on symmetry and of course, there were no paper restrictions at that time. On occasions suitable pieces written for "Reflected Waves" would disappear for this purpose, unless the flow of short ends was supplied. 5GQ was a fast worker and would dash off an article in record time and then drag me into doing a couple which he expected at equal speed without thinking it in any way unreasonable, even after a night out together. Looking back at them today I marvel how good they are.

He not only managed to reflect his own great enthusiasm into the pages of the Mag. but also infused it into others, and I recall an incident which well illustrates this. A neighbouring BCL called at his house to complain of interference. 5GQ soothed him down, took him in the shack and chatted to him about the amateur movement with such effect that six months later the former BCL was on the air himself.

Converts

There were quite a number of other converts to the ranks of S.W. listeners, experimenters and hams, brought about by the

Mag. At that time the so-called all-wave aspect of BC receivers became the great selling line—beautiful dials, smart cabinets and tuning devices, had just become commonplace and to the ordinary listener the addition of the S.W. band was held out as an attractive novelty. 5GQ was quick to see this and edited the Mag. with an eye to recruiting for the hobby. The mailbag brought fresh evidence daily of the success of this policy. At the other end of the scale he originated the policy of letting radio clubs borrow and try out for themselves all gear designed and published by him. He also personally wrote as the DX Scribe (a nom-de-plume now borrowed by another). It was a disappointment that his other interests compelled him to give up S.W. journalism but maybe he will later be free to spend more time on the air and with his typewriter.

Little Fellows with Big Voices

I suppose many constructors have at some time or the other heard a small amplifier using a beam tetrode of the 6V6/6F6 class, giving a terrific output and had quite a shock to find it was really only a single bottle responsible for it. Later they may have built up something using the same output valve only to find that long before the hoped-for volume was reached, horrible distortion set in.

The reason for the failure to equal the performance of the original they heard is, of course, that they expect to do it by using automatic bias. When big outputs are required the bias voltage must be absolutely stable and it cannot be so when it is developed by a fluctuating current as it is when the bias is automatic. Bigger electrolytics, hundreds of μF 's could be used and would no doubt give a marked improvement, but it can never equal the use of a separate bias supply whether by battery or small power unit.

With automatic bias too, it must always be remembered that the bias voltage comes off the total available anode voltage and this can often represent quite a loss of output—the undistorted power falls away sharply as the anode volts are decreased.

Fuse Rating

It has often been stated that the fuse is the most neglected part of radio gear and this is perfectly true, quite apart from the frequent omission to use one at all! By this it is inferred the question of the selection of the fuse rating is not given sufficient thought, particularly in A.C. power circuits. The standard generally demanded of

(Con. at foot of next page)

RADIO AMATEURS EXAMINATION COURSE

By D. Warner

PART 3: THE VALVE OSCILLATOR

THE subject for this month is the mode of operation of the simple valve oscillator. Most readers will have had some experience of reaction as applied to a straightforward detector stage and will have noticed that when the feed-back (reaction) capacitor is adjusted so as to increase its capacitance a point is reached at which the valve commences to oscillate.

This critical adjustment, at which oscillation commences, is that at which the amount of energy fed back from the anode circuit into the grid circuit just exceeds the amount of energy lost in the grid circuit due to "damping," that is to say, due to

the effective resistance present in the grid circuit.

The way in which oscillation is built up will be made clear by reference to Fig. 1 which shows the circuit of a simple valve oscillator, and Fig. 2 which indicates the variations of grid voltage and anode current in such a circuit.

Referring first of all to Fig. 1, and assuming that the H.T. switch 'S' has just been closed, it will be clear that as the anode current rises it produces an increasing magnetic field about coil L2. Because there is mutual inductance between the anode coil L2 and the grid coil L1, a voltage will be induced in L1. If the valve is to oscillate, L1 must be wound in such a sense that, with increasing current in the anode circuit, the end of L1 which is connected to the grid becomes positive with respect to the cathode.

This positive grid potential causes an increase in anode current which in turn, due to the inductive coupling between L2 and L1, reduces a still greater voltage at the grid, and a further increase of anode current results. This effect is cumulative, and the anode current continues to increase until it reaches a value corresponding to the upper bend in the I_a/V_g characteristic of the valve (point 'a' in Fig. 2).

At this point the rate of increase of anode current is reduced, and since the voltage induced in L2 is proportionate to

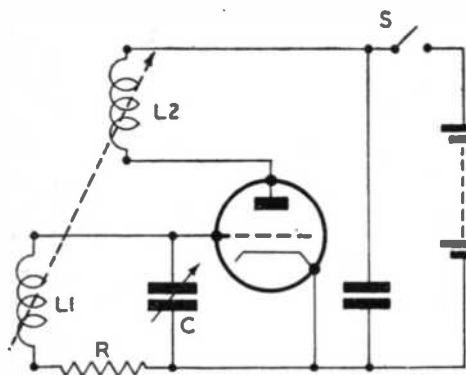


Fig. 1.

(RESONANT LINES—Cont. from p.127)

a fuse is that it shall "blow" when the current rises to 1.75 times its standard value.

In A.C. circuits it is apparent that a set can be switched on numerous times without the fuse blowing, but there is a particular point of the cycle of the applied voltage when the surge rises to roughly double the R.M.S. voltage. The danger of a fuse capable of withstanding such surges is, of course, that the rating may be higher than the permitted overload, when the fuse would allow a serious strain or even damage to the circuit it was supposed to protect.

Amateur, and much professional apparatus for that matter, often includes a fuse of a higher rating than advisable, and as the cost is so small it can only be assumed the reason is due to the inconvenience of re-

placement. The design of fuses has been given more particular attention in recent years and although the newer types are not generally available, they are capable of withstanding initial switching surges (which last only a fractional period) while affording full protection to the circuit. Fuses such as the magnesium and the spring loaded types are examples and no doubt later we shall see them in much wider use.

While They Last

Referring to my recent comments on the changing fashions in radio nomenclature, the Dumb Blonde has decided she would far rather stick to the old terms. Says she still prefers to call it a "perm" in the good old-fashioned way than use the new-rangled "standing waves." C.T.

the rate of change of current in L1, this voltage will also be reduced. This causes a reduction in anode current and a decreasing field about L2, as a result of which the voltage induced in L1 is reversed and the voltage on the grid becomes negative. The anode current therefore falls rapidly and the grid becomes still more negative. This effect again is cumulative, and the anode current continues to fall until it reaches a value corresponding to the lower bend in the I_a/V_g characteristic (point "b" in Fig. 2) when the rate of decrease in anode current is reduced, the grid becomes less negative, the anode current commences to increase, and the whole cycle recommences.

It will thus be seen that the amplitude of the oscillations are limited by the values of anode current corresponding to the upper and lower bends in the I_a/V_g characteristic of the valve.

There are several different forms of valve oscillator, and the positive feed-back from the anode circuit to the input circuit of the valve may be applied in many different ways.

The form of greatest interest to the transmitting amateur is undoubtedly the crystal oscillator, in which a thin slice of crystal, usually quartz, is connected between the grid and the cathode of the

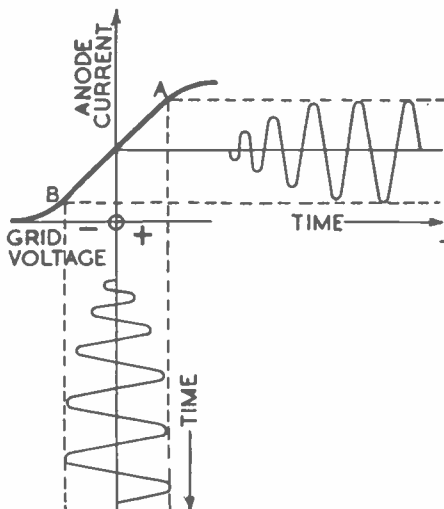


Fig. 2.

valve, and acts as a sharply tuned resonant circuit. Because the crystal imposes only very small losses on the grid circuit; sufficient feed-back can normally be obtained via the anode-to-grid capacitance of the valve.

Station List — Modifications to List appearing in the "Annual"

The latest schedules of the U.S.A. International Broadcasting Stations, show many changes in the previous listings. Here are the details of new channels, channels now not in use and changes of call-sign.

17800, WLWO-WLWK; 15130, WRUW-WRUA/WRUS; 11870, WOOW-WOOC; 11710, WLWK-WLWO; 11830, WCRC-WCBN; 9750, WNRA-WNRX; 9700, WLWL1-WLWR1; 9590, WLWO-WLWK; 9650, WCBN-WCRC.

EAST COAST STATIONS

New Channels: (add to list)

WBOS, Boston, 15250 kcs.; WCBN, New York, 15270 kcs.; WCDA, New York, 15270 kcs.; WCRC, New York, 21570 kcs.; WLWL1, Cincinnati, 9520 kcs.; WLWS2, Cincinnati, 21650 kcs.; WNBI, New York, 15150 kcs.; WNRX, New York, 6190 and 21610 kcs.; WOOW, New York, 9490 and 11810 kcs.; WRUA, Boston, 6040 and 11790 kcs.; WRUW, Boston, 9550 kcs.

Channels not now in use: (delete)

6060 kcs., WCBN; 6120, WOOC; 7250, WNRX/WRUA; 9490, WCBX; 9570, WRUS; 9650, WOOC; 9700, WRUS; 11730, WRUW; 11826.5, WCRC; 11870, WNBI; 14560, WNRX; 15130, WLWS; 15230, WLWL2; 15250, WLWK; 15350, WRUA; 17830, WCBN.

Call-sign changes:

17955 kcs., WLWL1 now WLWL2;

WEST COAST STATIONS

New Channels: (add to list)

KCBA, Delano, 9750 and 15230 kcs.; KCBR, Delano, 11810 kcs.; KGEI, San Francisco, 11790 kcs.; KNBA, Dixon, 21610 kcs.; KNBI, Dixon, 17780 and 21610 kcs.; KNBX, Dixon, 15250 kcs.; KWIX, San Francisco, 15290 kcs.

Channels not now in use: (delete)

17760 kcs., KWID; 15340, KNBI; 15330, KNBX; 15270, KCBR; 15150, KNBX; 11790, KNBA; 11770, KCBA; 9700, KNBI; 9670, KCBF; 9570, KWIX; 7250, KGEX; 7230, KWIX; 6170, KCBA.

Call-sign changes

17770 kcs., KCBR now KNBI; 11900, KWIX-KWID; 9700, KCBF-KCBR; 9490, KNBX-KNBA.

RELAY STATIONS

Add

9610, Algiers I; 7290, Munich I.

An "All Purpose" Power Pack

By Len Miller

THERE are many good reasons why a separate power pack is a desirable feature in the ham shack or workshop. After all, any receiver from the anode of the output valve to the power point is standard, and a separate, permanent power pack enables the constructor to build a new set far more rapidly and cheaply than he would when the mains equipment is an integral part of the receiver. The power pack, if suitably designed, can also be used for furnishing power for auxiliary equipment such as a signal generator, bridge, field-strength meter, pre-amplifier, V.H.F. converter, etc.

The Requirements

The equipment described was designed to supply the necessary power for all types of sets from the modest two valve headphone rig to multi-valve communication receivers, and to allow some reserve for any of such auxiliary equipment as mentioned above.

Briefly the requirements are as follows. The power pack should be capable of supplying a standard 250V. H.T. at anything between 5 to 120 mA. Here lies the first snag. A normal pack which is designed to supply 250V. at 120 mA. will deliver a voltage greatly in excess of 250V. when used on a load of say 10 mA. Even if a compromise is struck and the equipment is designed to deliver 250V. at 60 mA., the voltage may well drop to 200V. at 120 mA., and go up to 300V. at 10 mA. This

is evidenced by the well-known fact that the no-load voltage of any rectifying equipment using a reservoir capacitor will be 1.414 times the R.M.S. A.C. input, as the reservoir will very quickly charge up to the peak input voltage. This capacitor discharges at a rate depending upon the load, or the current taken, the *average* voltage across it being less as the current is increased (for any given capacitance). If the reservoir chosen is a large one, the discharge voltage drop will be less than when a small capacitor is used (for any given load). Consequently the voltage output is higher when a larger reservoir is used.

Controlling the Output

The output of the "All purpose" power pack is controlled (to a large extent) by incorporating a reservoir switching arrangement as shown in Fig. 1. The other important factor in ascertaining the output voltage is the IR drop across the smoothing chokes, and, to a lesser extent, the rectifying valve and transformer. As the power pack is to be a permanent installation, use the best quality that circumstances permit.

The Effect obtained

Using capacitors of 2, 4 and 8 μ F capacitance and chokes of some 250 ohms resistance each, the voltage outputs are in the region of 350V. with 8 μ F, 270V. with 4 μ F, 240V. with 2 μ F and 210V. with no reservoir, at 60 mA. (the .001 μ F capacitor C1 being for the sole purpose of an R.F.

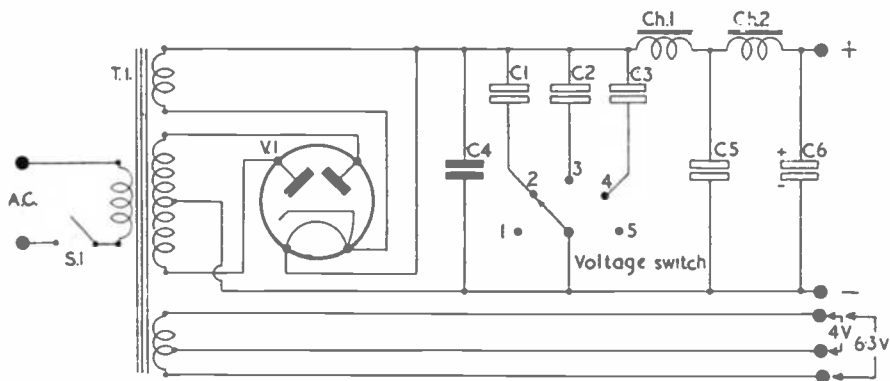


Fig. 1.—Main power pack.

by-pass and to filter out any modulation hum that otherwise may be present).

Position 1 of the voltage switch (no reservoir), being a choke input arrangement, provides an output that does not vary much with different loads, and would normally be used for supplying H.T. for small headphone receivers consuming 10 mA or so, but of course may be used for any purpose up to the maximum 120 mA, the only disadvantage being the rather low voltage output.

Position 2 (2 μ F reservoir) caters for the small receiver requiring some 250V., while position 3 (4 μ F reservoir) looks after the larger receivers requiring 250V. H.T.

Position 4 (8 μ F reservoir) is used for any speaker incorporating a series field energised speaker, when the extra 100 volts or so is required, and for any special apparatus requiring a high voltage, as, for instance a time-base, etc.

For Battery Set Operation

The H.T. battery eliminator equipment shown in Fig. 2 may be incorporated at the discretion of the reader, and provides a very well-regulated and hum-free 100V. plus G.B. If it is built, it may be per-

manently wired in circuit, as position 5 of the voltage switch automatically places it in circuit, and, on any of the other switch positions it is out of circuit. The "G.B.—var." terminal is used for output valve bias, the "G.B.—25V." is for vari-mu bias purposes.

Conclusion

A smaller mains transformer than the type specified (say 80 mA max.) may of course be used if the constructor is confident that this will satisfy his requirements, but the saving in cost is but a few shillings, and the writer would emphasise that the 120 mA. job is well worth while, as two smallish sets can be worked at once if required. There are many transformers on the market now which provide a 6.3V. heater winding tapped at 4V., plus a 5V. rectifier winding tapped at 4V.

It is not advisable to switch the pack on without a load being connected. Connect the set first and switch on afterwards. This does not necessarily apply to position 5, the H.T. battery eliminator position. The resistance bleeder network provide a load, and the battery valve filaments may be switched on and off with impunity.

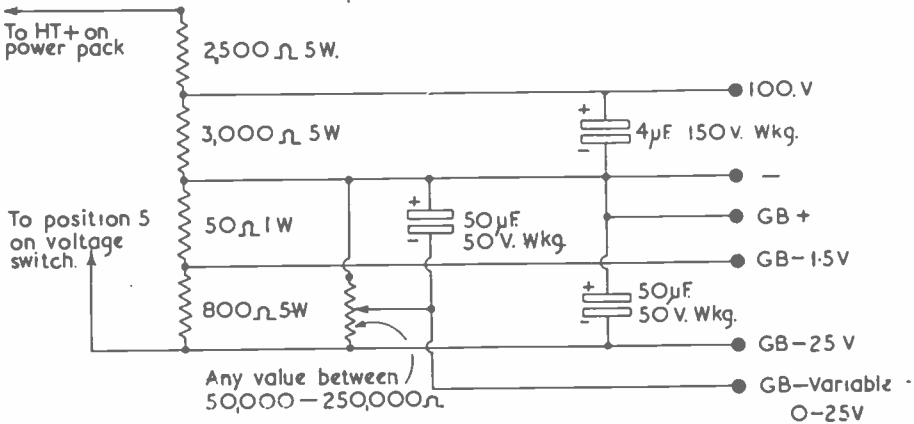


Fig. 2.—Battery Eliminator Equipment.

REPRESENTATIVES WANTED

Our Reps. are doing a fine job in getting the League organised in their areas. Judging from their monthly reports they are all putting in some hard work. Don't let them do ALL the work O.M.'s, and get in touch with your local representative now and offer your help!

If your town is not yet represented why not contact your CR (or HQ) with a view to taking a hand in I.S.W.L. affairs? We also need urgently CR's for the following counties:—Wiltshire, Surrey, Somerset, Staffs., Sussex and Lincs. Applications direct to HQ, please.

ON THE HAM BANDS

Conducted by "CQ"

● Comment of the Month

JUDGING by the number of incorrect call-signs (mostly 'phone) contained in logs sent in to this column, we feel that a few words on the subject would not be amiss. For example: CX2CO has been listed as PX2CO, PX2PO, CX2PO; TR1P has been re-named as PR1B, PI1P, TR1C, etc.; VP4TJ as VP4PJ, VP4GJ, and so on, ad lib.

The reasons include careless listening on the part of the listener and low intelligibility due to weak signals. However, we cannot lay the entire blame at the feet of the listeners, for a considerable number of incorrectly quoted calls are due to the poor enunciation of operators. Too many 'phone stations have bad modulation and too many of the operators talk with plums in their mouths! Less remedial reasons include those operators in foreign countries whose English is not perfect.

The results of logging call-signs incorrectly must be obvious. We wonder just how many hundreds of listener reports have been sent to the wrong station!

The moral of this sermon is to really make sure you have the call-sign correct before entering it in the log book. Never send a report if you are not sure of the call (lots of people do). If you are not getting many QSL's back, check those call-signs in addition to overhauling your reporting procedure.

● 14 Mcs.

Your scribe heaved a great sigh of relief as it became obvious that many contributors have co-operated by weeding out all but the best of the DX calls. Thanks indeed, O.M.'s

Jeff Bowes-Taylor (Birmingham) sends along "a few of the best DX calls," which includes KA1abu (2100), KP4do, VK3cn, 4el; VQ2jc (2125), 5jtw; ZS1co, cx, m, 6fu, dz (all between 1950-2115). On 'phone CO2BK, KO; CX2BC, OA4M, ET3Y, VU2LK (Bombay), VQ4JBC (2030), VK3KX (2230), VS7ES, XE2HY, YS3HL, 3PL (2325); ZC1AL, ZS1U, 2BB.

Al. Slater (Southwick) submits "the more rare and juicy entries in the log book." Best stations heard were J4AAN, J9ANA, KA7GC (runs 1000 watts to a rhombic!), ZC1AL, PK4HB (Medan, Sumatra), XU6GRL and YS3PL. The rest of the "juicy" ones are C1CH (14315 kcs. at 1910), C4JM (14240), HH5PA (14210), KA1ABA (14165), 1AL (14175), 1AW (14225), 1CB (14175), 1SS (14230);

KG6AD (14285), KH6GF (14235), KH6IU (14280), OQ5BW, 5CA; VP2MY, VS1BU, VS7ES, XZ2AJ (14280), ZE1JX. The frequencies given are approximate.

A. H. Onslow (Hove) sends along some very fine data with his first contribution. Since August '46 he has heard 113 countries with 40 verified. He is a great friend of Al. Slater and this pair of DX-ers have competitive listening contests between themselves to keep each other on their toes. The method seems to work! These are the best ones logged:—HC1FG, 1JW, 1OB; KA1AK, 1SS; KH6AF, 6AR, 6CT, 6FT, 6GF, 6HD, 6IU (very fine); KL7GY, KZ5NA, PK4HB, VE7EF, 8AL, 8MN; several VK's including 6RU, 7LZ, 7TR; VQ2AG, 4JBC; VS1AM, 1BU, 2BG, 7ES, 7MB; XZ2AJ, YN1LB, YS3PL, ZL1HY, 1JV, 2BE, 2FF, 3CV, 4GA (good going) and W6ONP/KW6.

J. N. Trye G570 (Nuneaton) has selected as his best for the month CX2AC, KP4AU, PK4HB, PY6AV, 7VA; VP2AD, 4TE; VU2RS, VK2AV, 2AIK; YV6AO and ZS6EU.

Another helpful reader is **Robert Collett** (Birmingham) who omits all Latins and CW stations from his monthly log. His best efforts on 'phone were: KA1ABA (uses 600 watts and 3-element rotary), 1AL (1615), 1TM; KZ5NA (R8 at 0815), K6ETF (on Canton Island. 500 watts. Q5 R6 at 0850), VE8AJ (Q2 R4 at 0730), VK2AAK, 2XG, 4HR; VQ2HC (Q4 R6 at 1750), 4ERR, 4IBC, VU2KB (Q5 R7 at 1945), 2QB; W6ONP/KW6 (Q5 R6 at 1920), ZCiAL (2010), ZL1KJ (Q4 R6 at 0730), ZS2AF, 2BJ (1900). Thanks for the very nice detailed log, O.M.

D. L. McLean (Yeovil) mentions that the long list of ZS's in his March log was due to the fact that he listened almost every evening for them between 1800-2000. He makes a practice of concentrating on given parts of the world and also of reception characteristics at given times. This sort of DX-ing is much more creditable than just haphazard knob-twiddling as the listener learns so much about conditions and what to expect. We strongly advise planned listening and would be pleased to hear what other readers have done in this direction. Mr. McLean's log this month is for reception entirely between 0630-0800 and includes: CT2AB, EA9AI, FA8CF, HC1OB, HI2L, HK3BB, 3BI; J3AAG, KZ5NA, OA4AI, 4BI; OE9AB, OI2KAB, OK4IDT, TI2LR, 2OA, TRIP, UA1AB, 1KBA; VE4IF, VK2AAK, 2AGJ, 2AHA, 2AKF, 2AKS, 2AMP, 2GQ, 2GU, 2NO,

2VC, 2XH, 3BH, 3OP, 3YH, 4NK (New Guinea), 4WF, 7TR; VO4Q, VQ4ERR, W2MMO/MM, ZL1KJ, 2BE, 3CV, 4GO and 23 West Coast W's.

From the U.S.A. comes a fine detailed log from Ken Crandall (New Orleans) heard on his Hallicrafters S-20R. Says he has "several aeriels strung around." The pickings are: J2FOX, 5ABA; K6OQ2, KG6AD, KH6AF, 6IU; W6ONP/KG6, W4KLF/KG6, W9FEZ/J5, XU6GRL, VQ4ERR, VP3LF, 4TJ, 9F; PZ1GP, ZS6DW, ZL2BE, VK's 2AIK, 3EN, GB, IZ, VP, YH, 4GJ, JA. 6RU, LR. Also many D2, D4, PAo and so on. Thanks for nicely laid-out log, O.M.—a pleasure to read. Please keep future logs in alphabetical order. Thanks.

Arthur Levi, GI 38 (Belfast) has heard HK3AR, OA4BR, OQ5AR, 5BA; VK2GU, VP4TE, VQ4ERR, YI2JJ, ZC6DD and ZS6MN.

Welcome to R. Cole, G687 (Grimsby), who sends in his first log. It includes ST2am (1800), VK2fz, oi, fx, tg, 4do, el, ul; VQ5jtw, VS6aa, 7mb; VU2bf, cw, km, ws; ZL1mr, 2fa, 4ck. A few VS6's are now on officially O.M. and 6AA is definitely genuine.

Tom Williamson has a very fine 'phone log which includes C1CH, 1SM; EL2A, 5B; HH2ME, J2AFX (Honsu), KA1ABA, 1JM; W5KUG/KA, K6ETF/KC6, KZ5NA, PZ1H, VE6JP, 6OA; VK4NK (New Guinea), 7TR, 7XA; VP2AB, 2LA, 4TE, 4TR; VS1AK, 1BU, 7ES, 7GR; VU2BK, 2BQ, 2QB; XE3L, XZ2BA, YN1HB, YS3PL, ZC6DD, 6MF; ZL1KG, 1KJ, 2AJ, 2BE, 2CX, 3EA, 4AO, 4FO (nice work); ZS2BB, 6AL. Also a very fine list of 31 VK's!

Finally . . . J. W. Hughes, G30 (Rochdale), VU2LU, FN6KA (French India. Any data anyone?), ZS6U, TG9RC, XE3L. Mr. Hughes says that in 95 reports outgoing he has only had 6 replies . . . D. E. Hayes, G323 (Hoddesdon): HK1B, KZ5NA (not MA, O.M.), OX4AVC (?), TI2OA, VQ4JC (surely VQ4JBC?), ZS2BJ . . . R. Masters, G407 (Portsmouth): J2FOX, KH6CT, OX3GC, VE6SM, 7AAW; VK2AD, 2ADJ, 2AHA, 2ANL, 2CP, 2GU, 2ID, 2NM, 2PE, 3KX, 4AI, 4NK; ZL4FK . . . Bill Harris, G42 (Woodbridge): CR7BB, HH2PB, LI2BO, OQ5DW, PK4NK (surely VK4NK?), VP2GB, 4TE, 4TJ; VE7JM, 7AJ; VK2AA, BG, GU, XG, 3BZ, ZL, 7TR; VU2KB, KW; VQ2SU, 4ERR; ZS1CN, 6FT, DW, FC, U; ZC1AH . . . E. R. Filer, G178 (Worcester): ET3Y, EL5B, PK4HB, VK2XG, AIK, AML, AGU, DW; VP9F, VU2GB, KB, QT; VS1BU, YI2CH, ZS1U, 2BJ, 6LF; ZD1WB (data please)

. . . Martin Harrison (Darlington): HH5PA, KA1ABA, OQ5BR, VE7EF,

8MA; VK4HR, 4KH, 7TR; VQ4JBC, VS7ES, 7GR; VU2DG, 2KB; YI2AH, ZC6MN, ZL1CD, ZS2CI, 6EU, 6LS . . . Thanks also to Peter Drake, G. A. Ensor, A. E. Lincoln, Walter Savage, Bryan Hayes and others for logs received.

● 28 Mcs.

D. L. McLean reports the band with very strange conditions with R3-4 signals until around 2330. The times given in his report are mentioned as they are rather unusual. He mentions that VK/ZL has been heard consistently between 2130-2330 and that after 2000 the W6's were often R9. The pick of the rather lengthy log is: CR9AG (R9 at 1540), HZ1AB, J9ANA (1540), KV4AD, NY4FC (2045), OQ5AR, 5BA, 5BI, 5CE (2120); VK2GU (2230), 3CP (2240), 6DD (1250), VP4TF, 4TK (2300), 6FO, 6MR, 6YB, 9F; VQ3EDD, 4ERR (2050); VS9AB, VU2AJ (1740), 2LR; W6VKV/I6 (1900), XZ2DN (1620), 2YT, YI2CA, YN3DG (2240), ZC6WP, ZD4AB, ZE1JB, ZL3KH (2130), 3LE (2310), 4AT (2300), 4GM (2205); ZS1AX, BV, CN, P, T, U, 2AF, 5BS, 6CM, CT, DW, EG, GO and IG. We also note dozens of Latins and West Coast W's. Altogether a very fine log indeed.



A corner of Rex Gillett's listening den. Rex gets most of the DX to be heard at his South Australian QRA.

A. H. Onslow reports CX4CS, EL2A, HC1FG, HK3AB, HZ1AB, KP4AJ, BI, CM; OA4M, OQ5AR, 5CE; PY6AG; VP6YB, 6ZI; VQ3EDD, 4ERR; VS9AB, XZ2YT, ZC6FP, 6WP; ZE1JM and W6VKV/I6.

Al. Slater gives his most interesting stations as ES1TU (says "it is difficult for me to QSL"), CR9AG (most consistent with his 120 watts, ME5FA (Suez Canal, has a rotary 36 inches off the ground) and W3JRF/KG6. Other interesting calls were J2SJS (R8 at 0820), 9AAK (1400), 9ANA; KZ5NB (1345), VP4TZ, 6MR, 6ZI; VS9AA, 9AB (1440); W6VJT/KG6 (1215), YI2AH, 2CA, 2WM, 7G; ZC6FP and ZE1JM (0925).

Arthur Levi reports hearing CX4CS, EL2A, EQ2L, HZ1AB, KP4CU, SV0AB, VK3OP, JD, KS; VP6FO, MR, YB; VS1AT, BJ, 9AB, 7EV/M; VU7AB, 2LR, LK; W6ONP/KW6, W6VJT/KG6, ZL2DN, 2YT; YI2AT, CT, 7G; ZL3AW; ZS1P, T, U, 6BV and S.

Tom Williamson, using his 2-v-2 logged CX4CL, EL2A, HZ1AB, J9ANA, KV4AD, OA4M, OQ5AR, BA, BR, CE; PZ1D, VK2ADC, AGV, 3ALV, RD, YX, 5NR; VP4TZ, 6FO, YB, ZI; VS1AB, BG, BJ, 9AA; VU2AV, LK, LR, TL, 7AB; XZ2DN, KM, YT; YI2AH, CA, WF, WN, 7G; ZC6FP, ZS1P, 6CT, DT, DW and EG.

J. N. Trye has as his best catches VP4TZ, VK2AKR, ZL2FY, ZL3LC and ZL4AT.

● "Forty"

Better support for 7 Mcs. this time, but more needed, please O.M.'s. Tom Williamson (St. Albans) makes a welcome return to this feature with a very fine 'phone log. He lists CO2EV, 2HT, 2KB, 2VC, 5FL, 6AG; HI3JR, 8H; HK6AC, 6ES, 7AL; PY1AP, 3CA; TI6EM and XE1VL. How's that for good DX? The receiver in use was a SH7.

John Clarke (Brentford), G10, comes up in usual style with a good CW log. The pickings are CM7ab, 8te, FM8ac, 2mm; KP4cc, KV4aa, 4ad; NY2cm, PY4nb, 7au; PZ1am, SU2r, UG6wd, VO2k, VU2ws, ZL1hy, ZS6lm.

Walter Savage, prompted by our recent remarks, gave 7 Mcs. "a try" and the results have justified the effort. The best ones were CT2XA, HK1ad, KP4cg, UJ8ad, VP4ad, YI7i, ZC6ab and ZS6jw.

● Query Corner

Martin Harrison having lain low for some time, makes a concerted effort this month. He asks if ZC6MN (who gives his QRA as Accra!) is on the level. Well, all we know is that no ZC6 tickets have yet been issued by the authorities. Service stations in Palestine are being issued with four-letter

calls (like the XA's) starting JX, but Palestine nationals are not yet on the air officially.

Martin also queries HZ2BY (QRA wanted), TA1P (not TR1P, but just one of those "Turkish" pirates), OI2KAB (Quite O.K.—connected with the well-known expedition), and asks why HH2PC should come in at R9 one day at 1550. We have heard these West Indies stations at remarkable strength at odd intervals during the early afternoon too. Any offers? Finally, Martin mention D4ADJ (can't speak English!), D4JEK (can only speak German and Dutch) and OK4IDT.

Ken Crandall heard YE1LC (says he is in Dutch East Indies) on 14 Mcs. at 1020. Anyone have any data on this one? (The QRA you need Ken is for VQ4ERR—Box 1313, Nairobi.)

Robert Collett says what's the data on ZC5C. Well, he was near Jaffa and we understand that he has had to QRT.

A query of long standing—XU41R—has been solved. The op. says QSL via Box 88, Moscow.

● Stations of the Month

G4KY heard in U.S.A., Q5 R9, when using 3 watts on 28 Mcs. . . . FU8AA is another one from New Hebrides to chase up . . . ZK1AB has been heard from Cook Island on 14 Mcs. . . . VQ5FCA is a new 'un from Entebbe, Uganda, on 28 Mcs. . . . J3AAD heard in this country on 7 Mcs. . . . PK6AQ is the latest from New Guinea . . . XUIMCF is a strange call but is genuine (14 Mcs.) . . . CR7VAL heard on 14 Mcs. Is he a phoney? . . . VU7AB joins 7BR on the air from Bahrein Island.

● Gossip

One of our most persistent DX-chasers, Jeff Bowes-Taylor, now has his ticket—call G3BQG. Congrats., O.M., and lots of QSO's.

D. G. Thompson, G3AHS, gives an interesting description of his rig. The station is entirely powered by batteries and is a genuine QRP outfit, running about 3 watts. The TX is CO/PA, an LP2 and 2ZOP, and the RX a 1-v-1. Aerial is 66 foot end-on. Best DX has been SM and YR. (Hope to see you in the contest, O.M.)

The XA station QSL Bureau, previously run by XADZ, has now ceased to function and QSL's should be sent direct to individual stations.

● DX Target—Mobile Marine

This month we hand over to Martin Harrison, who sent in such a good list of /MM stations, that we feel he should "take

the floor." Here are the stations Martin mentions, all on 28 Mcs.:—

W1KBX (Caribbean), W2PFL (South America), W2PRF (S.S. Lake Erie—Gulf of Mexico), W2MGH (Pacific), W2MMO, W2QIC (Atlantic, on 29140 kcs.), W2LDH, W3NE, W5IFM (Persian Gulf), W6QVF, W6UYQ, W6RZA (M.S. Fairwind, on 28800 kcs.), W7JEA (Pacific), W7KCA (Gulf of Mexico), W8ZFL (29150 kcs.), W8SAU (S.S. Lucy Stone, on 28540 kcs.), W0LNX (M.S. Fairwind, on 28800 kcs.), and KA1AW.

Regarding the "DX Target" of February, Roger Legge makes the following comments. These stations, mentioned in the survey have now returned to the U.S.A.:— W7ELL, W9HCJ, W9HJW and W8LQA (not 8LQM). Roger has also heard W6ONP on Wake Island (14200 and 28490 kcs.), KP6AA on Palmyra (between 14200-14300 kcs.), J9KC (28410), J9LG (14310 and 28200) in the Marshalls, J9CRP (14320) on Kwajalein and W4FHX (29100) on Ebon Island. The most active station on Iwo Jima is now W4BOW (28400). Your scribe's error of including Swan Island in the survey was pointed out (Swan Island is in the Caribbean).

Martin Harrison mentions hearing W2TCN/KJ6 on Johnson Island.

● DX Worked

G2LC, Cyril Greenaway (Ruislip) has been putting in some fine work. Amongst the rarer ones collected were VU2ws (7 Mcs.), CR4bq, HH3l, KL7gr, VS7ev, PZ1wk, ST2am, CE3aj, CE3dg, CX2ad and KH6jq (14 Mcs.) Cyril has now worked 42 States of the U.S.A. Anyone beat that?

G6GH, Geoff Hutson (Boston, Lincs.) again comes forward with some fine DX. (Incidentally, apologies for giving your call as 6DH last month, O.M.!) The pick of the bunch are C2kt (14120 kcs. at 1725), HH3l, KG6al (14080 kcs. at 1855), W6udg/KW6, J9acs, HZ1ab, VQ8ae, (14003 kcs. at 1705), VU7br, W7ong (Nevada), ZDikr (14030 kcs. at 2055), VP9q, VP8ad (14060 kcs. at 2100), ZK1ah (14140 kcs. at 0500) and XE1a.

● In Memoriam

The sudden death, on March 10th, of Captain Hall, husband of Dorothy Hall (W2IXY) will be mourned by all who have heard or worked the famous Long Island amateur station. The Captain or "skipper" as he was known to intimates, did not often come to the microphone himself, preferring to be a "silent" partner—he always kept the station log. The Skipper was the North

American Monitor for "Radio Australia" making daily recordings of the signals, and it is to his credit that only three transmissions were not recorded in many years of monitoring. Our most sincere condolences to you, Dorothy, in your sad loss.

Readers will be interested to hear that Dorothy is coming to Europe for a much needed holiday. She leaves La Guardia Airport on July 31st and will arrive in London on August 1st. A party from "Short Wave News" will be meeting the plane in order to welcome "Dot" to our country. During her stay in this country, Dorothy will be staying with some pre-war SWL friends in Kent.

● QSL's Received

This section is growing so very rapidly that we must in future limit it to recording DX QSL's only. On 14 Mcs. and 28 Mcs. this means "no European and East Coast Americans, please." No Europeans also for 7 Mcs. reception, O.M.'s, but anything outside Europe on 3.5 and 7 Mcs. is still DX. Overseas readers are also requested to keep their lists to DX stations exclusively, according to their location. Here is this month's selection of QSL's received by readers:—

Arthur Levi: GI 38: VQ4ERR, YI2CA, CN8BA and XZ2DN.

Bryan Hayes: HK3AB, W2MMO/MM, OA4M, CE1AZ, W6ITH, W7HRV, LU6AJ and VS1BU.

A. H. Onslow: VP4TE, ZS1DU, J2UVW, VS9GT, LU6AJ, VO6K, ZE1JX, VE6SZ, W5JRI, W9SLW, WoFLF, WoFQJ, for 14 Mcs. and W1NQ, and W9BMV for 3.5 Mcs.

Al Slater: 14 Mcs.: OX3GC, VE8AJ, VO6K, VK2AGU, PY2CK, ZE1JX, ZS5DS, W5HFQ, W5JRI, W9BNB/KL7. 28 Mcs.: YI2WM, W7JJN and WoBNJ.

Bill Harris: G42: ZS1CN, VE3BIE, W6MLY.

Jeff Bowes-Taylor: G65: KL7AD, LI2JC, LU3EL, VO2M, VO6K, VP9K, W5CPI.

D. L. McLean: 14 Mcs.: HK3AB, HK3BI, VK6KW, VU2KB, W6VVA/1. 28 Mcs.: VO2RM. 3.5 Mcs.: VO1A, VO1I.

● Topical QRA's

Collected by your scribe, with acknowledgements to A. Slater, A. H. Onslow, D. L. McLean and Martin Harrison for several of those listed.

FU8AA: Pentecost Isle, New Hebrides.

HR1BD: W. Rogers, United Fruit Company, Cortes, Honduras.

HZ1AB: APO 788, c/o Postmaster, New York.

HZ4EA: QSL via ARRL.

J9AAR: APO 105, c/o PM, San Francisco.

J9ANA: Naval Operating Base, Okinawa, c/o FPO, San Francisco.
J9AAL: APO 239, c/o PM, San Francisco.
KP4CC: 285 Tapia Street, Sancturce, Porto Rico.
KV4AA: Box 402, San Thomas, Virgin Isles.
KV4AD: Box 136, Fredericksted, St. Croix, Virgin Isles.
NY4FC: Box 35 Q, Naval Air Station, Navy 115, FPO, New York.
OE9AA: Radio OE9AA, APO S/565, Klagenfurt, Austria.
PK2AA: c/o Post Office, Djokjakarta, Java.
PK6AQ: Sjoerd Quast, Chef TFN Centrale, Brak, New Guinea.
VP4TJ: Electronics Office, Navy 117, c/o PM, New York.
VP3JM: Andy Jasmins, 294 Thomas Street, Georgetown, British Guinea.
VQ4JBC: Box 4013, Nairobi, Kenya.
VS13: Sgt. R. E. Fisher, Bounguen Field, Port Rico, APO 845, c/o PM, Miami, Florida.
VS7MB: West Ceylon Receiving Station, Fleet Mail Office, Colombo, Ceylon.
VU2AJ: L/cpl. A. Hudson, Indian Sigs. Corps School, Mhow, India.
VU2GB: Dongri Police Station, Bombay 9, India.
VU2TH: I.C.S. School, Mhow, India.
VU2TM: GHQ Signals, New Delhi, India.
VU2XL: HQ Madras Signals Regt., Madras 9, India.
W3JRF/KG6: 1st Amphibian Tractor Bttm., c/o FPO, San Francisco.
W6ONP/KG6: c/o Pan American Airways, Guam, Maraianas.
XU1MCF: Box 10, Navy 3930, PM, San Francisco.
YI1T: RAF Shaibah, British Forces in Iraq.
ZC1AL: c/o Post Office, Mafraq, Trans-jordan.
ZC1AN: c/o Arab Legation, Es Salt, Trans-jordan.
ZE1JH: Box 66, Shabani, Southern Rhodesia.
ZE2JA: Box 596, Salisbury, Southern Rhodesia.

AMATEUR RADIO TO THE RESCUE

At 8 p.m. on Sunday, March 16th, some children were marooned in a truck at Wraybury (Bucks.) Station, surrounded by the Thames floods. The local telephone system being out of order, G5WG was appealed to to send out a call for help. This call was picked up by G4KG of Heston, Mdsx., who ran to the nearest call box and dialled 999.

Scotland Yard replied to the message saying that they would contact the Slough, (Bucks.) Police asking them to send an 'army duck' to the rescue.

**DX PREDICTION FOR
MID-MAY TO MID-JUNE**

Through the co-operation of the two well-known DX'ers, Geoff. Hutson, G6GH, and Denis Heightman, G6DH, we are able to offer readers a prediction for DX during the coming month. These predictions are based on experience gathered during a number of years work on the bands quoted, and our forecasters ask us to say that they suggest the average conditions to be expected and they do not forecast ionospheric storms, fade-outs, etc. For the present we shall be publishing these predictions monthly, the 14 Mcs. by 6GH and the 28 and 60 Mcs. ones by 6DH.

14 Mcs.

0400 to 0700 GMT. W5, W6, W7, VE6, VE7. When these stations are absent, VK, ZL, KH6 and KL7 may break through.

1500 to 1600 GMT. VS1, PK.
 1600 to 1800 GMT. VU, VS1, J.
 1800 to 2000 GMT. VQ2, 3, 4, 5, 8, VU, VS1, J.

2000 to 2400 GMT. VP2, VP4, KP4, PY, LU, CX, VP8.

East Coast W's will be heard between 0400 and 0700 and 1400 to 2400 GMT.

28 Mcs.

Conditions will be poor for DX generally. S. Africans and S. Americans may come in well, but chiefly European signals will be heard. W's, if coming in, will do so in the evenings after 1700 GMT and Southern States will give the best signals. VK's will be off a bit, but may be heard in the mornings. VU's should be heard about 1200 GMT.

60 Mcs.

Spodic E propagation may take place, particularly for signals arriving from a Southerly direction.

In five minutes G4KG was back at his transmitter but too breathless to speak so his XYL sent the comforting news to G5GW.

The water having reached the underside of his ground floor boards, G5GW then continued to remove his carpets, etc., and retreat to the first floor. 2FZQ.

THE "S.W.N." QRP CONTEST

Rules and Conditions

1. To be held over the period of one week, commencing at 2359 GMT on Saturday, July 19th and ending at 2359 GMT on Saturday, July 26th.
2. Power supply to transmitter is limited to one standard 120 V. H.T. Battery.
3. Power output is limited only to that which can be obtained from the battery.
4. Points to be scored as follows: One point per contact, multiplied by the number of countries worked, i.e., 11 contacts and 5 countries will gain 55 points.
5. A contestant may contact any given station more than once, providing that not more than one contact is made per band with that station.
6. Contestants may chose any, or all, of the following bands: 1.8, 3.5, 7 and 14 Mcs.
7. Either AC or DC can be used to supply the filaments of the valves.
8. No signal transmitted with a T7 note or under will be allowed.
9. Conditions of license must be observed.
10. Contest is restricted to stations with the following prefixes: G, GC, GI, GM or GW.
11. Completed logs, typed if possible, must be returned to this office within seven days of the close of contest. Address logs to "QRP Contest," c/o "Short Wave News."
12. Details of equipment used during the contest must be submitted with final log.

Want a Blueprint?

We now have available blueprints for 0-v-0, 0-v-1, 0-v-2 and 1-v-1 receivers.

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SHORT WAVE (HULL) RADIO G5GX.

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2 Valve O.V.I.

Bandsread tuning, plug in coils 9-200 metres, Pentode output—Price complete with valves and coils but less cabinet and batteries £5 10s.

4 Valve 1.V.2.

Bandsread tuning 9-200 metres, black crackle steel cabinet—Price less batteries and speaker £10

4 Valve 1 (Tuned) V.2.

As above but with tuned R.F. stage—Price £12 12s.

All components in stock for D. Warner's Short Wave Superhet as described in April issue of "Short Wave News."

25 watt C.W. Transmitters

Type 25GS complete with power supply, valves, Xtal and coil for one band but less meters and cabinet £18

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30/32, PRINCE'S AVENUE
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SOUTHERN RADIO AND ELECTRICAL SUPPLIES

EDDYSTONE "640" AMATEUR COMMUNICATIONS RECEIVER. By the time this magazine is published we hope to have a demonstration model of this new Eddystone Receiver. This model will remain on show in our windows or show-room until the general release, which is expected in August. It will be available for demonstration upon request in our "Ham Shack." Brief specification:—9 valve superhet, containing RF stage, 2 IF stages, Det. A.V.C. and audio amplifier, output stage, rectifier, noise limiter, B.F.O. and frequency changer. Three bands 31 to 1.7 Mcs., flywheel tuning, bandsread, crystal filter with phasing control, jacks for loudspeaker and phones, sockets for "S" meter, adjustable beat frequency oscillator, etc. Rigid ripple black cabinet with lift-up lid, size 16½in. x 10in. x 8½in. high. Weight 33 lbs. Price, including Purchase Tax, £51 0s. 7d. Limited orders are now being accepted for delivery in strict rotation.

EDDYSTONE SHORT WAVE MANUAL No. 5. This publication contains constructional details of Ultra Short Wave and Short Wave transmitters, receivers, preselectors, etc. Price 2/6 or 2/7 post free.

EDDYSTONE MINIATURE SPEAKER—Very high quality diecast metal cabinet in ripple grey or ripple black and chromium, approx. 5½in. diameter, with ¾ permanent magnet with special acoustic baffle, especially suitable for communication sets or extension purposes. Impedance 3 ohms. £3 7s. 6d.

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R.A.F. "IDENTIFICATION FRIEND OR FOE" Radar R3003 24v. Transmitter Receivers. Operates between 155—185 Mcs. Complete with 10 valves, as follows: 2 type RK34; 1 type EF50; 4 type SP41; 3 type D1; and 20 watts motor generator, 12v. input, 480 volt, 40 ma. output. Only 79/6 (Carriage 4/-). Model for 12v. operation is also available.

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THE WIRELESS WORLD VALVE DATA, 2s., postage 2d.
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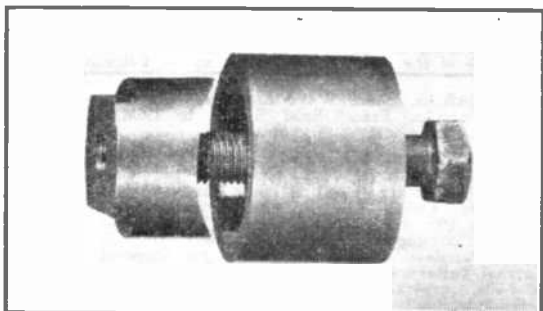
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Component Review



**BERRY'S (SHORT
WAVE) LIMITED**



The illustration shows a handy gadget for the constructor in the form of a tool for cutting holes in panels and chassis, of a size suitable for valveholders in particular, though not confined to this purpose. Ventilation holes, for instance, are not used so much as they might be in amateur built apparatus. The tool consists of two main parts, a die and a punch, both made of high tensile steel. Operation is quite simple. First a hole is cut in the metal sheet of a size suitable to pass the bolt. The bolt is then put through the clearance hole in the die, then through the sheet to be cut, and finally threaded into the punch. The latter has two flats formed on it, which can be gripped in a vice. All that remains is to rotate the bolt with a spanner. Each tool will cut a hole of one specific diameter, and they are available for most of the valveholders in common use. The price is 10s. 6d. for the octal size, and 12s. 6d. for 1½ and 1¼ inch diameter sizes. Postage is 9d. extra.

M.O.S.

We have received from the **Mail Order Supply Co.** details of the **Burgoyne Aerial Coaxial Connector**, for which they are the sole distributors. The connector, which assembled weighs only twelve ounces, is made of aluminium with steatite insulation, and the application of the weatherproof cement—provided—during assembly, enables the making of a really efficient and watertight connection between coaxial and aerial. The connector also serves as a centre insulator for dipoles. All connections are soldered, while the strain of the aerial itself is taken by two forged steel eyebolts. The connector will take all sizes of coaxial cable up to ½ inch diameter. The price is 24s. 6d., and a leaflet which describes it and also gives full assembly instructions is available from M.O.S. on demand.

BOOK REVIEW

RADIO TUBE VADE-MECUM. Compiled by P. H. Brans. 6th Edition, 1946. Pp.231. Algemeene en Technische Boekhandel, Antwerp, Belgium.

We have received a copy of this publication for review from the *Modern Book Co.*, 19-23 Praed Street, London, W.2, who are second agents for this country. This is about the most comprehensive book on valves that we have seen so far, yet it does not claim to be complete. On the contrary, quarterly supplements are being published, and will be sent free to the purchaser on receipt of a form provided for that purpose. Valve data and comparisons, covering English, American, European and Russian valves, is given in a series of tables. The book contains instructions in English for the use of these, so that the purchaser need have no fear on that score. Table 1—occupying over a hundred pages—gives general characteristics of valves commonly employed on the continent, including U.S.A. types. Table 2 gives, in some forty pages, the characteristics of British valves. Table 3 lists "equivalents," while Table 4 gives suggestions for replacement purposes where the original valve is not available. Section 5 contains 689 diagrams showing base connections. Table 6 gives the general characteristics of Russian valves, and Table 8 of those of German and Italian. Table 7 contains four columns, the first three of which list Service valves according to the different systems employed, while the fourth gives equivalents in commercial types. Altogether, a most useful publication to have on the bookshelf. The price is 12s. 6d., which, as mentioned before, also includes the supplements. Postage is extra. C.O.

SMALL ADVERTISEMENTS

Readers' small advertisements will be accepted at 3d. per word, minimum charge 3/-. Trade advertisements will be accepted at 6d. per word, minimum charge 6/-. If a Box Number is required, an additional charge of 1/6 will be made. Terms: Cash with order. All copy must be in hand by the 10th of the month for insertion in the following month's issue.

QSL CARDS, Short Wave Listeners' and Full Call. Samples Free. Send S.A.E. to G6MN, Workshop, Notts.

BOOKS FOR SALE: "Radio Amateurs Handbook" (1944) 8/6; P.W. Encyclopedia Servicing Manual 5/-; "Sixty tested Wireless Circuits" 5/-; "Wireless Coils, Chokes and Transformers" (Newnes) 4/6; Admiralty Handbook (Parts I and II) 7/6; 20 copies Practical Wireless 7/6; 20 copies Wireless World 12/6. Also for disposal Marconi battery super (medium and long) 45 and 100 kcs. crystal standard 15/-; G3AYA, 62 Cavendish Road, Kilburn, London, N.W.6.

EAST ANGLIAN HAMS. All components for receivers and transmitters, crystals, test gear valves. Authorised distributors for Hamrad, Raymart, Eddystone, Labgear. No lists yet but all enquiries dealt with promptly, send stamped addressed envelope. Newson, G3GY ex-G2GF, 28 Market Place, North Walsham, Norfolk. Telephone 219.

BLUEPRINTS—0-v-0, 0-v-1, 0-v-2, 1-v-1. Full coil winding data, point-to-point wiring. All Lab. tested, 2/- each. Page Instruments, 51 Dudden Hill Lane, N.W.10.

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CANADIAN 58 Transreceiver, 6.9 Mcs. complete with aerials, batteries, microphone and headphones: £7. Also R.A.F. rubber dinghy with sails, etc. £4. Box 1017.

SUPPLEMENT TO EDDYSTONE MANUAL No. 5, containing details of modified Bandsread Four battery receiver for accumulator operation with improved performance and amendment to the manual. Price 3d. post free.—Southern Radio and Electrical Supplies, 85 Fisherton St., Salisbury, Wilts.

COMMUNICATION R1155 receiver, 6V6 output. Perfect £18. 130 High Street, Braintree.

VALVES! Good condition: including 807, 211, 1R5 PT15 (all 10/- each), EA50 (5/-), 6SN7, 6SK7, 6SJ7, 6K7, VR105/30, VR150/30, 7C5, 47E, 955 (6/- each), EF50, PEN45, 6N7 (7/6 each), PM2A, PM24M, PM24, MHD4, AC/HL, AC/P, UP21, FC2, AC/PEN, MHL4 (6/- each), 12SK7, 12A6, 12SH7, 12SJ7, 12SG7, 12H6 (6/- each). Mostly one each of each type. Offers for disposal. Box 1018.

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AMATEUR Selling up. Many useful components. S.A.E. list. Aldridge, "Aprilliss," New Road, Amersham.

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Specification

Primary 230v., A.C. 50 cycles. 0.9 amp.
Secondary 500-0-500v. 50 cycles at 170 mA.
4v. 4 amps. C.T. heater.

Weight about 15 lb. Size 5in. x 6in. x 8in.
Leads connected to terminals mounted on solid bakelite panel on top of transformer. Base fixing plate provided. **ONLY 42/-**

- **ADD AN EXTRA HEATER WINDING TO YOUR MAINS TRANSFORMER!**

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Size 7½in. x 2½in. x 3½in. Input 140v.-250v. A.C. or D.C. Output off load about 200v. On load (small 5v. receiver) approx. output 90-100v. and 7½v. **£3**

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The complete equipment consists of the following:—

1. A 5 valve superhet designed for C.W. or R.T. operation, uses four 1T4 and one IRS valve, size $9\frac{1}{2}'' \times 3\frac{1}{2}'' \times 2\frac{1}{2}''$.
2. Power supply which will operate on either A.C. or D.C. mains, any voltage from 97 to 250 volts, adjustable to voltage required, size $8\frac{1}{2}'' \times 3\frac{1}{2}'' \times 2\frac{1}{2}''$.
3. Two combined 90v. H.T. and 7.5 v. L.T. batteries, size $7\frac{1}{2}'' \times 3'' \times 2\frac{1}{2}''$.
4. Pair of balanced armature light-weight headphones.
5. Coll packs, size $2\frac{1}{2}'' \times 3\frac{1}{2}'' \times 1''$.
 - (a) Tunes from 100—1,600 kcs. 188—3000 metres
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 - (c) Tunes from 4.5—8 mcs. 38—67 metres
 - (d) Tunes from 8—15 mcs. 20—38 metres
6. Aerial and earth wire with paxolin former and earthing clip.

This receiver can be used when out walking, as it can be easily carried in your overcoat pocket. The battery will give approximately 30 hours continuous use, and 2 to 3 months when used intermittently. The power pack is, of course, operated in the shack to conserve the batteries for outside use. Should you require further batteries we can supply, while stocks last, at 19/3d. each, post free. Sufficient power is available for working a small loudspeaker 2" or 3" in diameter, if required.

We have found this receiver amazingly efficient on test, and all Continents can be received at 59 on phones. Backlash and frequency drift are negligible, and signal to noise ratio, even when the receiver is mains-operated, leaves nothing to be desired.

Just released by the Government, these sets are exceptional value for money, and cannot be repeated. Limited quantities are available. Buy yours now.

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AC/DC Microamps : 100 Microamps on the 10V range.
Resistance ranges : 0-1 Meg., (13,500 Ohms mid scale). 0, 10,000 Ohms (135 Ohms mid scale).

Frequency Range : 15 to 20,000 Cycles per second.

Accuracy : 3% on D.C. Ranges.
4½% on A.C. Ranges (for sinusoidal waveforms).
5% on Resistance Ranges (Compensated for normal variation of cell voltage).

Size : 9" x 5½" x 4".

Terminals : Socket head type.



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List (in preparation) NOW

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Model ABK1. 24v. input. I.F.F. Receiver Transmitter, frequency 158 to 186 mcs. 10 valves supplied, 2 off 7193 (TX), 2 off 6H6 metal, 6 off 6SH7 metal. Pioneer Dynamotor, using Carbon Pile Voltage Regulator, Input 18v. H.T. output 450v, also operates switched tuning. Plus a host of V.H.F. components, relays, condensers, resistors, $\frac{1}{2}$ to 150w, etc. Also Model ABK. 12v. input same as above. Dynamotor Input 9v. Available at same price, both finished black crackle, size 12 $\frac{1}{2}$ "x12"x8" approx.

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Carriage and Packing
7/6 extra

EX-R.A.F. RI124 RECEIVERS

6 valves, types 9D2, 15D2. 8D2. 4D1. 6 switched frequency positions. 30-40 mcs. approx. I.F. 7 mcs. Power voltages required, H.T. 200 volts, 50 m.a., L.T., 13 volts, 1-8 amps. Contains a host of first class components. Housed in cast aluminium case, size 12 $\frac{1}{2}$ "x9"x6", weight, 17lbs. Slightly used, good condition. A snip.

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EX-R.A.F. RI124 POWER UNIT

Type 320. 24 volts input. Permanent Magnet type Motor Generator with smoothing equipment and stabilized H.T. voltage. V.S.110 Neon Stabilizer. Output H.T., 200 volts, 50 m.a., L.T., 13 volts, 1.8 amps. 5,000 r.p.m. Housed in a cast aluminium case 13 $\frac{1}{2}$ "x7 $\frac{1}{2}$ "x5 $\frac{1}{2}$ ". Weight 17 lbs. Slightly used, good condition.

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