SHORT WAVE NEWS

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In this Issue

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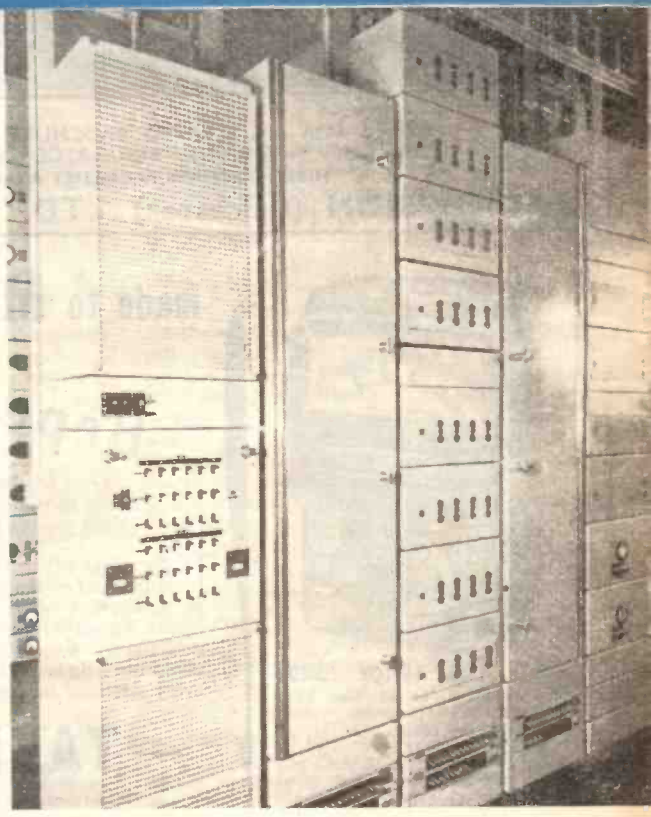

Phase Control panel at M.U.S.A.

AN AMALGAMATED SHORT WAVE PRESS PUBLICATION

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Short Wave News

Vol 2 No 6 Annual Subscription 16/- June, 1947

Editor : ARTHUR C. GEE, G2UK Asst. Editor : W. NORMAN STEVENS, G3AKA

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

EDITORIAL

A Unique Service for Our Readers

WE are able to publish this month the preliminary details of a service for our readers who are licensed amateurs. This service is so unique that editorial comment is deserved.

Through the courtesy of the Leicester Telecommunications Laboratory we are able to offer our readers professional monitoring of their transmissions. The Laboratory is a commercial monitoring station engaged by the major broadcasting stations of the world for monitoring and recording their transmissions.

A great many requests for an amateur station monitoring service have been made but, to date, these requests have had to be refused. Through the interest of the Laboratory's Chief Engineer, Mr. C. L. Wright, in amateur radio, the directorate have now decided to extend the facilities to amateurs at certain times when other work will not be handicapped. Permission has been granted for amateur monitoring to take place one week-end per month.

Briefly, the details are that the Laboratory will offer us one week-end per month, from 2200 DBST on the Saturday evening right through until 1200 DBST on the Sunday. Monitoring will be carried out on any amateur frequency, including the VHF spectrum. As "skip" will mostly preclude users of 14 and 28 Mcs. in this country from getting their signals monitored, we would like to point out that these facilities are available to any reader of the "S.W.N." anywhere in the world.

Those interested in this service should write us, letting us know what band they want a check on, whether 'phone or CW, and input power to final stage. We will then draw up a schedule in consultation with the Laboratory and will notify stations of the date and time when they can be accommodated.

The service will provide much more than the rather scanty reports usually obtained over the air. As an example we can tell you that a full laboratory report will be issued giving a tracing from the signal/noise meter, aerial voltage measurements (calculated) and comments as to quality and readability. Coupled with this a copy of the S.W. Predictions of the month will be sent. The complete service will be free to readers.

As we anticipate a scramble for this service, please remember that stations requesting laboratory reports will have to take their turn in the queue! Also, please mark any correspondence "S.W.N. Monitor Service."

Mr. Wright says that the object of offering these services to amateurs is to foster goodwill between amateurs throughout the world and to help them in their little troubles. He gives some very flattering reasons for offering these services to us rather than any other possible interest which our modesty forbids us mentioning! However, we do sincerely thank our good friend for his most generous offer to us and we know our readers will join with us in thanking him and the Laboratory for making available for the first time in the long history of Amateur Radio the services of a professional monitor station.

The final details of the scheme are now being ironed out and the full scheme will appear in detail in our next issue.

A.C.G.

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

CLUB SECRETARIES are invited to submit details of activities for insertion in our monthly club notes, which must arrive at this office by the 15th of each month.

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

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

V.H.F NEWS

OUR mention of the aurora on April 17th last, brought in reports of auroral reflection on that date. GM3BDA of Airdrie, Lanarkshire; heard G5MA of Surrey with a typical "auroral note" on that date. G6MN of Worksop heard 6OH (Hull) with an auroral note and G5BD (Mablethorpe) heard G5BY (Devon) for the first time, with his beam pointing north. It will be remembered that the previous time auroral reflection occurred was on March 8th. Both these auroral displays were caused by the same sunspot, which first crossed the sun's central meridian on March 10th and appeared again on April 7th, crossing the meridian a week or so later. This sunspot was the largest ever recorded and considering its size, it produced little effect on radio conditions. This sunspot was due to appear again on May 4th and any reports on interesting radio observations for the period May 1st—8th would be appreciated by your VHF conductor.

Super-regens Again

Numerous correspondents have asked us to bring up the question of the use of super-regens, self-exciter oscillators, etc. As one correspondent remarks, "we thought we had heard the last of these monstrous noise-machines!" These are once again becoming very popular for across town QSO's and they are causing those who operate the sensitive gear needed for serious VHF work much QRM. The unstable signals emitted by this type of gear can be devastating to any nearby station and we feel that those who operate these "spitch machines" should give way to those who have given the time and thought to constructing more elaborate and scientific apparatus. We know that there are some who still think the VHF experimenter is wasting his time, and that "five" should be used for local QSO's much more extensively. We agree that 60 Mcs. is a very nice band for across the town QSOing. We agree also that many cannot afford the more elaborate gear needed for more ambitious work and that they should not be denied the use of 60 Mcs. for this reason. However, with all the kcs. available on this band, there is surely plenty of room for all! From our own observations, it would appear that most of the serious workers use the lower two-thirds of the band and we suggest that the self-excited oscillators and super-regens keep to the upper third of the band, i.e., the higher frequency end. So what do you say chaps? Surely this is something we can get together on.

Here and There

HA4H and HA8S are both listening for 60 Mcs. G signals. They have nine valve superhets and their best DX so far have been signals from OK.

G8JV reports reception of a very strong signal on 60 Mcs. on May 5th from 1920-1940 DST. It was about 36 db above noise —at least S9. It appeared to be coming in from about 20 degrees E. of South and was carrying a programme by a well-known British dance band. It sounded very like an experimental transmission as the modulation was varied at times and the carrier cut for a few minutes. 8JV thought it might be a BBC transmission connected with television so he wrote to them reporting its reception. They replied saying they had no transmitter on or near that frequency and they suggested it may have been a harmonic, but 8JV has his doubts about this.

G5BD reports reception of SOT, Warsaw, on 57 Mcs., on May 14th, from 1650 to 1730 GMT. The transmission came in sharply from the S.E. and consisted of traffic with W.B.U. 5BD wonders if this was a Sporadic E propagation indicating that the Sporadic E season is opening.

VHF activity on the Continent is still on the increase. PAoPN in Zeeland worked PAoHL in Eindhoven on May 6th—a distance of 80 miles and PAoHL heard ON4UM on the same day.

The Month's Conditions

Tropospheric. Conditions have been better during the month, but not up to the levels which have been experienced at times in the past.

Ionospheric. No reports of Sporadic E yet.

Monitor Station and Area Reports

We are gradually getting the whole of the country covered by Monitor stations. We suggest that those of our readers interested in VHF work should contact their nearest Monitor station and send in reports of activity, interesting events, etc., to them direct—rather than to "S.W.N." Head Office. We still need VHF Monitor stations in East Anglia, N.E. and N.W. England, and the S.W. England. Any offers to the Editor, "S.W.N."

Activity on the East Coast

H. W. Sadler, G2XS, Kings Lynn, is now getting out well. He uses 6A6-6V6-RK34

transmitter giving ten watts on CW and eight on phone. Frequency 58.848. Aerial, 3 element beam pointing West and a long wire running N.-S. Receiver, Eddystone Converter into a TRF 4 valve battery Rx. He has worked G3BK, 4IG, 5IG, 5BD, 5UD on CW and 2MV on phone.

G6DH (Clacton) is as busy as ever. He has had a visit from PAoUN and PAoUM.

G5BD (Mablethorpe) has made many new contacts which include, G6MN, 2XS, 4GZ, 3BK, 4IG, 2NH, 5TH, 2WS, 3IS, 3CC. The sked. with 8JV has reached the 280 mark! which is some record for an uninterrupted series of QSO's. 6CW, 2TK, 8UZ, 5MA, 6DH, 6YU, 2MV, 2MR and 5IG have all been QSO with 5BD during the month.

Activity is at a high level in Hull now. 5BD recently heard the following signals from that quarter:—5GX, 6OS, 2FZX, 3PL and 3CC. On the same evening he heard 4GZ and 8KH of Grimsby. G3YQ (Grimsby) has a VHF converter and is building a Tx. 2HOJ and 3YQ recently tried out some walkie/talkie 60 Mcs. gear, but had no success with it.

Midland Area Monitor Station Report.

G6YU (Coventry) reports QSO's during the month with 23 stations and five new contacts viz:—2COP (Lichfield), 3WD (Sheldon, B'ham), 5PY (London), 5TH (St. Albans), 6MN/A (Worksop).

6XR (Coventry) is on five with a rhombic aerial 96 half waves long and would be very pleased to receive reports on its radiation.

8UZ (Sutton in Ashfield) is busy finishing off a new receiver. He has worked three new stations in 2COP, 4JJ (Barnsley) and 8QX (Malvern) and he has heard 3DA, 5TH and 5BY but has not managed to QSO these yet.

6MN (Worksop) remarks on the poor conditions which seem to persist. He has worked new stations in 6YU, 6YO and 2ETJ. The latter two are Bradford stations. He remarks on the aurora display of the 17th April hearing 6OH (Hull) with a peculiar watery note. The aurora was very well seen in Worksop. After trying for six months he has at last managed to QSO 5BD in Mablethorpe.

G3IS (Rugby) was off the air for the first part of the month, but managed 34 QSO's with four first in 3WD, 4IG (London), 5GX and 5DB.

Reports for the Midlands should be sent to N. White, G3IS, 59 Eastlands Road, Rugby.

Scottish Area Monitor Station Report

The Glasgow boys have now contacted Edinburgh—not a great distance as records go but it was found necessary that one station at least in the link had to use a multi-element beam.

GM3BDA heard 5MA during the auroral display of April 7th.

GM6MS has been working on a combined 5 and 10 metre beam designed to take up the minimum of space. His ideas have been somewhat shaken however by the article in April QST on Gain vs. Element Spacing in Parasitic Arrays and he is now re-thinking things out. At the moment however, he has a 3 element 10 metre beam with .15 wavelength spacing. This beam is only 9 feet high so that he can make adjustments easily and in spite of it being badly screened all round it pushes an S7 signal into VU on phone!

Scottish VHF reports should be sent to A. H. Mason, GM6MS, 390 Kings Park Avenue, Rutherglen, Glasgow.

(Continued on p.153)

60 MCS. OPENS FOR SPORADIC "E"

As predicted in our DX PREDICTION panel last month by G6DH, 60 Mcs. opened for sporadic "E" propagation on May 14. G2TK of Scarboro', has received two report cards from F9BG and F9AQ of Toulon, reporting reception of his 60 Mcs. signals on the evening of May 14, their reports agreeing with his log and the nature of his QSO's that evening.

LATE FLASH!

First G/ON4 60 Mcs. Contact

Denis Heightman, G6DH, worked ON4KN on 60 Mcs. at 2230 GMT on May 24th—a distance of 135 miles. Both phone and CW were used. Rig at 4KN's was 100 watts input to a horizontal dipole; at 6DH's, 25 watts to the "long wire" aerial which gave better results than the beam. ON4KN reported 6DH's signals were being QRM'd by G2QU calling "CQ five"!

The month of Sporadic E was rounded off in the early evening of May 26th when G6DH was again successful. This time it was a QSO with FA8IH in Algiers. 8IH also heard G8RS and ON4G but did not QSO these two stations.

At "Radio Andorra" in the Winter-time

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.)

THIS column is your column, O.M's, so let's have more news, reports, lists of QSL's received, QRA's and anything that may interest other readers. Address all letters for this column to: Monitor, c/o "S.W.N." to reach your scribe by the 5th of the month. Now for this month's news, which includes several reports from our Overseas Representatives in Australia and New Zealand.

● Asia

Ceylon. Sidney Pearce (Berkhamsted) on his "Sky Champion" has heard Radio SEAC Colombo with BC to the British Isles at 1630-1830 on their 15120 kcs. channel. Signals were R8-9 he says. Also carrying same programme on 6075 kcs. and 9520 kcs. for listeners in India and the Far East. The 15 Mcs. frequency is R7 in the afternoons until close at 1615 (Sundays). R5-6 on 11770 kcs. when in parallel. Operates on the 6 and 9 Mcs. band also 3390 kcs. until close at 1700. On Saturdays only, the 11 Mcs. channel carries a special sports programme. Your scribe has heard them on 15 Mcs. with R9 signals in BC to British Isles at 1630-1830 (Sundays). Arthur Cushen (Invercargill, N.Z.) says they now use 100 kW. for 7185 kcs. broadcasts and 750 watts on the 15 Mcs. band.

Philippines. KZPI, Manila, 9710 kcs. uses 200 watts power with a Techrad transmitter using a vertical "L" ¼ wave aerial. Commenced BCs first week in December. Schedule 2130-1600. Saturdays continues to 2130 with "Pacific Jamboree" Programme (all night). Verified by letter, QRA being: Henry L. Miller, Productions Manager, Philippine Broadcasting Corp., 5th Floor Filipines Building. Manila. (Arthur Cushen).

Our VK Representative Rex Gillett (Prospect) sends in his first report to this column. Pleased to hear from you, O.M., and we hope to receive more news from you of "doings down under." Rex states that KZPI opens at 2130 and that frequency used is an experimental one. "Pacific Jamboree" opens at 1600 and is a special Saturday feature which last 5½ hours! Request session.

KZRH also located in Manila operates on 9640 kcs. and announces now as "The Nation's most powerful station."

Malaya. Sidney Pearce lists Radio Malaya on 4780 kcs. Signals sometimes R5 before 1500 and often peaks R7 at 1530. Relays Blue Network until 1600 on Saturdays, but closes at 1535 after headline news on other days.

Our ZL representative Arthur Cushen has heard Kuala Lumpur on 6165 kcs. relaying "Radio Malaya" Singapore with news in English at 1100. Singapore on 4780 kcs. also carries same BC and very well received, he states. Paul Dilg (Monrovia, U.S.A.) states they are now on 4820 kcs.

China. XORA, Shanghai, 11690 kcs. heard with good signals at 1030 giving English news and requesting reports.

XOPD, Hanchow, 9555 kcs. also heard at 1030. No English used. Power 600 watts. Pearce heard XGOY Chungking at 1600-1610 with news BC in English on 6140 kcs. Heard occasionally on this freq.

Cushen has received an Airmail veri from XRAY (AFRS station in Peiping) which had 1300 dollars worth of Chinese stamps on the envelope! The station was on 8890 kcs. until February 17th when it closed down and all personnel returned to the U.S.A. Tx was a Hallicrafters 400 watts job. QSL from Station Manager, Lieut. W.

K. Bell. XRAY was located Peitaho till October when they moved to Peiping.

Paul Dilg sends in a good log of Chinese DX heard at his QRA. XMAG, Nanking, AFRS station 4275 kcs. heard at 0900-1600.

XGOY, Chungking, 6140 kcs. now uses 9665 kcs. XUPA, Tai-Pei, Formosa, 7220 kcs. has moved from 9695 kcs. Schedule 0900-1455. Relays English news from XGOY at 1400. XGAF location unknown 7100 kcs. heard at 0955-1430 also transmits at 0400-0525. No English, mostly music except news in Mandarin at 1045. XGOA, Nanking, 11835 kcs. heard in parallel mostly with XGOA on 9730 kcs. but signs off at 1500. 9 Mcs. channel signs off at 1600 and power has been increased. XOPD, Hanchow, heard daily but freq. seems to vary from 9775-9910 kcs. Formerly on 9555 kcs. Signs off at 1425. XLRA, Hankow, 11490 kcs. works in parallel with XLRA on 6054 kcs. at 1330-1745. Relays XGOY for English news at 1700.

Japan. WLKS, Kure, "The Voice of the British Commonwealth Occupation Forces in Japan." Schedule: 0800-1330. Sats. until 1400. Freqs. 2465 kcs. and 6105 kcs. Latter signs off at 1000 ,Dilg). Uses 1000 watts and signs off with "God Save the King." (Rex Gillett).

French Indo-China. Saigon. "Radio Saigon" is now on its pre-war freq. of 6190 kcs. which replaces its 4810 kcs. channel (Cushen). Heard in parallel with 11780 kcs. freq. (Gillett). Schedule 2315-0100. News in English at 0045 states Sidney Pearce.

Arabia. Aden, ZNR, heard to 1500 testing on 6765 and 12115 kcs. Now uses 5 kW. according to Arthur Cushen.

Lebanon. FXE, Beirut, 8036 kcs. QSL's with nice card. QRA: Lebonese Broadcasting Station, Beirut. (Roger Legge, Binghamton, U.S.A.).

New Caledonia Noumea. "Radio Noumea" has moved freq. from 6208 to 6160 kcs. Heard from about 0900 to sign off at 1005 (Legge) "Voice of France in the South Pacific." Now uses 500 watts. Schedule 0700-1000 states Arthur Cushen.

● North America

Canada. Latest schedules have come to hand from CBC and are as follows: (alteration in transmissions times due to DBST as from April 13th). Transmissions to British Isles radiated over stations CKNC 17820 kcs., CKCS 15320 kcs.

News—Weekdays, 1630 and 1945; Sundays, 1645 and 1945.

1400 First transmission commences; 1430 UNO Broadcasts; 1615 Second transmission commences; 1730 Close of English transmission; 1945 Third transmission commences; 2100 Close of English transmission.

Sundays only.

1400 First transmission commences,. closes 1500; 1630 Second transmission commences, closes 1730; 1945 Third transmission commences, closes 2100.

Canadian Chronicle is BC daily except Sundays at 1415, 1645 and 2000.

COUNTRY PANELS

We regret that pressure of space has meant no country panels for the last few issues. This popular item will resume its usual place on this page next issue.

● Europe

Austria. Vienna. "Radio Wien" 11780 kcs. heard with strong signals daily. (Pearce).

Rumania. Test broadcast heard end of February by "Radio Roumania" on announced W/L of 32.40m. on the hour for 15 minutes. Heard as early as 1400-1415 and still on 2300-2315. Requested reception reports in many languages stating same would be verified in writing. (Pearce).

Finland. OIX2 15190 kcs., OIX4 9500 kcs. heard with news broadcasts in English, daily except Sundays at 1215 for N. America. States next news in English is at 725 EST (0000 GMT) to U.S.A. (Pearce).

● Central America/West Indies

Costa Rica. TIGPH, "Alma Tica," San Jose returns to the air after being off for over 5 years. Freq.: 5870 kcs. Schedule: 0000-0300. At 0300 it signs off and "La Reina del Aire" signs on and uses same transmitter! The latter signs off at 0400. (Legge).

Martinique. "Radio Martinique," Fort de France, 9710 kcs. has moved to new freq. of 9342. Heard signing on in French at 2300. (Legge).. (Believe power is 200 watts.)

Dominican Republic. HIG, Ciudad Trujillo, is heard also on new freq. of 9223 kcs. in parallel with its 6115 kcs. freq. (Legge).

Haiti. HHCM, Port-au-Prince, heard regularly with R7 QSA4 signals on 6165 kcs. All announcements in French. Multiple NBC chimes and call "National Broadcasting Company" at 0130 or earlier. (T. B. Williamson).

Honduras. HRP1, San Pedro Sula, heard on 6350 kcs. at 0035. R6 QSA4 signals with Rhumba music and call "El Eco de Honduras" (Williamson).

I.S.W.L. PROGRAMME

Just after the last issue was printed, word came through that the time had been amended to **1900 GMT.** CR's and TR's were notified by circular to pass the word around in case some copies of the magazine did not arrive in time. Frequencies are the same (VLA8, 11760 kcs.; VLC11, 15210 kcs.) Please send in your reports to "S.W.N." We will forward by airmail.

● South America

Peru. OAX4P Radio Huancayo, "La Voz de Centro del Peru," 5870 kcs. Schedule 1700-1830, 0200-0430. Power 250 watts. Tx.: RCA. QSL's with very attractive two-colour card. (Cushen).

Ecuador. HC4EB ,"Radio Manta," Manta, 6870 kcs. Schedule: 0200-0300 or 0400. Power 375 watts. Verified by Registered Airmail with photo of Manta Harbour. (Cushen).

Bolivia. CP-15, La Paz, "Radio el Condor," 5880 kcs. now heard regularly to 0530 on Sundays. Power: 350 watts. (Cushen).

Columbia. HJAE, "Emisora Fuentes," Cartagena, 4965 kcs. heard with R7 signals from 2300. HJAP, "Radio Colonial." Cartagena, 4925 kcs. heard from 2245 with QRM at times from spread of YV5RN Radio Caracas. (Pearce).

● Australasia

Australia. Your scribe has logged the following: VLG7 15160 kcs. R9 plus signals and VLH4 11880 kcs. R6 with bad QRM. Mentioned VLR2 6150 kcs. working in parallel and carrying ABC National Programme at 2000-2300. VLB4 11810 kcs. has been heard R7-8 QSA4 with heavy CW QRM. Programme to British Isles at 1500. "Mail Bag" programme at 1503 compiled by Eric Rowell. Also over VLC9 17840 kcs. R4-6. VLA6 15200 kcs. heard R9 plus QSA5 at 2145 with news in Forces Programme. VLC11 15210 kcs. R9 plus QSA4 with heterodyne QRM and VLA4 11770 kcs. R7 QSA3. Very bad QRM from Algiers in BC to British Isles at 1745. Incidentally VLC11 is an experimental transmitter. "Radio Australia" uses a Musical Box rendition of "Waltzing Matilda." (Not a marimbaphone as reported by a reader in our May edition.) VLB6 15200 kcs. R9 plus QSA5, VLB8 21600 kcs. R4 QSA5 heard at 0615 with BC to British Isles.

VLG7 reported at 2000-2200 with ABC Inter-State programmes. Announce VLR in the 48 meter band in parallel, VLH5 15230 kcs. R6 at 0600 relaying ABC National programme. Signs off at 0830. VLG6 15240 kcs. R6-7 signals on Saturdays with special sports programme for the Forces. Closes at 0730. In parallel with VLB5 21540 kcs. BC in French to New Caledonia heard from 0730 to close at 0845 over VLC4 15320 kcs. also over VLG6. VLC11 R7 at 1745 with bad QRM. VLA4 jammed by Algiers. (Pearce).

● Africa

Portugese East Africa. Mozambique. CR7AB, Lourenco Marques, 3490 kcs. and CR7BU 4925 kcs. now run until 2200 instead of 2000 as previously. Latter quite good strength on closing but the former is not heard at same time although it is announced in relay. (Gillett). Power: 10 kW. CR7BJ replaces CR7BE and heard on 9645 kcs. English news at 1950. (Cushen).

Portugese West Africa. Angola. CR6RB, Benguela, operates on 6165 kcs. Opens at 1730 and signs off at 1900 with playing of Portugese National Anthem. Station identification is frequently given in Portugese. Power 50 watts. (Rex Gillett who states that he has now verified 74 Countries.) FB O.M.

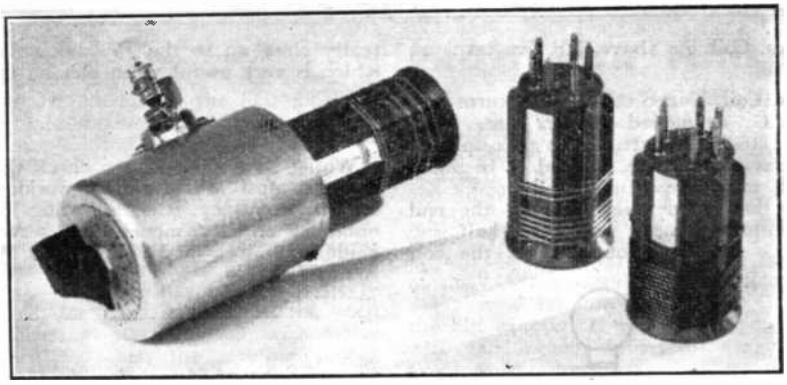
Southern Rhodesia. ZEA, Salisbury, 3660 kcs. heard with fair signals at 1900. Programme is in English to sign off at 2000 on Saturdays with "God Save the King." Signs off other days at 2030. (Gillett).

● QSL Corner

Rex Gillett from: ZYB8 (6095 kcs.), Lourenco Marques (6135 kcs.), Radio Maroc (9082 kcs.), COBL (9833 kcs.), Brussells (17840 kcs.), Radio SEAC Ceylon (7185 kcs.), WCRC (21560 kcs.), SDB2 (10780 kcs.), Berlin (6070 kcs.), HER4 (9540 kcs.), ZPA5 (11960 kcs.), Klofta (6200 kcs.) (information on this one would be appreciated O.M.), OLR2A (6010 kcs.), OLR4A (11840 kcs.), Capetown (9610 kcs.), ZNB (5900 kcs.) (very FB O.M.), Radio Andorra, Radio Leipsig XGOA (5918 kcs.), WLKS (6105 kcs.), PCJ (11735 kcs.), RNB (9430 kcs.), WRUS-A (15350 kcs.), WRUL (11730 kcs.) Your scribe has had cards from: VLB6, VLB9, VLC10 and VLA8. Arthur Cushen: Singapore, OAX4Q, COBQ, COBL, CBFZ, CNR3, Algiers, KCBR, VLC10, Radio SEAC (7 and 15 Mcs.), Paris, CE622, FGA, LKJ, VLA9, VLB8, VLB3, VLB9, VLB6 and VLB. (Nice going O.M.)

● Acknowledgements

Arthur Cushen (Invercargill, N.Z.), Rex Gillett (Prospect, South Australia), T. B. Williamson (St. Albans, Herts.), Sidney Pearce (Berkhamsted, Herts.), Paul Dilg (Monrovia, California, U.S.A.), Roger Legge (Binghamton, N.Y., U.S.A.)



An Absorption Wavemeter

SOME means of checking the frequency of the transmitter is even more essential in these days of tritet oscillators and 807 frequency multipliers than ever before, yet few shacks seem to possess any instrument for making such checks. The simplest of all forms of frequency meter is, of course, the absorption wave meter and the one described herewith can be so easily and cheaply constructed, that we suggest you make it the very next job to be tackled in the shack! It will certainly save many headaches and fruitless trips round to your colleagues' shacks for their wave meter which always seems "to be out!"

The wave meter shown here has several features which have been introduced as a result of bitter experience. First of all it is small in size and can be very conveniently held in the palm of the hand. Secondly, the coil is wound right at the end of the former so that it can be got up really close to the oscillatory circuit coil whose frequency is to be determined. Thirdly, the flash lamp bulb is easily replaced. It is not necessary to remove several screws every time the bulb burns out—which is pretty often in the average shack.

The details of construction are obvious from the illustrations. The container for the variable capacitor is an aluminium screening can, 2¾in. by 3in. These can be picked up for 6d. or so at most radio dealers. A piece of wood is cut to fit the open end and a valve holder type coil base is fitted. Four pin formers will do as only four connections are needed, but these seem to be in short supply at present, so the Eddystone six pin ones shown were used.

The variable capacitor is an Eddystone "Microdenser," 100 pF., (Cat. No. 1130). tI is fitted into the base of the can as shown and an Eddystone 1¾in. dial and small pointer (Cat. No. 425) fixed on as per photo. Set the pointer to read "10" with vanes of capacitor full in.

The flash lamp bulb holder is one having both contacts insulated from the fixing bracket. These, too, can be easily obtained from any radio dealer.

Coil Data

This wave meter has been designed primarily for the higher frequencies where it is of greatest use. Consequently a small value variable capacitor has been used. The coils shown are for the 28, 14 and 7 Mcs. amateur bands. If twice the number of turns indicated for the 7 Mcs. coil are used, the meter can be used for 3.5 Mcs., if required.

28 Mcs. Coil. Tuned coil, two and a half turns No. 20 S.W.G. bare or enamelled copper wire; turns spaced 3/16 inch apart. Lamp pick-up coil; two turns same wire, turns spaced 1/16 inch apart and coil wound half inch below tuned coil.

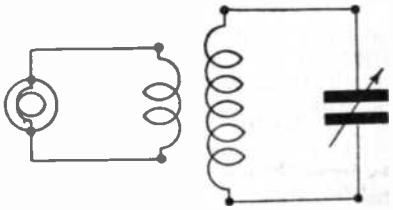


Fig. 1.—The circuit.

14 Mcs. Coil. As above, but five turns on tuned coil.

7 Mcs. Coil. Tuned coil; twelve turns No. 22 S.W.G. enamelled copper wire, turns spaced 1/16 inch apart. Lamp pick-up coil; two turns same wire, spaced 1/16 inch; coil half inch below tuned coil.

Keep the tuned coils right at the end of the formers, do not wind them half way down the formers. You can get the coil really close up to the T7 tank coils then, which is very useful when picking up weak harmonics.

Calibration

Whilst it is advisable to check the wave meter against a transmitter working on a known frequency, the following readings obtained on our model will serve as a guide:—28 Mcs.—5. 14 Mcs.—8. 7 Mcs.—7.

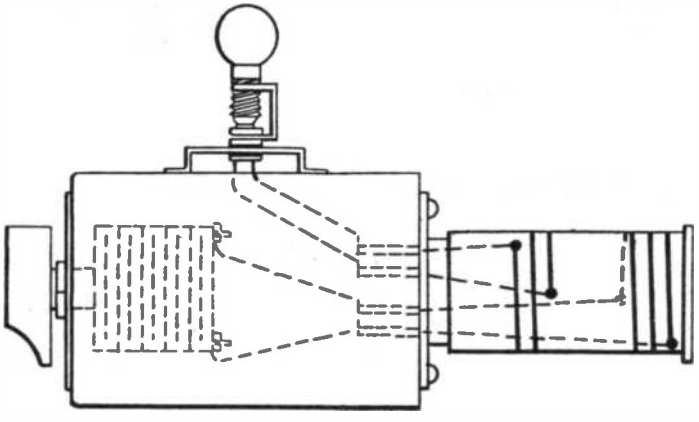


Fig. 2.
Sketch showing the general assembly

I.S.W.L. NOTES

H.Q.: 57 Maida Vale, London, W.9

Annual Subscription 1/- per annum

The QSL Bureau

Since the inauguration of the Bureau in February, much good progress has been made. The internal organisation of the Bureau has undergone some changes inasmuch as the management is now jointly controlled by members Fred Hill (G642) and Jim Leigh (G551).

Here are some points that should be noted by members using the outgoing sections:—

(a) There is no need to enclose each report in a separate envelope.

(b) DO NOT inscribe "Pse QSL via RSGB" on your reports. Most incoming cards will be direct to our Bureau and only those sent through overseas Bureaux will come via RSGB. The RSGB have been most helpful to us so please, O.M's, do not make them too much extra work! (One enthusiastic member had his own report sheets printed and had "QSL via RSGB" at the bottom). All outgoing batches of cards carry full instructions about return QSL's so if you mention anything about QRA for return cards just write "via I.S.W.L."

Finally, we hold a number of cards for the following readers, who are not Bureau members. Will the undermentioned please send along a supply of S.A.E's for mailing of cards already to hand and for future cards that may arrive:—

W. S. Savage, J. Blomfield, H. T. Groves, A. S. Adams, and I.S.W.L. members G4, G10, G15, G347, G380, G422 and G452.

SOCIAL ACTIVITIES

Middlesex Chapter: The inaugural meeting will be held on June 11th at the "Railway Arms," Uxbridge, commencing 7.30. This Chapter has been made possible by the untiring efforts of the CR, so please rally round, Middlesex members, and support your local group. We understand that

beer, minerals and sandwiches will be available, and this fact has lured a deputation from HQ to attend the first meeting! Further details from:—L. M. Harris, 93 Long Lane, Hillingdon.

Birmingham Chapter: An attendance of 15 gave a good start-off to the first meeting in the new clubroom. A committee of three was elected (Chairman, Treasurer and Secretary), and meetings have tentatively been fixed for the first Friday of each month. Meetings start at 7.30, with morse class until 8, when the meeting proper starts. A subscription of 1/- per month was decided upon. Among the proposed future activities is a visit to the Eddystone factory. Birmingham members, and readers, not already in contact can obtain all details from M. B. Taylor, 136 Alvechurch Road, West Heath.

South London Chapter: Still making good progress, with an ever-increasing membership. South London members please note the CR's change of address to: W. A. Martin, 21 Brixton Hill, S.W.2.

Karachi Chapter: The newly formed Indiana Radio Society is the first society organised entirely by Indian Nationals. Under the secretaryship of D. C. Shahani, the society is making great strides and publishes a monthly magazine "Electronews." The objects of the society include the promotion of Amateur transmission and reception in India. The Indiana Radio Institute, another branch, is conducting training in such spheres as radio servicing and so on.

The society has decided to affiliate to the I.S.W.L., both societies having much in common, and the society's meetings have been made an I.S.W.L. Chapter. Members of H.M. Forces serving in Karachi area are assured of a warm welcome at any meetings. For fuller details, please write to D. C. Shahini, Indiana Radio Society, Frere Road, P.O. Box 185, Karachi.

CROWDED OUT!

Unfortunately, we have had to hold over until next month the latest list of new Representatives (including the first list of U.S.A. State Representatives) and the preliminary announcements of the "purge" of scrappy reporting. Sorry, O.M's, but paper is unfortunately not elastic!

FROM OUR MAILBAG

THE QTH CASE

Dear O.M's,

The reason that W's use QTH is that the A.R.R.L. tells them to. A *QST* of ten years ago advocates the use of QTH, so how is QTH-itis a new fashion? My Q-Code book gives QTH as "The position of my station in latitude and longtitude, or by any other means." What could be more clear?

We need no new signal, for QTH fills the bill exactly. If you want to argue you will find me on 3565 kcs. almost every evening!

73,

Bob Eldridge, D2GQ/G3AGQ (B.A.O.R.)

Dear O.M's,

I agree wholeheartedly about the use of QRA and QTH. The day has come, as you foresaw—as I advocate the use of the Z-Code! My reasons are that, for instance, QSB means a signal is fading, but in the Z-Code, ZFS, ZFB and ZFO indicate exactly what happens. Another, QSD, means "your signals are indistinct." Why not say exactly what is wrong by using ZSU (unreadable), ZDL (dots light), ZDM (dots missing), or ZBS (signals blurring).

There are many more examples but these are representative samples of how the Z Code is more useful than the Q Code.

73, and best wishes,

Bryan Taylor, G3AKF (Catterick Camp).

Dear O.M.,

Thanks for the timely editorial on QRA v. QTH. The former signal has served the ham fraternity since its early days, and the people who condemn its use are merely splitting hairs. I notice that the chief sponsors of the adoption of QTH (which was first inflicted on the ham world by the A.R.R.L.) have previously campaigned against the useage of American terms and slang into amateur radio!

I remember that at the Cairo convention of, was it, 1938, the QSA/QRK system was put forward as the future signal reporting system to be used by hams. Everyone ignored it. So they should with the unnecessary QTH.

Sincerely yours,

L. Howes, G3AYA (R.A.F., Norfolk).

(These are typical extracts of letters received on the subject. Unfortunately, we cannot give G3AGQ any further supporting letters because his was the ONLY one we had that supported the use of QTH! By "new fashion" we meant new in British ham radio. As far as we can remember the term was never used before the war over here.—Ed.)

A Ground-Plane Aerial For 28 Mcs.

(Editorial Note: We present the first in an irregular series of articles dealing with specific aerial systems. Each article will be written by a well-known amateur operator. The first article appearing below, is by G2CR.)

By Dr. S. O'Hagen, G2CR.

THE vertical aerial has very substantial advantages over the horizontal where it can be erected over a good level conductive earth, such as a lake or salt marsh, and at high frequencies, where it can be made self-supporting, it presents yet another virtue.

The 28 Mcs. band, more than any lower-frequency band, is dependent upon an efficient aerial, because only the power radiated at angles of 8 degrees to 12 degrees above the horizon is of any value for communication. To radiate an appreciable proportion of the transmitter output at these angles, a horizontal half-wave must be at least 40 ft. above ground and the cost of masts becomes considerable.

Now that semi-flexible aerial rods are on the market, it was decided to design an aerial system using these rods that would give the maximum radiation at low angles. A suitable aerial had already been described for 112 Mcs. by E. Dillon Smith (W3PZ) in *QST* for August, 1945. This utilises a vertical aerial element and, by the use of four horizontal rods mounted radially at the base of the aerial, a virtual earth-plane is created which causes the aerial to behave practically as if it were a vertical quarter-wave mounted immediately above a perfectly conducting earth. It can be shown that such an aerial radiates very effectively at low angles and wastes almost no energy at high angles. Experimentally, it is found that it works equally well over a whole amateur band without adjustment and that no "cut-and-dry" methods are required in resonating it.

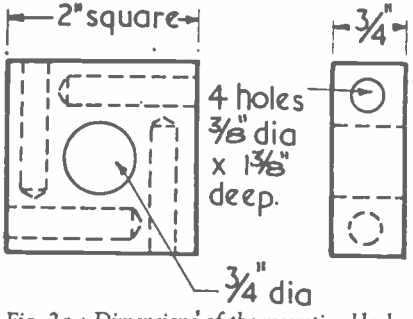


Fig. 2a.: Dimensions of the mounting block.

The ground plate aerial can conveniently be built from ex-Army 38 Set aerial rods. These aerials consist of three tapering steel tubes, copper clad, which plug into each other to make a rod approximately 12 ft. long. Five sets of these rods are required also a four foot six length of brass or copper tube of ¾in. inside diameter and two small pieces of solid brass or copper for fittings. The only insulation is a couple of polystyrene rings, cut from ¼in sheet.

The general appearance of the ground plane aerial is shown in Fig. 1, with the details of the matching transformer construction and connection to feeder being shown in Fig. 2. The impedence of the vertical quarter-wave is matched into 75 ohms coaxial feeder by means of a linear transformer composed of the ¾in. tubing containing, coaxially within it, the bottom section of the vertical element. The inside conductor must be rigid enough to support the aerial in a wind without bending and shorting to the outer sheath. This is assured by mounting a polystyrene ring half-way up the tube and another, flanged to exclude rain, at the top of the tube. The bottom of the inner conductor is shorted to the outer by being mounted in a brass block turned to fit the inside of the outer tube as a driving fit. The matching transformer is approximately one-eighth wave length long and is of 41 ohms impedence. The exact length, for 28 Mcs. is **53.2in.** and for 29 Mcs., **51.6in.** In practice there is no appreciable change in performance over the whole band if the aerial is designed for 29 Mcs., but if CW is the main interest then 28 or 28.5 Mcs. may be preferable as the centre frequency.

The upper end of the outer tube is tapped with a male thread to engage with a similar thread on the block of brass used as a mounting for the radial rods. The mounting block for the radials also serves as a terminal for the sheath of the coaxial cable, the core of which is connected to the base of the vertical radiator immediately above the top of the block.

The aerial may be mounted anywhere and requires no external insulation. The sheath of the feeder and the matching transformer retain earth potential at all times and only the ends of the radiator

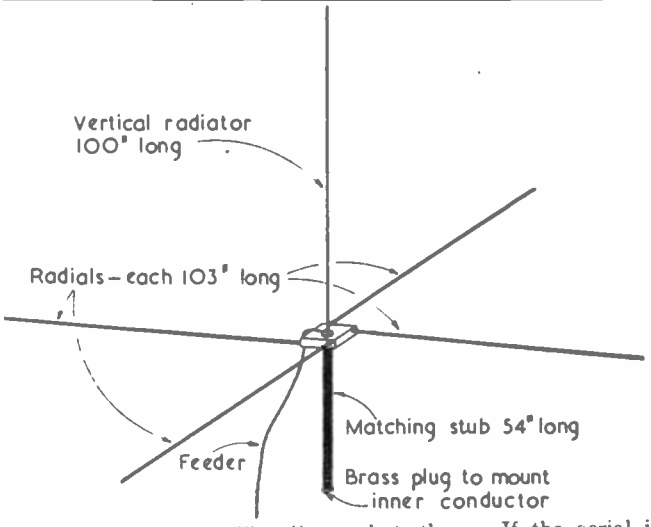


Fig. 1.: General impression of completed aerial. Dimensions given are for 28-29 Mcs.

and the radials are "hot," so that the aerial may be strapped to a pole or a chimney stack, or, as in the author's case, strapped to the cover uprights of an Army Utility Truck for portable work!

Regarding the cable, any 50-72 ohms cable can be used as the feeder with negligable losses, and of these the Telcothene PT1M will be found convenient, cheap and light. It is only ¼in. diameter and quite flexible.

The four radials are each composed of the upper two sections of a 38 Set aerial, with a few inches of the bottom section to make the total length of each radial 104in. The vertical radiator is rather shorter and plugs into the inner conductor of the coaxial matching stub so that the portion exposed above the stubs is 100½in. long.

If the aerial is to be permanently fixed into position, it would be well to weld, braze or solder all joints in order to ensure permanent low resistance junctions, but where this is not required the whole affair can become collapsible and be carried in a bag 5 ft. long and 4 inches wide.

Performance

This remains constant almost regardless of the type of the surrounding country—it is much less affected by the quality of the terrain than is the simple vertical dipole, whilst it retains the omni-directional characteristic. Over salt marsh there will not be much improvement by changing to a ground plane aerial, but over average or poor country the improvement is marked.

(Cont. at foot of next page)

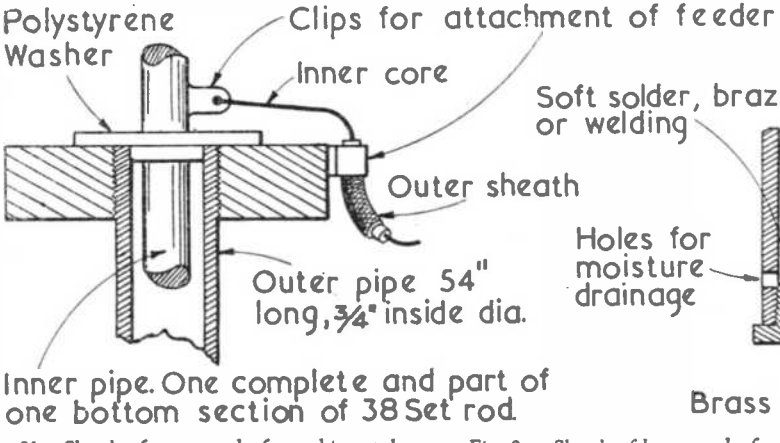


Fig. 2b.: Sketch of upper end of matching stub.

Fig. 2c.: Sketch of lower end of matching stub.

RADIO AMATEURS EXAMINATION COURSE

By D. Warner

PART 4: VALVE CHARACTERISTICS

BEFORE considering further the practical applications of the valve it is as well to investigate its characteristics and thus to gain a better knowledge of its operating principles. There are three main numerical properties of a valve, known among engineers as parameters. Three such parameters of a triode valve are the "mutual conductance," the "amplification factor" and the "impedance," and are usually denoted by the symbols "gm," "μ" and "r_a" respectively in manufacturers' literature. A fourth constant is employed for the tetrode and pentode, namely the amplification factor of the control grid, with respect to the screen grid, the symbol employed in this case being "μ_{g1-g2}" The figure shows a typical curve in which anode current is plotted against grid voltage for a small triode valve. The point marked "A" in the centre of the straight portion of the curve corresponding to an anode voltage of 125 volts and a grid voltage of —1.25 volts has been taken as the working point, that is to say, the part of the characteristic for which the parameters are normally stated.

The mutual conductance is the slope of the curve at this point and is equal to the tangent of the angle "θ" or given by the expression

$$gm = \frac{\text{change in anode current}}{\text{corresponding change in grid voltage}}$$

In order that the figure obtained should be of the highest possible accuracy the grid swing chosen should be as small as possible. Taking a change of ± 0.5 volt on the working bias of —1.25 volts the change in anode current is seen from the graph to be $2.7—1.4=1.3$ mA. The value of "gm" for this particular valve is therefore 1.3 mA/V. It should be noted that the mutual conductance of a valve is measured whilst its anode voltage is kept constant; if, however, when the bias is adjusted by ± 0.5 volt the anode voltage is reset in order to bring the anode current back to its original value, the change in anode voltage thus obtained is a measure of the amplification factor. This property may be defined as the ratio of change in anode voltage to the change in grid voltage which separately cause the same variation in anode current

$$\mu = \frac{\text{change in anode voltage}}{\text{change in grid voltage}} \quad \text{(anode current kept constant)}$$

From the curve the amplification factor is seen to be

$$\frac{150—100}{2.1—0.4} = 30$$

a change in anode voltage of 50 being

(A GROUND-PLANE AERIAL—Cont.)

In Italy, over dry, rocky country, with a vertical half-wave, the 10 metre band was consistently dead with a carefully resonated vertical, but when the truck was moved to a position between a salt lake and the sea, on salt-sodden sand dunes, signals came roaring in. When a change was made to the ground plane aerial no such change in characteristic were found and DX was worked from every site tried. In poor locations, the difference between the ground plane and the half-wave dipole with their bottoms at ground level was represented by the difference between S6 reports with the G.P. and no contacts and only S1-zero signals coming in with the half-wave.

Another feature that is theoretically possible, is to design the aerial to resonate at about 8 metres when it would work reasonably well over the 28 Mcs., television, and 60 Mcs. bands without adjustment.

The dimensions of the aerial are most uncritical since it is so broadly resonant, and merely halving or doubling all lengths is enough to convert the aerial for the 5 or 20 metre bands, though a modified scheme of construction would be required for 20 metres since the 38 Set aerial rods are not strong enough to stand horizontal in a 16ft. length, and even the vertical rod will wave in an alarming manner.

In installing the aerial, care must be taken in sealing the end of the coaxial cable against the entry of moisture between the polyvinyl chloride sheath and the braided outer conductor. The water-proofing wax, used on "tropicalised" components, will be found quite useful for this purpose, or the end of the cables may be gently heated to plasticise the polythene insulation so that it runs into the end of the braid after soldering to the sheath has been completed.

taken as a convenient value for this particular valve. The third parameter is the impedance or A.C. resistance of the valve. This is determined by swinging the anode voltage by an equal amount either side of the working point and noting the corresponding change in anode current. The impedance may then be calculated from Ohms' Law

$$ra = \frac{\text{change in anode voltage}}{\text{corresponding change in anode current}}$$

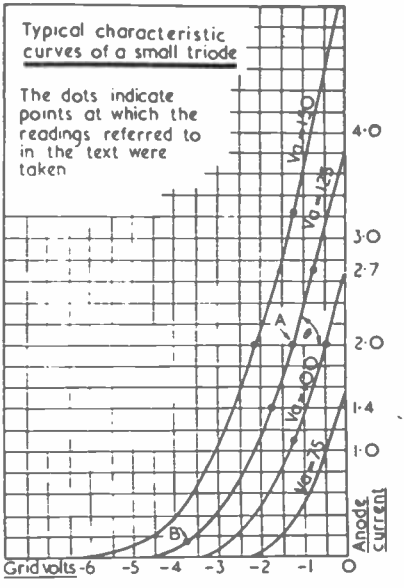
Using figures from the graph and taking a swing of 50 volts on the anode

$$ra = \frac{150—100}{3.25—1.1} = 23{,}000 \text{ ohms}$$

The three constants are linked together by the expression $\mu = gm \times ra$ (gm being measured in amps. per volt) hence it is only necessary to know two in order to determine the third. The amplification factor of the control grid with respect to the screen grid in four and five electrode valves is measured in the same way as the amplification factor for a triode and is normally stated in addition to the other three parameters.

For frequency changers and mixers the figure for mutual conductance is replaced by what is termed the "conversion conductance" this constant being defined as the change in anode current at the intermediate frequency produced by a unit alternating control grid voltage at the signal frequency. The symbol "gc" is employed to denote this parameter.

The position of the operating point on the characteristic curves shows in which mode or class the value is operating. When the working point is at "A" the valve is said to be working under "class A" conditions, point "B" represents the working point for class B and any point more negative than the cut off point is known as the "class C" operation condition. Intermediate positions between A and B are known as AB_1 and AB_2. The various applications of these different classes of operation will be discussed in the next issue.



(V.H.F. NEWS—Continued from p.143)

South-East Area Monitor Station Report

Cyril Greenaway is unable to continue acting as Monitor Station for the S.E. area due to pressure of business. We are very sorry to lose him, as it was his idea in the first place to start monitor stations and "regionalise" VHF activity. We welcome in his place James Bramhill, 2BMI, of 27 Oakleigh Road, Hillingdon, Middlesex, to whom reports should be sent in future. He reports as follows:—The following "locals" are active, 2WS, 2MR, 2JU, 2MV, 2YL, 2NH, 4DN, 4IG, 5MA, 5PY, 5LY, 5AS, 5OO, 6FO, 6VX, 8GX, 8SM. New stations heard were 2IY, 2MC, 2CUA, 3AR, 5RD and 8RS. 2IV, 2IQ, 2XC, 3AAK, 4OO, 5DT, 5RP, 5BY, 5US, 5BM, 6GR, 6YU, 6CW, 6NA, 6DX, 8LY, 8QX, 8WL, 8IG and 8OS are all known to have been active.

5BM new to 60 Mcs. has worked 6VX. Looking back over the month, activity in this area has increased slightly—the 8th May sounding almost like 7 Mcs. on a Sunday morning! Activity always seems to be on the increase after 10 p.m. May this be due to the television programme or is it due to few calling "CQ" before this time? 6VX is very lucky as he has a receiver which goes up to 800 Mcs.—he has no worries re the new allocations! 2MC has been experimenting with a new rotating beam—with some success. 4DN and I believe, 6YU have been on with F.M.—not very wide band as it can be received on a straight receiver, though somewhat distorted. 2CUA is doing good work using a Telefunken LS50 in his final with suppressor grid modulation. It is a pity people use christian names instead of their call signs. Maybe they are just shy!

WORLD NEWS

THE ROLE OF RADIO IN AUSTRALIA

By Rex Gillet

(With acknowledgments to "Radio Australia" for material supplied.)

WITH no fewer than 129 MW stations, Australia is perhaps more extensively served with radio entertainment than any other country in the world. With a population of seven million, this works out at one station for every 56,000 people. As a matter of interest, the U.S.A. has one station for 127,000 people, and Great Britain only one station for every 3½ million.

In addition to the MW stations, which radiate 450,000 hours of entertainment every year, there are five short wave stations catering for listeners in remote parts of the country, and, of course, the "Radio Australia" transmitters for international service.

Australia's present-day broadcasting services have grown from humble beginnings way back in 1920, when the first demonstrations of broadcasting and receiving were given in Melbourne. Amongst the pioneers were the Commonwealth Government Radio Service, Amalgamated Wireless Ltd., and some notable individuals—the most prominent being a young Englishman named Ernest Fisk (who had worked with Marconi) who had received the first direct radio message from England at his experimental station at Wahroonga.

The first proposal "to provide a concert service," as it was styled, was made by Amalgamated Wireless in July, 1922, and the following year a "sealed set" scheme was launched. Under this arrangement the listener bought a set, sealed to one frequency, only able to receive one given station, to which a subscription fee was made. As only 1,400 listeners took out licences (for four stations) the scheme fell through.

A new plan, on which the present system is essentially based, was evolved in July, 1924, which provided for two types of broadcast service. Class "A" stations were to receive most of their revenue from listeners' fees, but could broadcast advertising for one hour in twelve (the latter provision has since been eliminated and the present day National stations do not radiate advertising matter). Class "B" or commercial stations were to be entirely dependent on advertising and other sources. A general licence fee was required from listeners to the Postmaster General.

In the first year 38,000 licences were issued and by 1929 there were 310,000 licences in force—in other words one licenced receiver for every five people. As the average number of persons in an Australian home is just over four, the potential radio audience is more than six million.

To overcome the weakness due to most stations concentrating on city, rather than country areas, the Commonwealth Government placed a contract with the Australian Broadcasting Company to take over all Class "A" stations. In 1932, the Australian Broadcasting Commission was appointed in its place in order to broadcast adequate and comprehensive programmes in the interests of the community and to encourage local talent. Its functions now include the gathering of Australian and overseas news. The Commission's sole revenue is derived from a portion of the listeners' licence fees, which amounts to eleven shillings from each pound fee. The balance of these fees go towards technical services of the National stations.

So today, Australia has a National broadcasting service functioning side-by-side with a service provided by privately owned commercial stations, with a combined service throughout the urban and rural areas. The actual proportion is 29 National stations and 100 commercial stations. The keen competition naturally keeps both types of station "pepped up" and the demands and tastes of the listening public are under continual study.

BOOK REVIEW

REFERENCE DATA FOR RADIO ENGINEERS. Compiled by W. L. McPherson, B.Sc., M.I.E.E., S.M.I.R.E. Pp.175. 2nd enlarged edition. Standard Telephones & Cables, Ltd., London. 5s.

Originally compiled for the use of the engineers on the staff of Standard Telephones & Cables, Ltd., the book met with such a response that it has now been made generally available. The original material has been greatly expanded, with new or enlarged sections dealing with transmission lines, wave guides, aerial radiation and propagation, selenium rectifier practice, the analysis of non-sinusoidal waveforms, and so on.

Much of the contents will be beyond the average reader of this journal, but it is certainly worth investigating by those engaged in the design of radio and allied apparatus, and by those who have a flair for mathematics and still regard their "hobby" from an experimental viewpoint.

C.O.

The G.P.O. M.U.S.A. Receiving Station at Cooling Marshes

STATION DESCRIPTION No. 11

ONE of the most interesting radio receiving installations in the country is that operated by the G.P.O. at Cooling Marshes, Kent. This unit is used on the Transatlantic telephone service and was built to ensure a readable signal even when conditions are at their poorest.

The system is known as the Multiple Unit Steerable Antenna System, or M.U.S.A. The principle used is based on the fact that short wave radio signals can be said to arrive at an aerial in discreet "bundles," each arriving at a different angle from the ionosphere above due to its having traversed a slightly dissimilar path. Not only do they arrive at differing angles, but each "bundle" is out of phase with the others, and it is the combination of these out of phase signals in a simple aerial which produces fading and audio distortion in an ordinary receiver.

The M.U.S.A. system is highly directional in the vertical plane and is so arranged that the best of three signals arriving at predetermined angles is fed to the receiver. From the fact that the arrival angle of the waves can be "selected," the term "steerable" is included in the title. The "steering" is really electrical phase shift carried out by adjustments in the receiver in order to get the maximum response from any chosen angle, those signals arriving at an unwanted angle being automatically suppressed.

The "brain" of the equipment is the monitor, which shows on a cathode ray tube, the angles of the downcoming radio waves and their relative strengths. By looking at the cathode ray tube, the operator can see the strongest ray and measure its downward angle. He then sets the aerial "steering control" to receive only rays coming in at that angle. If conditions change, he simply alters the aerial control to receive at the new optimum angle.

The aerial system consists of sixteen rhombics erected in line on the great circle path to the American transmitter. They extend for 2½ miles! The transmission lines from each rhombic to the receiver consists of an outer conductor of two inch copper tube with an inner conductor of ⅝ inch copper tube supported concentrically by ceramic insulators. All joints are soldered and air at six pounds per sq. inch pressure is pumped into the transmission lines. This air is specially dried and serves the double purpose of keeping the insulation high and preventing any water seeping in should a leak develop in the system.

An idea of the elaborateness of the receiver can be gathered from the illustrations. One M.U.S.A. receiver occupies both sides of fifteen 11ft. 6in. and three 6ft. 6in. racks! The receivers are preset tuned as they are used on regular channels. Crystal control is used for all important oscillators. Each of the sixteen aerials feeds into its own H.F. amplifier, associated frequency changer and first I.F. amplifier working at 3.1 Mcs. From then on, the M.U.S.A. virtually divides into four separate receivers, three of which feed the speech paths and the fourth the monitor. The speech channels are six kcs. wide, thus permitting quality suitable for BBC relays such as the "Transatlantic Quiz," etc. The most important units in the receivers are duplicated and are fitted with change-over devices which operate automatically should the normal unit fail.

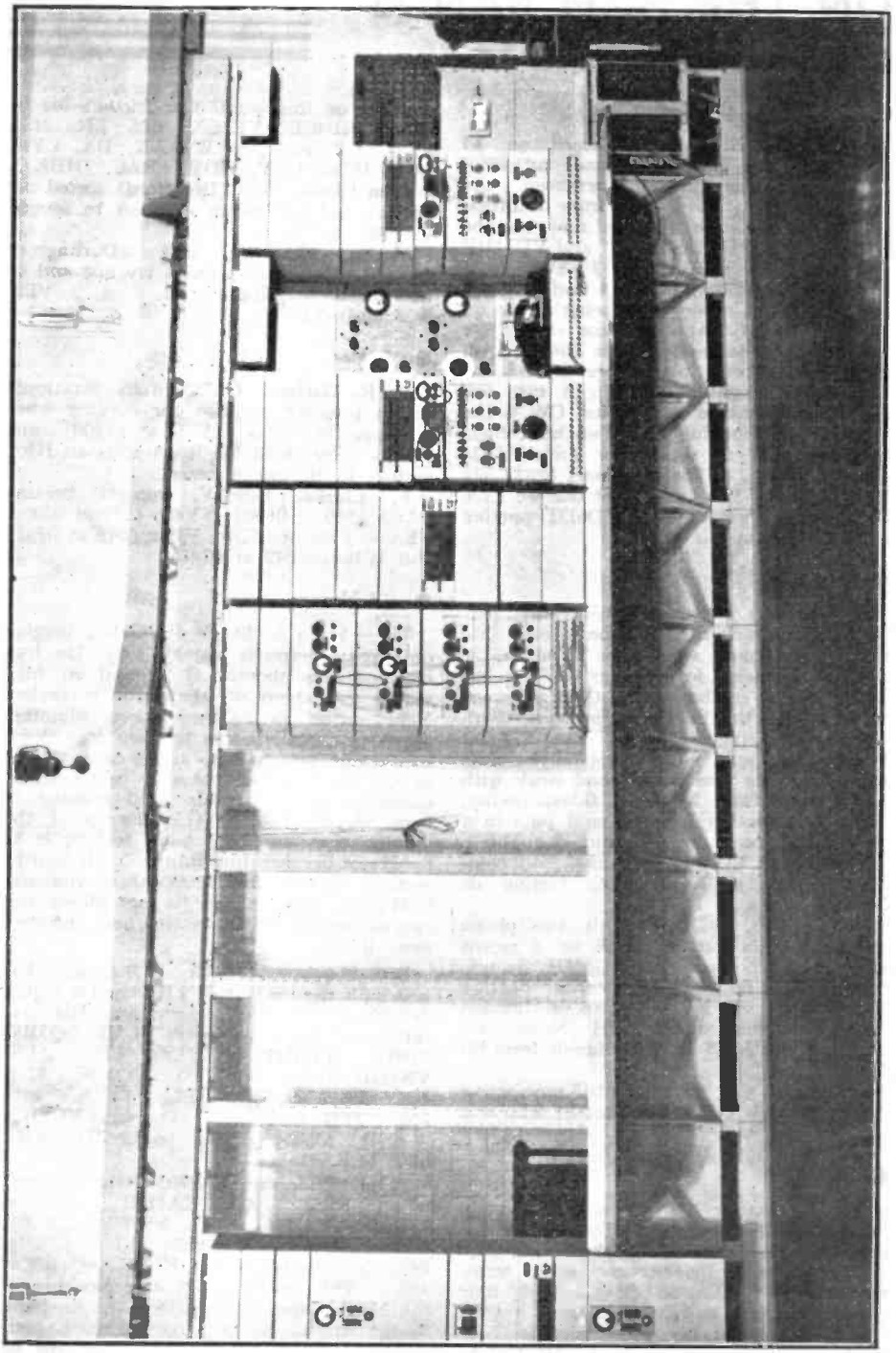
The Cooling Radio Station is the only one of its kind in this country and it will be seen from this very brief description that the M.U.S.A. system is a complicated one. Each receiver uses over 500 valves and consumes 5 kW. of power! M.U.S.A's maximum advantage is obtained when conditions are poor as at such times normal receivers are unable to produce commercial circuits. Coupled with the fact that M.U.S.A. produces a better circuit than ordinary receivers, this factor justifies the extra complication and cost when used on Transatlantic telephony.

THE "S.W.N." QRP CONTEST

Just to remind you that the QRP Contest will be held over the period July 19th-July 26th. Full details were given in the last issue and will be repeated in the following (July) issue.

One of the contestants-to-be, G3XV (Len Stevens of Wellington and incidentally no relation of 3AKA!) has kindly offered two QCC crystals for the winning station, the victor to select his own frequencies. That's real ham spirit, O.M., Thanks.

So there we are. Get those battery rigs in working order and join in the fun!



100 kcs. crystal oscillators and line test apparatus at M.U.S.A.

ON THE HAM BANDS

Conducted by "CQ"

● Stations of the Month

INTERESTING station heard on 14 Mcs. was LAV, on board an aeroplane over the Mediterranean. Op. was LA2UA . . . Latest from Bahrein, making four active stations now on the island, are VU7JU (ex-G3JU) and VU7JUP . . . Look for FK8BB and FK8VB, from New Caledonia; active on 14 and 28 Mcs. . . . VS8AA is reported as being active on 14 Mcs. . . . Latest expedition station for the Brazilian Solar Eclipse is the Swedish SH2D with strong 'phone sigs on 14 . . . W3EKK is portable in VK9. A rare one . . . VQ8AK heard on 14 Mcs. CW is the latest from Mauritius . . . Two newcomers from Sarawak to search for are VS4RM and VS4BJ . . . The Solomons heard via VR4AA on 14 Mcs. . . . First one we have heard from Nyassaland is ZD6DT putting out a fine signal on 14 Mcs.

● Top Band Notes

Activity has increased considerably, particularly from North London areas. One wishes that more would use break-in, as it not only makes for speedier working but is one way of combating the QRM. A word of praise for the boys who persevere with QRP. G3ta (Ivor Heath) was 577 at Wilton, Salisbury, when using only 1 watt input. G6sy is also doing good work with his 3 watts from batteries. G3asj (Selby, Yorks.) is another 3-watter and puts in a good signal into London during daylight.

Who is the G3 who has gone "all commercial" by sending "ABC Testing de G3 . . ."?

Congrat. to G6CT/P on his fine 'phone signals from a car in Essex on a recent afternoon. Accompanied by G6MH, he was running the Tx off car batteries. Further bouquets go to GW2HH (R6 in London during daylight) and G3AUH (Notts.) for his consistent R7-8 daylight signals from his 8 watts input.

Another of the "old brigade" now active on the band is G6ci (Kenilworth) who was licensed in 1925.

● 3.5 Mcs.

A. H. Onslow (Hove) says his main interest at the moment is DX on the LF bands, as the DX chasing on 14 Mcs. does not agree with his nerves. Noble sentiments! On "80" he has logged nine U.S.A. districts and has just had a QSL from W6OGM for his 'phone signals. Nice work, O.M. Has anyone heard all U.S.A. districts on this band? Our friend's log includes KP4CE, VE1CX, EN, LR, 2LB; 25 W1, 2, and 3's; W4AAK, BA, CYM, DSK, HTG, LRY, MDY, 8RAC, 7HBK/3.

John Clarke, G10 (Brentford) sorted out KP4kd and CM2sw in addition to several VE, W and VO's.

Martin Harrison, G54 (Darlington) decided to give the band a try out and on the first session logged W1, 2, 3, 9, VE1, 2, 3 and VO.

● 7 Mcs.

G. R. Garland, G538 (Stony Stratford) had a pleasant surprise one evening when he logged ZL4aa (579 at 1800) and PK4kk (589 at 1815). Receiver is an HRO with a 15 ft. indoor aerial.

F. Clarke, G2FAY, reports hearing FA8ih (589 at 0800), NY4fb (559 at 0700), VE3alo (569 at 0720), VP9e (549 at 0745) and W4kxe (549 at 0740).

● 14 Mcs.

There is no doubt about it—DX logging on twenty metres is just *too* easy! The logs received this month, if printed in full, would just about fill the entire magazine. Your scribe makes one more plaintive appeal for contributors to keep logs down to sizeable proportions, as we cannot hope to list anything but the very best catches. Commenting on the size and number of logs, Bryan Taylor (G3AKF) is of the opinion that our ham band feature is in danger of degenerating into a "calls heard" section. Heaven forbid! So there you are, O.M's, no more mammoth logs please and concentrate on the interesting and "meaty" news items.

Bill Harris, G42 (Great Bealings) has just built the "S.W.N." TRF3 and is highly delighted with the performance. His best catches of the month were EL5D, OQ5BW (1803), PK4HB, VP2LA, 4TU, 4TR; VN1HB (who is this?), VQ2HC, 4DJ, 4QC; VS1AK, 3HL, 3PL; 14 VK's with 7NC, 7TR and 4NK (Papua); VU2BQ, ZC6DD, 6WD; ZS1A, 1AH, 2D, 2GU, 6FC, 6LF.

J. H. Endersby, GW703 (Old Colwyn) reports EL5B (1900), KA1HR (Q5 R6 at 1820), VE8MA, NW; VS7MB (1850), VP5AJ (Q5 R6 at 1950), YI6C (2030), ZC6DD. Also heard was KLPG (Q5 R9 at 1830). This station is in a steamship, off the North Cape, sailing along the ice bank in the Arctic. He is a Norwegian Experimental Mission in the North and will be

G2HFB (W. Rawlings) at the controls.

there all through the summer, returning to Norway in September or October. The power used is 200 watts from a Telefunken Tx and Rx. The op. says that it is no use sending SWL reports as his only contact with civilisation until October will be by Radio. (Thanks for the fine data, O.M.)

A. H. Onslow has some good ones in C1CH, CP1AP, 1AX; J9AAW, 9COC (Marshalls); KA1AK, 1AS, 1SS, 5KUG (?); KG6AI, KH6FT, 6HO; OQ5BW, PK4HB, VP2RA, VS1AK, 1BF, 1BU; VU2AN, 2DG; W6ONP/KW6, WoMCF/C1, XZ2AA, 2AJ, 2BA; YI2JJ, YS3PL, ZL2GX.

A. Baldwin, G193 (Leytonstone) lists I6usa, KH6mb, EP4aa (1700), OQ5av, TG9jk, VQ2gw, 3hjp, 5jtw; XE1h, ZC6dd (1920), ZL1hy, mr, 3cx, ZS6dj, 6kf, 6ly; CO6BD, VQ4ERR, VU2BQ and ZS2AL.

Conrad Tilly, G211 (Bristol) has heard an enormous amount of 'phone DX, including C1CH, 1JC, 7JG; KA1HR, KG6AD, PK4HB, VP2AD, AT, GB, LA, MY, 8AD; VQ4AJI; VS1AK, BU, 7ES, GR, MB; VU2AC, AF, BQ, BV, BY, CQ, DG, KB; XZ2BA, HD; YI4N, 6C; ZD6DT (Nyassaland), ZL1KJ, 2BE, 3JD, 4AO; ZS1T, U, 2AZ, 2BJ.

Jean Beaunoir, ZS516 (Natal) logged G5RL, VQ4ERR, 8AD; VU2AF, SJ, CQ; VS7ES, GR; ZD6DT, PZ1GB and ZE1JS.

Peter Somssich, HA8S (Budapest) heard C7hy, EL6sx (data please), I6usa, J2er, 9acs; OQ5ll, ST2am., VQ8ae, VS7it, os; VU2hq, cw and ZS6jw.

Doug. Brabner is stationed at Catterick Camp and says that not only do they hear the DX up there but they *meet* it! For instance some of the "residents" are G5KW/SU1KE, G5YN/AC4YN and W7IRS. Doug's log includes C1an, 6yz; J9acs, KA1zu, KL7jm, um; OQ5lb, PK1md, 2dc; VQ2cw, jx; VS1bu, by, cp; VS9an, VU2zz, 7by; ZD1kr, ZS1ci, 6an, 6cy and very many VK, ZL and so forth.

D. L. McLean (Yeovil) comes forward with his selection; all heard between 0600-0630. KH6GF, LI2BO, MD5PC, VE7AIE, VK4NK (Papua), 7NC, 7TR and 18 others; VP2LA, 4TU; VQ4JBC, XE1LE, YI6C, YS3PL, ZC6DD, ZL2FF and ZS6FC.

Robert Collett (Birmingham), KA1ABA, 1AL, 1JM; K6ETF/KC6, VE8AJ, VQ2HC, 4ERR, 4JBC; VU2KB, 2QB (1900), W6ONP/KW6 (1920), ZL1KJ (0730), ZS2AF, 2BJ and XE1LE.

Martin Harrison logged between 0600-0630 CO6AP, VP2LA, 4TU, W6OLD/KH6, XE1LE, YN1HB, YS3PL and a long list of VK's.

R. W. Ainge, G219 (Crewe) heard on his 0-v-2 KH6HO, NY4ZQ, TG9AV, 9NG; VE8AS, YS3PL (not CL, O.M.), YN1AJ, 1LB, 1LN, 1HB; ZC6MN.

And here are the best from the remaining logs: D. Horne (Leeds): EL5B, HH5PA, KLPG, VE8MQ, YV5AB, YS3PL: J. Edwards (Exmouth): CT2AB, HC2OA, KP4AU, TI2OA, VE8MA, VK2GU, VP4TE, UT. G. A. Ensor, G589 (London, N.W.7.): C1CH, PZ1L, VK6KW, VP2LA, VS1BG, VU2BQ, ZS1CI, 6LF. Dave Hayes G323 (Hertford): EA9AI, HK1PZ, EP4CO, VK7NC, VQ4JBC, ZS2AL. Albert Lincoln, G289: VP4TE, VQ4ERR, VK2KG, XE1QE, YI2CI, ZC1AL, ZS2AF, 6LF. W. A. Hennessy (ex-HZ2JA): EL3A, HZ4DO, KZ5AL, VU2AN, 2BF, 2CB; ZS1BV, 1CN, 1T, 6WD. Finally, thanks to Ron Young, David Webster, G. O. Breasail, G. R. Garland, Leslie Waine, W. S. Savage and others for logs.

● 28 Mcs.

D. L. McLean heard, between 1100-1200, 1400-1500 and 2000-2130, the following calls: HI6O, HH5PA, OQ5AR, 5BA; VK2ADC (1140), 3AHB; VP4TE, TZ, TF, 6FO, YB, 9F; VS9AA, AB; XZ2YT,

ZE1JM, ZL4AT, ZS1CN, BO, P, T, U, 2AF, AZ, 5BZ, 6CX, DW and FD. Also many Latins and so on.

Reg Masters, G407 (Portsmouth) reports CR9AG, J9AAI, AAY; KA1AI, W6VRF/KG6, KG6AF, AO; W6ONP/KW6, VS1BJ, 9AB; W4BOW/J9, XZ2DN, YI2AT, WM; ZL1MB, 2CY, BT, 3AW, AY, BN, LC, LE; ZS1H, P, T, 2AF, 4H, L, 5DG, 6BJ, DW, FU and JB. Very nice log, indeed, O.M.

A. L. Slater as usual has some good DX to report. The best ones are: C3LT (1245), J9AAY (1130), KG6AE, AO (1145), TG9JW, VQ5DES, VS9AA (1130), W7IOR/KG6, XZ2KM (1520), YI2WM, 7G; ZC6FP and WP (1740). Al is soon to replace his aerial by a two-element beam, as his present aerial is inefficient (so he says!) Another innovation will be an aerial for 3.5 Mcs., all ready for intensive DX work on the band next season. Al. says that DX is really getting too easy on 14 and 28 Mcs. and "doesn't thrill me much any more." Wish a few more would think on those lines!

J. N. Trye, G570 (Nuneaton) winds up with KA1AK, VU2BJ, VK3FT, KX, OP, XJ; VS9AB, ZC6FP, J2MAK, PK1MF, W3JRF/KG6 and ZL4AT.

A rare card, received by G4GI for 14 Mcs. QSO. The attractive card has red letters, blue and buff map, which show up the liberal doses of Arctic snow.

● DX Worked

G6GH, Geoff. Hutson (Boston, Lincs.) sends along another list of rare ones. Last month Geoff. worked VU7br (at 1735), W7ong (0600), XE1a (0650), XZ2em (1810), VP8ad (South Georgia Is. at 2030), KG6ai (2000), ZK1ab (1905), ZD1kr (2000) and UJ8ad (2000).

G3DO, D. A. G. Edwards (Sutton Coldfield) has also worked some good DX. The best are K6ETF/KC6 (Canton Is.), KP6AA (Palmyra Is.), ZK1ab, VK4NK (New Guinea), CZ70 (Turkey), YU3b on 14 Mcs. and VR2AB, W7IOR/KG6 and W3JRF/KG6 on 28 Mcs. 3DO has worked 116 countries post-war on 14 and 28 Mcs. with a 33ft. long end-fed Zepp. Two rotary beams are in course of construction and we await the results with much interest.

G2ABK, Norman Hodgson (Spilsby) has been doing well on his 18 watts. One week-end he knocked off T1NS, W9VGK, W2SXV, W2EL, W8SAD and VK2PU.

G2FAY, F. Clarke (Oldham) is another low-power station. With 12 watts and a 66ft. end-fed aerial he worked SM, LA, OE, ON, PAo, F, D4 and W4 on 7 Mcs.

G2SO, Mal Geddes (Leigh-on-Sea), entered a local QRP contest and in the two nights he was on had two contacts on top band and 13 on 3.5 Mcs. He mentions the ease at which contacts were made on the latter band with his 2 watts. An OZ gave him 579 and when the power was reduced to .85 watts the report read 559. Other contacts were with OK (559) and two QSO's with HB9. Which all goes to show . . .

G3XV, Len Stevens (Wellington) has been rather inactive, but managed to contact VE2jl for a new country on 7 Mcs. A new Tx is nearly ready so we are expecting great things!

Incidentally, to all those who have written in supporting a QRP Corner in the "S.W.N.", many thanks indeed, O.M's The support appears to justify the new feature and so we will go ahead with the idea as soon as possible.

● DX QSL's Received

J. Bowes-Taylor: 14 Mcs.: CM2SW, C08MP, KL7UM, VK2PX, VP9K, W6PB, 7AMX; ZS1DU. 28 Mcs.: VE6LA, W5CNK, HGW.

A. H. Onslow: HZ1AB, J9AAW, KZ5NA, OX3GC, VE8NM, 8AJ, 8AS, VQ4ERR, 4JBC, 6HOJ; CS1BU, 2BG, 7MB; VU2XL, W6OGM (3.5 Mcs.), 6ONP/KW6, 7JUO, 7FST, 7GVN; XE1AC, 2IY; ZL2GX, ZS4D, 4L.

D. L. McLean: HK1DZ, LI3JU, OA4BE, PY1FO, TR1P, VE8NM, VK2ALR, 3GM; W6PDB, XZ2YT, ZS2CI, YI7G and ZE2JA.

J. N. Trye: CO8MP, TR1P, EK1AD and ZS1U.

A. J. Slater: W9BNB/KL7, VE8AS, PY1FO, 6QM; LU4DC, YV5AC, VP4TE, ZS4D and ZE1JX.

C. G. Tilly: CE1AR, 3BM, 3CT; CX2AC, 2CO, 3CN; EP1C; LU1JC, 2FN, 4DC, 6AJ, 6MC; OA4M, OQ5AE, 5BH;

● Readers Reports Wanted

The following stations request reception reports from readers. 100 per cent. QSL.

G2AJ: 58.64 Mcs. Over 50 miles: 22 Beaufort Gardens, Hendon, London, N.W.

G2ABK: 3.5, 7 and 14 Mcs. Any distance: 3 Council House, Hundleby, Spilsby, Lincs.

G2DHV: 14, 7 and 3.5 Mcs. CW. Any distance: 63 Lewisham Hill, Lewisham, S.E.13.

G2DRT: 1863.5 kcs. CW and 'phone: 10 South Parade, Spalding, Lincs.

G2FAY: 7, 14 and particularly 1.8 Mcs.: 62 Chestnut Street, Chadderton, Oldham, Lancs.

G2HFP: 194 Downham Street, Blackburn, Lancs.

G3AJP: 3.5 Mcs. CW: J. D. Baker, 3 New Villas, Fritten, near Great Yarmouth, Norfolk.

G3AYA: 7 and 3.5 Mcs. CW: 64 Cavendish Road, Kilburn, London, N.W.6.

G3AZF: 181 Oakfield Road, Liverpool.

G3BEC: B. S. Clark, c/o 77 Southville, Yeovil, Som.

G3BGR: 7035.6 kcs. CW: "Hill Rise," Danemore, Welland, near Malvern, Worcs.

G3HT: 59.68 Mcs. Over 25 miles: 4 Gainsborough Gardens, Edgware, Mddx.

G4KD: 58.888 Mcs. Over 50 miles: 35 Gibbs Green, Edgware, Mddx.

G5BS: 1823.5 1755, 3510, 7050 and 7150 kcs. CW and 'phone: F/Lt. C. S. Bradley, The Old Vicarage, East Farleigh, Maidstone, Kent.

G6MN: 59610 kcs.: "Castlemount," Worksop, Notts.

G2UK/G2ATV/G3AKA: 28, 14, 7 and 3.5 Mcs.: c/o "S.W.N."

GM3BCL: 7150 kcs. CW: 87 Braemar Place, Aberdeen.

VE1QL/VE1VB: 3511 and 3713 kcs.: R. J. Morrison, Coldbrook, N.B., Canada.

VP9D: 14 and 28 Mcs. CW: J. A. Mann, R.N., W/T Station, Daniels Head, Somerset, Bermuda.

VQ4RAW: 3.5, 7 and 14 Mcs. CW: S/Sgt. Whiting, R.A., 404 (EA) Command, Light W/S, EAEME, P.O. Box 1013, Nanyuki, Kenya.

VU2XL: HQ Madras Signals Regt., Madras 9, India.

PY1AEB, 1CQ, 1FO, 2AY, 7AN; PZ1A, 1W; VP4TB, VQ4ERR, VS1BV, 1BS, 2BF; VU2KB, VK5NR, W6MLY, 6OCA, 6OZH, 7HRV; XZ2YT, 2DN; YI1CX, ZC4NX, ZD4AC, ZS1T, 2X, 5J, 6GV.

A. E. Lincoln: VE8AK, ET3Y and LI2BO.

R. W. Ainge: CO8MP, VQ4ERR.

W. H. Harris: CO2KO, VP5EM, LU1JC and W6MLY.

● Gossip

W4GSJ, the operator of FO8FN is now back in the States. Says he will QSL all SWL reports eventually. His QRA is West Lodge, Ypsilanti, Michigan. W3EPR (ex-EP1A) is also back home and will QSL from 1301 St. Paul Street, Baltimore, Maryland. This data comes from "Universalite."

The QSL Manager for the Fiji Islands is D. A. Leslie, VR2UH, Box 237, Suva. Present licenced hams on the islands are VR2AA, AB, AC, AD, AF, AG, AU, JI and UH.

G2QL (ex-ZD4AC) dropped in at the office the other day. He mentioned that anyone who has not had his QSL should send his card to him at his home QRA: 16 Lynton Road, South Chingford, London, E.

Isle of Man stations have now been issued with the new prefix of GD. GD6IA was heard on the air saying he was the only ham

DX PREDICTION FOR MID-JUNE TO MID-JULY

(14 Mcs. through courtesy of Geoff. Hutson, G6GH. 28 and 60 Mcs. with acknowledgement to Denis Heightman, G6DH. See note on page 136 of "S.W.N." Vol 2. No. 5)

14 Mcs.

0400—0500 GMT. W6, W7, VE6, VE7.
0600—0700 GMT. As above with KH6.
1600—1700 GMT. J, KG.
1700—1900 GMT. W6, VS1, VU, VS7, J, PK.
1900—2000 GMT. VQ3, 4, 5, 8.
2000—2300 GMT. LU, PY, CX.

28 Mcs.

Conditions for DX during this period will be poor and on several days the band may not open. Signals from the S.E—S.W., i.e., PY and LU, will come in with some regularity, but signal strengths will tend to be low. Best period of the day will be in the early evening when S. African and S. American signals should be heard. There may be occasional openings to the Far East and VK between mid-day and early evening. N. American signals will be mostly non-existent, though there may be occasional appearances in the evening. European signals via short skip are likely from 0700—2200 GMT. throughout this period.

60 Mcs.

This period should be the peak one for Sporadic E. Frequencies above 30 Mcs. should be watched from 0800—2000 GMT for DX signals. Short skip (800—1000 miles) may be found even when 28 Mcs. is dead for DX. Commercial harmonics between 30—50 Mcs. should be listened for as an indication of the possible occurrence of Sporadic E. Lack of amateur activity on 60 Mcs. may result in Sporadic E being missed—particularly in afternoons and early evenings.

on the island. He cannot know his neighbours particularly well as we have heard GD5CZ and GD3ADB!

The OH's are now on officially and OI2KAB is now signing OH6NS.

Another recent visitor was Ken Tackley, G3BRQ. He used to run XAGA in Greece and will soon be on the air with the call SVoAC (SVo calls are now issued to service personnel in Greece). Ken will be running a QRP outfit and wants G QSO's.

Regarding the feat of W.A.S., R. G. Holland, G3BPE (late of ST2AM) writes that G8IG has just completed his worked all States in a period of two years, G2AJ, by the way, says he needs South Dakota and Nevada.

R. Hogson, out in M.E.F., offers to listen for the QRP boys and to send any reports needed. His full QRA is 3058786 LAC Hogson, SHQ Signals, 107 MU, RAF, M.E.F.

The ME calls, recently issued to stations in Suez Canal Zone, have been changed to MD. Suppose MD must now be considered a new "country."

● Query Corner

Once again the TR1P/TA1T/PR1B query takes the stand. H E. Edinboro (G2O9) thinks we are wrong in suggesting that TA1T was a mis-read TR1P. This reader says he has heard both stations, so maybe we were wrong! Anyway, if there is a TA1T then he is a "phoney." We are fed up with "Turkish" stations anyway. J. H. Enderby (GW703) writes on the same lines, but says he cannot offer any constructive opinion. Am not surprised, O.M.!

GW703 goes on to mention other queer ones. They include P1ZZ, P1X, XF3C (not F3CX), SB5IB, AA6KJ, CK9DD, CK9UC. To which we can only say, rather weakly, "any offers, anyone?"

W. S. Savage presents us with TA3SO (yes, another one!), CZ70 and CX21AX. Well, G6GH says that TA3SO can be QSL'd via WoDAE. CZ7O says QSL to I1PQ. The latter has us beat.

A. Baldwin. G193, submits KN1ZA. No data here, O.M.

Conrad Tilly heard ZYX2 (Port Said, he said) giving a QRA in Surrey for QSL's. Can anyone supply that QRA, please?

K. L. Bromyard says can we help with HP4Q, EP3D, TF2AX and ET1JJ. Friend Bromyard is the luckiest this month as we know the answers to this bunch. HP4Q is via A.R.R.L., TF2AX is Box 284, Reykjavik, EP3D is QSL'd via R.E.F. (Paris) according to G. O. Breasail, and ET1JJ has been established as a definite phoney.

● Topical DX QRA's

Collected by your scribe, with acknowledgements to D. L. McLean, G3DO, G3BTA, A. H. Onslow. A. L. Slater and A. Levi for several of those listed.

CR7VAL: Post Office, Quelimane, Mozambique.

I6USA: APO 843, c/o PM, N.Y.

J3GNX: 126 Signal Service Station, APO 713, c/o PM, San Francisco.

J4AAA: H.Q., B.C.O.F. Signals, Japan.

J9AAL: P.O. Box 239, San Francisco.

J9AAW: 3rd Signal Service Bttn., APO 331, c/o PM, S.F.

J9KC: Navy 824, c/o F.P.O., S.F.

K6ETF/KC6: c/o C.A.A., Canton Island, Phoenix Group, South Pacific.

KP6AB: W. E. Fells, Jr. Palmyra Island.

LI2CL: RAF Signals, El Adem, M.E.F.

MD5AFA: WTFP, RAF Deversoir, M.E.F.

MD5KH: Communications Board, ME GHQ, M.E.L.F.

MD5PC: RAF Station, Kabrit, M.E.F.

PK6AX: Cantine-Laan 10, Macassar, Celebes.

PK6EE: P.O. Box 76 Macassar.

VP2RA: APO 867, c/o PM, Miami, Florida.

VP4TU: 155 AACS, APO 869, c/o PM, Miami, Florida.

VP5AL: Box 85, Kingston, Jamaica.

VP5RS: 100 King Street, Kingston.

VQ3TOM: Box 437, Dar es Salaam, Tanganyika.

VQ4REW: P.O. Box 581, Nairobi, Kenya.

VQ8AK: Le Reduit, Mauritius.

VR2AL: c/o Airadio Station, Naudi, Fiji.

VS1AK: c/o G.E.C., Singapore.

VS1AM: A. McLaren, 6 Marine Parade, Singapore.

VS1BU: Transmitting Station, GHQ Signals, c/o GPO, Singapore.

VS9AB: T. Brookes, RAF Khormakar, Aden.

VS9AN: C. C. Newman, Meteorological Officer, HQ British Forces, Aden.

VS9GT: RAF Shaijah, Trucial Oman, Arabia.

VU2AF: Bhowra Power Station, Jealgora P.O., Manbhum Dist., India.

VU2AN: G.H.Q. Signals, New Delhi, India Command.

VU2OK: c/o Inspector Adams, Head P.O., Bombay, India.

VU7JU: S. G. Abbott, Officers Mess, RAF Bahrein.

XZ2YT: Rangoon Signal Centre, RAF, S.E.A.C.

YI2AH: Meteorological Office, Habbaniya, RAF, British Forces in Iraq.

YS3PL: Prudencio Clack, San Salvador, El Salvader.

ZC6AN: Accra Radio Club, 6th Airborne Division, M.E.L.F.

ZC6FP/ZC6WP: RAF Station, Aqir, Palestine.

ZD2K: P.O. Box 570, Lagos, Nigeria.

ZD1KR: c/o Post Office, Freetown, Sierra Leone.

ZD6DT: c/o Royal Signals, Zomba, Nyassaland.

ZK1AA: S. G. Kingan, Raratonga, Cook Islands.

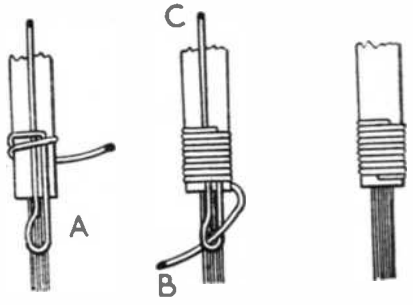
Those Little Details

DURING recent months I have visited the shacks and dens of many amateurs and have felt rather disturbed to see that the standard of construction and workmanship has deteriorated since pre-war days. It is undeniable that there are still many whose gear looks (and performs) like a first-class workmanlike job, but the percentage of slovenly and hay-wire outfits seems to be on the increase. The lack of components during the war years and the present austerity era, often necessitating junk-box revivals, may account for some proportion of this, but such improvisation ought not to be allowed to excuse an it-will-get-by attitude. In any case radio gear should look like an engineering job and not just a collection of odds and ends hooked together in a hurry. It reflects on the hobby, especially in the eyes of the professional radio engineer who collectively seem to regard the amateur, with a few marked exceptions, as being patently "amateurish."

It was said of a pre-war ham who spent many hours planning and then prepared a blue-print before starting construction, that his gear made professional apparatus look amateurish. Few of us can aspire to that level, but we can at least make our rigs look presentable and electrically sound, and in doing so, improve stability, eliminate noises and crackles, reduce liability to shocks and damage by shorts.

External Connections

There are many instances of sound construction following a published design where careless installation marred both results and appearance; long, untidy (and inefficient) leads, and poor connections with "whiskery" ends. If the ends of flexible leads are bound with thread (a colour coding can be followed if desired) further fraying of the covering is avoided and all the wire strands are easily kept under control. By using the method illustrated, the ends can be neatly bound and there are NO knots. A loop (A) is made and the free end of the binding wire wound along the lead. When sufficient turns have been made, thread the free end (B) through the loop A. Then just pull end B and end C until the loop A is pulled underneath the binding. Cut off end B and the job is done. This method is not only simple, quick and "clean," but it will also permit the leads to pass through their normal clearance holes.



Clumsiness

The beginner, and those with limited workshop facilities, normally resort to wooden panels and chassis lined with metal foil. Rigidly constructed these are the equal of a metal chassis, but unless carefully designed and made, their clumsiness makes an awkward job, both displeasing to the eye and a menace to stability and performance on account of long wandering leads. All too often, connections merely held by screw pressure are seen—these are a perpetual source of crackles and imperfect connections. All earth return leads and chassis connections, also each separate piece of foil used, should be soldered—then the film of oxide which forms on the metal surfaces cannot become the source of "frying" and "fireworks."

With the ever popular aluminium chassis run a strip of copper or brass foil across the underside of the chassis direct to the earthing point, and solder all chassis connections to it.

Rigidity

The heaviest gauge chassis possible should be used. True, it is harder to work but it does keep its shape and allows the circuits to retain their alignment. There are far too many flimsy chassis, and in drilling, the holes have often been "pushed" instead of being "cut" through, with the result a shallow depression is left around them. As a consequence many ceramic parts have been cracked and broken when tightened down. Such fractures also often occur because a burr has been left around the hole when drilling or for the want of the simple precaution of using fibre washers between the ceramic and the chassis.

Unglazed ceramics get dirty quickly and are almost impossible to clean except by dismantling and scrubbing. It is sheer craziness to use ceramic mountings and then permit a leakage path over a dirty surface. If a piece of paper is placed over them during the wiring they can be kept in brand new condition before wiring, say, a valveholder, push a small piece of paper

over the pins so the sockets are left protruding and the paper lies flush on the ceramic. Then, during soldering the connections, any splashes of resin, etc., will fall on the paper. When the wiring is complete the paper is torn away leaving the holder as spotless as when bought.

Lay-out

In many cases it was quite obvious that constructors had no very clear conception just where all the odd pieces were going to be positioned until the larger components had been bolted down and left there when trying for fit, with the result that they became scarred or chipped before the final stages were reached. Again there is a temptation for last minute additions to be hooked on with only one screw because the drilling of further holes was inconvenient. With original lay-outs play "chess" with all the parts before commencing any chassis work.

Far too many constructors do not trouble to use lock-washers or locking nuts, with the result that things work loose due to vibration, temperature, changes, etc., and far too many nuts are tightened with pliers. Always use spanners, preferably box spanners—at the best pliers cause scars on the brass and at the worst they completely ruin the hexagons.

A common disfigurement noticed were chasses from which the cadmium was peeling. This is often started by the heat used in soldering connections to them, and as moisture got in around the edges the peeling spread. This, like most other faults, is easily avoidable but can be so simply overlooked, to the detriment of consistent performance and easy maintenance.

Handles

I was glad to note the use of handles on panels of heavier equipment is growing. No doubt this is the result of Service experience where handles are almost universally used They not only add to the appearance but make for easy handling and are invaluable as "feet" when the set is stood on its panel for modification or adjustment when no damage can come to the meters, controls, etc. These handles are readily obtainable from all good ironmongers but in any case they can easily be made by the average handyman. For this purpose three forms are suggested, all of which can be made up in the home workshop. The first consists of a flat strip of metal, heated and bent to shape after suitable holes have been drilled for fixing.

The second uses a rod of about ⅛in. diameter tapped at each end and held in position by suitable (or home-made) brackets. The third is a single piece of solid rod, heated and bent to shape with the ends drilled and tapped to take 2 or 4BA bolts.

Wiring

Before concluding, it should in fairness, be stated that the standard of soldering was good—better than in pre-war days, due possibly to the more general use of electric soldering irons. Wiring too, apart from lay-out, was of a high order, although I am a firm believer in some sort of colour code and very few constructors appear to appreciate the many advantages of this. Quite a simple plan is all that is required, and such coding as Green for grid, Red for H.T., Yellow for cathodes, etc., is universally recognised. It means very little extra planning, and makes tests, experimental modifications and trouble-shooting, much easier.

An idea which may be of value to beginners—make a copy of the circuit you propose to use in pencil, and ink it over as each lead is finished. Apart from the extra ease in the initial wiring, you can resume from where you left off if interrupted; the possibility of unnoticed errors is almost completely eliminated.

Vincent Yap

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

Channels Discontinued (Delete)

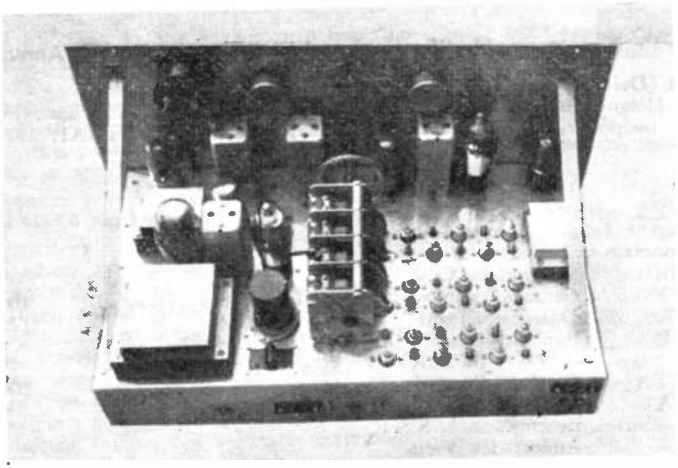
2390 kcs., Quarry Heights; 6005 kcs., "Radio Voralberg," Dornbirn; 6750 kcs., JVT, Tokio; 11720, OTM4, Leopoldville; 11850, Tokio; 12110, HI3X; 12120, THA1; 15220, HEI7.

Frequency Changes

YVKO from 4978 kcs. to 5019 kcs.; FK8AA from 6208-6160; Vienna from 6200-6172.

New Stations and Channels

6860	...	TGRB	Guatemala City		
6915	...	YVKO	Caracas, Venezuela	Radiodifusora Nacional	10000
6917	...	FZK6	Dakar, Senegal	Radio Dakar	12000
7040	...	YSI	San Salvador, El Salvador	Radio Intercontinental	100
7220	...	XUPA	Tai-Pei, Formosa		10000
7280	...	TPA	Paris, France	Radiodifussion Francais	20000
7342	...	——	Leningrad, U.S.S.R.		
9330	...	——	Andorra la Vieja Andorra	Radio Andorra	20000
9530	...	——	Warsaw, Poland	Polskie Radio	10000
9560	...	——	Tokio, Japan	Nippon Hoso Kyokai	10000
9640	...	CR7BJ	Lourenco Marques Mozambique		600
9610	...	CBFX	Montreal, Canada		7500
9620	...	TPA	Paris, France	Radiodifussion Francais	20000
9640	...	COX	Havana, Cuba	Radiodifusora Ministero de Educacion	5000
9655	...	JLS	Tokio, Japan	Nippon Hoso Kyokai	10000
9694	...	JVZ3	Tokio, Japan	Armed Forces Radio	10000
9820	...	XGOE	Kweillin, China		
11715	...	HSP5	Bangkok, Siam		900
11718	...	——	Kiev, U.S.S.R.		
11735	...	LKQ	Fredrikstad, Norway		7500
11830	...	XGOA	Nanking, China		
11836	...	——	Constantine, Algeria	Radio Algerie	2000
11865	...	HER5	Berne, Switzerland	Radio Suisse	25000
11885	...	——	Petropalovsk, U.S.S.R.		
11906	...	——	Hanoi, Indo China	Radio Viet Nam	
11960	...	——	Tiflis, U.S.S.R.		
12750	...	CSX	Lisbon, Portugal	Emissora Nacional	5000
14950	...	PZH	Paramaribo, Surinam	Avros Paramaribo	
15090	...	CBLX	Montreal, Canada		7500
15140	...	JLW6	Tokio, Japan	Home Service	20000
15170	...	TGWA	Guatemala City Guatemala	La Voz de Guatemala	10000
15227	...	JLT3	Tokio, Japan	Nippon Hoso Kyakai	50000
15230	...	——	Moscow, U.S.S.R.	Radio Centre Moscow	
		OLR5A	Prague, Czechoslovakia		
15270	...	——	Sverdlovsk, U.S.S.R.		
15280	...	——	Singapore, Malaya	Far Eastern Broadcasting Service	
15305	...	HER6	Berne, Switzerland	Radio Suisse	25000
15318	...	CKCS	Sackville, Canada	Radio Canada	50000
15389	...	——	Dakar, Senegal	Radio Dakar	
17770	...	——	Colombo, Ceylon	Radio S.E.A.C.	100000
17784	...	——	Berne, Switzerland	Radio Suisse	25000
17820	...	——	Moscow, U.S.S.R.	Radio Centre Moscow	
21220	...	——	Moscow, U.S.S.R.	Radio Centre Moscow	
21510	...	VUD8	Delhi, India	All India Radio	100000
26020	...	HVJ	Vatican City, Vatican	Radio Vaticano	25000



Component Review

ELECTRONIC AND DEVELOPMENT CO. LTD.

A New British Communications Receiver

Messrs. Electronic and Development Co. Ltd., Tanners Lane, Lincoln, recently enabled us to test the prototype of a new communications receiver they are developing. This receiver is an eight valve set covering the following ranges:—Range 1, 42-15.5 Mcs.; Range 2, 23-8.5 Mcs.; Range 3, 9.75-4 Mcs.; Range 4, 4.5-2 Mcs.; Range 5, 2 Mcs.-1 Mcs.; Range 6, 1200-510 kcs..

The controls fitted to the receiver are as follows:

Bottom, left to right. AVC on/off switch, phone jack, audio gain, IF gain, wave band switch, crystal band width control, tuning, BFO tuning, BFO switch. Mains on/off and standby switches are to be fitted to the final model. They were not fitted to the prototype.

Top controls, left to right. Upper left, R.F. gain. Upper right, S meter zero control.

A preliminary trial of the receiver brought to light several good features. On the broadcast bands, there was ample volume to fill a large room from a 10 inch speaker. The quality of reproduction was excellent and selectivity was as good as could be wished. This receiver is certainly in the high quality broadcast reception class. These features are carried on into the short wave ranges, and we found that for S.W. broadcast reception the receiver was quite up to usual communications standards. Both selectivity and sensitivity were high, the AVC works well, and broadcasts from all the usual S.W. broadcasters came in at full programme value. A notable feature is the excellent signal to noise ratio. This is one of the quietest receivers we have heard recently, the usual background hiss on S.W. reception being almost entirely absent.

The valve line up is as follows:—E.F. 50-R.F. Amplifier. 6K8G-Mixer. 6SK7G-1st I.F. 6SK7G-2nd I.F. 6Q7G-2nd detector, AVC. and L.F. amplifier. 6V6GT-Output. 5Z4GT-rectifier. 6SJ7GT-B.F.O. Two models are to be marketed. One for general coverage as indicated in the ranges given above. The other is for Amateur Bands only and gives full bandspread on all Amateur Bands from top band to ten. We tried out the prototype on the Amateur Bands and in spite of its being the general coverage model, found that it performed well. A good crop of signals was obtained on top band even though the band was not very active. On eighty, the receiver gave a very good account of itself in fetching in the phone stations to be found on this band. On forty, twenty and ten, bandspread was not sufficient to enable us to judge the performance of the receiver with accuracy, though our impression was that the receiver was very lively indeed. The special Amateur Band model should be really "hot," especially on ten, where the prototype showed up well. So many communication receivers fail badly on ten, and it was a surprise to see how well this one performed. A crystal band pass filter of 4 kcs. bandwidth is fitted as standard, but alternatives can be fitted to customers' requirements. Orders for either model can now be placed with the makers; price £40.

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, Worksop, 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. G3AYA, 64 Cavendish Road, Kilburn, London, N.W.6.

1-V-2 battery, 10-190 metres. Bandspread. Air tested. Offers to: Cleveland Villa, Cleveland Terrace, Whitby, Yorks.

PYE battery receiver 35/-. Philips AC 6-valve chassis 85/-. Offers or exchanges.—Box 1020.

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.

FOR YOUR transformer and choke requirements consult Radio & Electric Facilities, 137a Ashton Road, Oldham, Lancs.

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.

"SKY CHAMPION," S20, good condition, to clear. Best offer secures. "Monitor," c/o "S.W.N."

TESTED VALVES: 2/6; New ceramic EF50 valveholders 6d.; Shrouded 180 mA. chokes (weight 4½ lbs.) 10/6; 90V.-1½V. batteries 5/-; Large capacity 1½V. with terminals 1/-; Moving coil hand mikes 5/6; SW RF chokes, wavewound in sections, 1/6. Send 2½d. stamp for complete list: Carters, 67 Ball Lane, Marston Green, Birmingham.

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), PM24A, PM24M, PM24, MHD4, AC/HL, AC/P, 6SL7, FC2, AC/PEN, MHL4 (6/- each), 12SK7, 12A6, 12SH7, 12SJ7, 12SG7, 12H6 (6/- each). 1625, 956, 6AG5 (10/- each). 955 (7/6). Also 100 kcs. Bliley crystal, perfect, with holder 15/-. Many other valves available. State wants: Box 1018.

FOR SALE: Howard 438X as new. Makers' original carton. For 230 V. A.C. Offers: Dr. Walker, Guest Hospital. Dudley, Worcs.

AMERICAN MAGAZINES: "Radiocraft," "QST," "Television," "Esquire," "Life," etc. Yearly subscriptions arranged. Leading popular publications. Details from Smith & Co., 14a, Market Place, North Walsham, Norfolk.

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