

# SHORT WAVE NEWS

Vol. 2 • No. 3

MARCH, 1947

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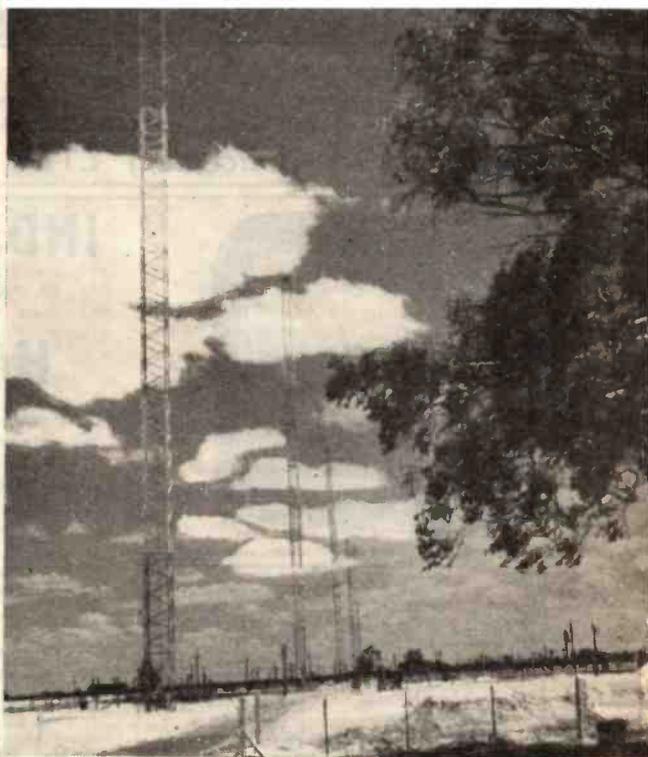
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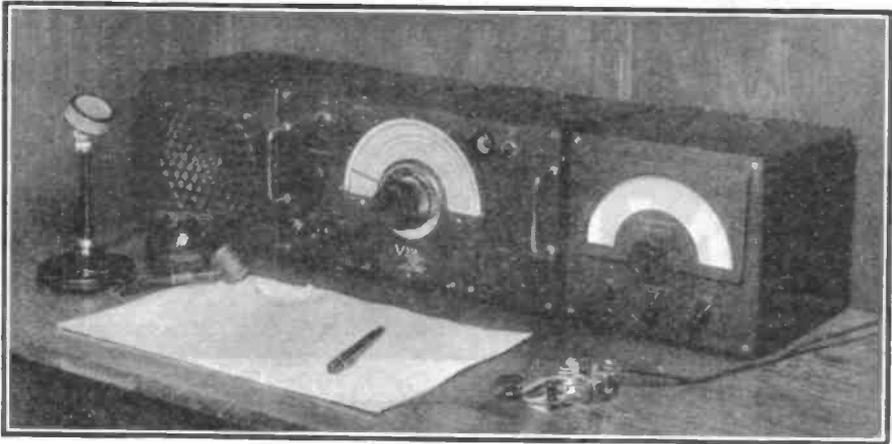


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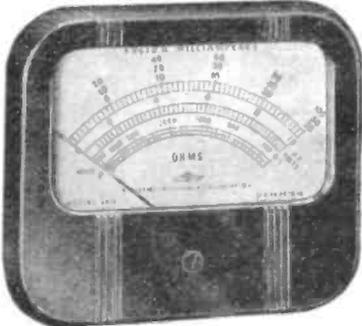
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# Short Wave News

Vol 2 No 3

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March, 1947

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

## EDITORIAL

**T**RANSMITTING LICENCE REGULATIONS. We continue to receive letters from readers asking us to support a move to alter the present transmitting licence regulations.

Complaints about the new regulations can be grouped under three headings. Firstly, there are those who want the AA licence restored. Secondly, there are those who cannot wait a twelve-month before going on phone. Thirdly, there are those who do not want to take the "exam."

We have some sympathy with those who request the return of the AA licence. However, following our editorial comment on this matter some months back, we learnt the official reason for the cancellation of this type of licence. As the law of the land now stands, "no-radiating" licences just would not fit into the present legal set up. They therefore had to be deleted from the new amateur transmitting regulations altogether. In passing, we would like to mention that the cancellation of the AA licence had nothing to do with the R.S.G.B. It is a pity this is not more widely realised, as many brickbats have been hurled at the Society over this question. So you lads who want AA facilities, we're sorry, we agree with your sentiments, but the law of the land dictates that, "You've had it!"

We are entirely in sympathy with the ban on phone. There was a tendency before the war for people to scrape through their Morse test, get a ticket and then never use C.W. at all. In fact some stations had receivers with no BFO! We are not so foolish as to start the phone/CW controversy in these pages, but we will stoutly affirm that the fellow who has never learnt to rag chew on the key has missed half the fun of amateur radio. Then again, one of

the most fascinating aspects of amateur radio is that of "chasing DX" and few can afford the resources required to do this effectively on phone. On CW on the other hand, very good "hunting" can be had with very simple gear. We feel that the R.S.G.B. are to be complimented for recommending this change in the regulations to the G.P.O. as it is obviously in the interests of amateur radio as a whole. We understand too, that no amount of pressure would alter the present policy on this point.

It is rather difficult to see why some of the newcomers to amateur radio are making so much fuss about having to sit an examination. The transmitting side of our hobby requires quite a considerable amount of technical knowledge and scientific inclination and this must be acquired in some way. No matter what activity we engage in these days, some aptitude and ability must be shown where the activity is such as to cause inconvenience to others if it be not carried out with some degree of skill. And again, one's enjoyment of a hobby is far greater if one knows what one is doing, and the papers which have been set at the Radio Amateurs' Examination so far, show that this is all that is required of candidates.

Our own view is that the present regulations will in the long run benefit our hobby very considerably. The biggest curse on the bands is the fellow whose only object is to get a "plush and chromium" phone station in which he can natter to some similarly minded crony. The regulations as they stand at the moment will severely discourage this type of individual and will certainly not deter the chap who wants to take up amateur radio transmission because of a genuine interest in what is one of the most scientific of hobbies.

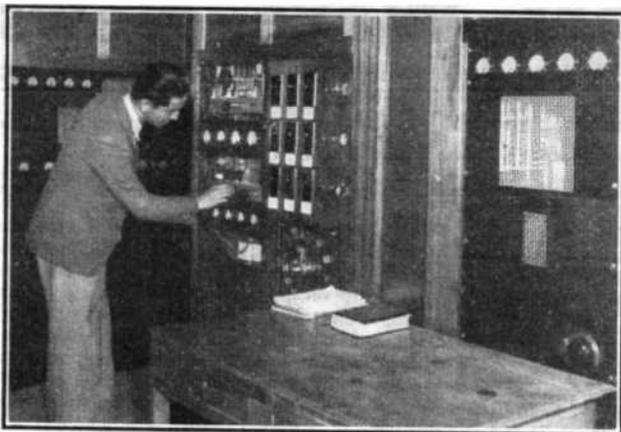
A.C.G.

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.



*An engineer at the controls of HCJB.*

# Around the Broadcast Bands

Monthly Survey by  
"MONITOR"

All times are given  
in G.M.T.

(For B.S.T. add one hour : for  
E.S.T. subtract five hours : for  
A.E.S.T. add ten hours.)

**M**ANY reports, schedules and letters have been received this month.

Your scribe hopes to mention most of them in this article but those not included will be in next month's. Your scribe is writing these notes under difficult conditions after being laid up with 'flu for ten days. Please excuse any reports that are cut short.

It would be appreciated if any ISWL member in the Bristol area would volunteer to come along for a couple of hours a week to give a hand. What say somebody?

Now for the month's news.

## ● Asia

**Ceylon.** Radio SEAC Colombo has been logged at 1100 on their 15120 kcs. channel with BBC news relay. Signals were R5 Q4. (R. E. Johnson).

**India.** VUD9 Delhi 11870 kcs. heard giving news at 1439, also radiated over VUD7 15160 kcs., 9590 and 7210 kcs. VUD7 closes at 1445. (M. Forrest).

**Philippines.** KZRH "The Voice of the Philippines," Manila 9640 kcs. heard closing at 1600 after relaying "Voice of America" programmes from KRHO Honolulu. (M. Forrest).

**Turkey.** W. H. Harris ISWL/G42 has heard TAP Ankara on 9465 kcs. Signals were R9 Q5 at 2130 one Monday with talk and news in English. Transmits English programme also on Thursdays and Sundays at same time. Answer listeners' reports over the air Sundays. Times in GMT. QRA and conditions must be stated on reports, according to this reader.

**Indonesia.** Djokjakarta 11070 kcs. heard around 1500 till close at 1630. English part of programme is transmitted in two half-hourly sessions 1500-1600. Signals R6 Q3-4.

Reports are requested. QRA: Indonesian Broadcasting Centre, Djokjakarta, Java. (J. Beaunoir, Natal).

**Iran.** EPB Teheran 15100 kcs. verifies by registered letter. QRA: Wireless Dept., Ministere des Postes, Telegraphes and Telephones, Teheran. (Roger Legge).

## ● North America

**Canada.** Jean Beaunoir reports good signals from CBC although transmissions are not directed to his part of the world. He mentions: CKLO 9630 kcs. with very good signals at 2100-2300, also CHOL 11720 kcs. 2130 to close at 2300, CKCX 15320 kcs. 2000 to close at 2045, and CKNC 17820 kcs. 1800 to close at 2000. Latter three transmission received quite well, he states, being R7-8. CKCX is the best.

Sidney Pearce lists CKLO in parallel with CHOL at 2100.

Latest schedule from CBC states that the following transmission are radiated to Great Britain and Europe:—

CKNC	17820 kcs.	1400-2000 daily	1200-2000 Sundays
CKCX	15190 kcs.	1400-1700 daily	1200-1700 Sundays
CKCS	15320 kcs.	1705-2130 daily	
CHOL	11720 kcs.	2015-2300 daily	
CKLO	9630 kcs.	2145-2300 daily	
To Caribbean and Latin America:			
CKRA	11760 kcs.	2320-0035 daily	(to 0205 Sundays)
CKCS	15320 kcs.	2320-0035 daily	(replaces CKRZ 6060 kcs.)

J. Hughes logged CKRZ and CKRA at 2340 with news. Signals were R7 Q4.

**Newfoundland.** VONH St. John's heard at 0145. R7 on 5970 kcs. (G. K. Sutherland).

**Mexico.** Four new stations have com-

menced operations as follows: X2BHL Mexico City D.F., X3BHL El Mante, Tamp, X4BHL Monterrey, X5BHL Tampico. Frequencies for all stations 11645 kcs. Heard after 1800. Stations are run by Motor Coach Service "Linea de Noches Salon del Norte" affiliated with U.S.A. "National Trailways." QSL from X3BHL gives QRA as Hotel Mante, Mante, Tamps, Mexico. (UR DX C).

U.S.A. (West Coast). KCBA 11770 kcs. heard at 0300 with R9 signals. (Sutherland). Sidney Pearce sends a fine log in: KGEX 15210 kcs. at 2200, KNBX 15340 kcs. 2200, KCBR 153330 kcs. 2300, KCBR 9700 kcs. 1400, KNBA 965/ kcs. and KCBF 11790 kcs. at 0700.

M. Forrest sends in schedules of General Electrics KGEI and KGEX San Francisco.

KGEI 50 kW.

1000-1500 9530 kcs. Beamed to Philippines. 2300-0145 15130 kcs. Beamed to Alaska. 0200-0945 Beamed to S.W. Pacific.

KGEX 100 kW.

0800-1700 11730 kcs. Beamed to East Indies. 2300-0745 15210 kcs. Beamed to Philippines.

Pearce states that WRUL/WRUW Boston ceased the "The West Indian Radio Newspaper" programme on November 15th, according to Air-Mail letter received by this reader.

● Central America

**Panama.** HOXA Panama City 15100 kcs. heard with R9 Signals at 2200-2400. Programmes mainly of Latin-American dance music and vocal items. (J. Beauvoir). Programmes are radiated simultaneously over HOXA and HOXB (11810 kcs.) and relayed from MW station. Power is 7.5 kW. (P. B. Jones).

**Salvador.** YSU "Radio Mil Cincuenta," San Salvador. New station heard 0000-0400. Frequency 6255½ kcs. Suffers QRM from TGRA. Announces frequency as 6250 kcs. (Legge).

**Guatemala.** TGLB "La Voz de Mazatenango," Mazatenango. New station heard 0000-0300 on 6905 kcs. Usually relays TGLN-TGLA Guatemala City. TGRB "La Voz de la Guardia Civil," Guatemala City. Also new station and heard 0000-0300 on 6860 kcs. Relays TGRA. Verified promptly by letter in Spanish. Both reported by Roger Legge.

**Nicaragua.** YNAO "Ecos del Aire," Masaya. Newcomer on 7413 kcs. and heard at 0000-0300. Announced frequency is 7360 kcs. Verifies in Spanish by letter. (Legge).

YNXW "Radio America," Managua formerly on 6275 kcs. is now heard on 8190 kcs. at 0000-0400, YNCNN "Ecos de America," Managua is a new station on 6700 kcs. and logged at 0000-0300. (Legge).

**BROADCAST STATION  
COUNTRY PANEL**

**No. 11: BRAZIL**

**PRA8:** Recife. "Radio Club do Pernambuco." 6015 kcs. 5000 watts. 1300-1700, 1900-0300 GMT.

**PRC5:** Belem. "Radio Club do Para." 4865 kcs. 2000 watts. 1100-1200, 1400-1645, 2030-0130 GMT.

**PRE9:** Fortaleza. "Ceara Radio Club." 6105 kcs. 5000 watts. 1400-1700, 2030-0200 GMT. Also on 15165 kcs. from 2030-0200 GMT.

**PRF6:** Manaus. "Radio Bare." 4895 kcs. 250 watts. 2230-0230 GMT.

**PRI3\*\*:** Belo Horizonte. "Radio Inconfidencia." 5995 kcs. 1000 watts. 1045-1700, 2000-0200 GMT.

**PRJ4:** Parnaiba. "Radio Educadora." 4825 kcs. 500 watts. 2000-0300 GMT.

**PRL7:** Rio de Janeiro. "Radio Nacional." 9720 kcs. 50000 watts.

**PRL8:** Rio de Janeiro. "Radio Nacional." 11720 kcs. 50000

**PRL9\*:** Rio de Janeiro. "Radio Nacional." 17850 kcs. 50000 watts.

**PSE†:** Rio de Janeiro. 14935 kcs. 12000 watts. 2200-2300 GMT.

**PSH†:** Rio de Janeiro. 10220 kcs. 12000 watts. 2230-0200 GMT.

**PST†:** Rio de Janeiro. 12080 kcs. 12000 watts. 2200-2230 GMT.

**ZYB7:** Sao Paulo. "Radiodifusora Sao Paulo." 6095 kcs. 5000 watts. 2100-0230 GMT.

**ZYB8:** Sao Paulo. "Radiodifusora Sao Paulo." 11765 kcs. 5000 watts. 1300-1630 GMT.

**ZYB9\*:** Sao Paulo. "Radiodifusora Sao Paulo." 15155 kcs. 5000 watts.

**ZYC7:** Rio de Janeiro. "Radio Tamoio." 6200 kcs. 25000 watts.

**ZYC8:** Rio de Janeiro. "Radio Tamoio." 9610 kcs. 25000 watts. 2100-0230 GMT.

**ZYC9\*:** Rio de Janeiro. "Radio Tamoio." 15370 kcs. 25000 watts.

**ZY.?:** Maceio. 9360 kcs.

\* Not operating at present.

† Irregular schedule.

\*\* Also has a 12000 watt station under construction which will operate on 15190 kcs.

● **Australia**

H. O. Armour ISWL/G325 sends in schedule of "Radio Australia," Melbourne, of transmissions to the Br. Is.:—  
 0700-0815—VLA4 11770 kcs, VLB3 11770 kcs. (to 0800 not Sats.), VLC10 21680 kcs. (Sats. only). News bc at 0730.  
 1500-1600—VLA8 11760 kcs. (to 1530), VLB9 9615 kcs., VLC4 15320 kcs. (to 1545), VLG9 11900 kcs. (to 1545). News bc 1515.  
 2030-2330—VLA4 11770. BC news at 2100 and 2145.

(VLB6 15200 kcs. now takes the 0700 session to Br. Is. as from February 3rd).

A special programme for DXers is given at 2215 every Saturday and is prepared by a member of the Australian DX Radio Club.

VLB8 21600 kcs. has been heard carrying the Forces Programme for India and the Far East at 1145. R6 Q4. VLA8 11760 kcs. heard R4 Q3 and VLC4 strong but suffers bad QRM from Moscow station and HE15. (R. E. Johnson). VLG9 heard R7 Q4 on 11900 kcs. at 1400 with Forces Programme, VLA8 R8 Q5 at 1430 with same service. VLC4 R9 at 1500 with call of the Kockaburra and opening announcements for the British Isles service. (M. Forrest).

**Radio Party of Radio Australia's Children's Overseas Club**

This party was arranged by a member of the International Short Wave League, Miss Pat Wright ISWL/G339 on Friday, January 17th. Over 2000 invitations were sent out by her to children in the Br. Is. and Australia inviting them to the "Radio Party" at 2130-2140 GMT or 0730-0740 AEST. Reception of the BC was very good and Mike Connors commenced the programme by reading the invitation over the air to the Australian children and calling children in the British Isles.

Messages of good-will and love were sent to this country.

Pat tells me she held a party at her own QRA and lots of children heard the BC on Pat's RX—an Eddystone "504."

Congrats. to you ISWL/G339 on a fine show.

These programmes are conducted by Mike Connors and transmitted by "Radio Australia" on frequencies of 11770, 15200 and 21600 kcs., every Friday evening at 2130.

● **Africa**

**Azores.** Ponta Delgada heard well 2200-2400 on new frequency of 4845 kcs. replacing 4040 kcs. (Legge). Heard at 2330 (M. Forrest).

**Belgian Congo.** OTC2 Leopoldville 9748 kcs. heard with bc in English at 1630-1715. Signals were R7 Q5. (R. E. Johnson).

● **Europe**

**Holland.** Latest schedules received from PCJ Hilversum states the following.  
 Sunday.

15220 kcs., 11730 kcs., 6020 kcs, 1530-1700 Beamed to East and Near East.

11 Mcs., 9590 kcs., 6 Mcs., 2100-2230 to Africa and Mediterranean. 0230-0400 to the Americas (Monday Morning).

Tuesday

11, 9, 6 Mcs. channels: 0800-0930 to Pacific, Australia and New Zealand.

Wednesday

15, 11, 6 Mcs. channels: 1530-1700 to East and Near East.

11, 9, 6 Mcs. channels: 2100-2230 to Africa and Mediterranean. 0230-0400 to the Americas. (Thursday Morning).

Heard answering listeners letters at 0800-0930 in Pacific Beam with R9 signals by W. H. Harris who heard them thanking our ZL Rep. (Arthur Cushen) for an FB report.

**Albania.** ZAA "Radio Tirana," Tirana. 7850 kcs. gives 10 news bulletins in various languages daily. French at 1815, English at 2015. QSL received by Registered post. Requests reports to: Rue Conference de Piza 3, Tirana. (J. Bowes-Taylor).

● **U.H.F.**

Brian Bower of Hull reports some DX activity on the 8-10 metre bands. WKQD? State Police, Minneapolis with R8 signals Q5 at 1540 on 9.8 m. W8XDE Kellogg with WX observations and once heard contacting WJAD? Harrisburg. W8XUN also heard. Freqs.? GSK 26100 kcs. heard with BC to Middle East and Africa. Some flutter QSB on signals. Please state times OM.

N.B.—MW reports and news on this band cannot now be accepted due to lack of space at present available. S.A.E. must be enclosed if readers require return of special matter. Name and address to be stated on each sheet of reports or schedules.

● **Acknowledgements**

M. Forrest ISWL/G170 (Laverstock, Wilts.), H. O. Armour ISWL/G325 (Sth. Wootton, Kings Lynn), Brian Bower (Hull), R. E. Johnson (Bessacarr, Nr. Doncaster), W. H. Harris ISWL/G42 (Gt. Bealings, Suffolk), J. Beaunoir (Jacobs, Natal, S.A.), Roger Legge (Binghamton, New York), Peter B. Jones (Watford, Herts.), J. Bowes-Taylor ISWL/G65 (Birmingham), Sidney Pearce BSWL336 (Berkhamstead, Herts.), UR DX Club (U.S.A.), J. Hughes ISWL/G30 (Rochdale, Lancs.), G. K. Sutherland ISWL/GW384 (Llanfairfechan, N. Wales).

# V.H.F NEWS

## The Month's News

**W**E regret that this feature had to be curtailed last month, but once again, shortage of space must take the blame. In order to do justice to some excellent material supplied by G2XC, we decided to go one page short last month in exchange for an extra one this month.

60 Mcs. activity continues to increase. Scotland is now coming into the picture with considerable activity particularly in the Glasgow area. We are pleased to announce the appointment of another SWN Monitor station—this time for Scotland, where A. H. Mason, GM6MS, 390 King's Park Av., Rutherglen, Glasgow, has kindly undertaken to act in this capacity for us.

Activity is increasing on the East coast. G2XS is active in Kings Lynn and his signals have been heard by 6DH in Clacton. He is anxious to get further contacts in the Midlands. 5CY, Sutton-on-Sea, Lincs., has a Rx working OK and hopes to have the Tx going very soon. G6OS and 5GX are both active in Hull. 5GX has a fixed beam directed west, and is looking for Midland contacts. 8JV's (Nottingham) sked with 5BD (Mablethorpe) continues at 2100 and reached 183rd contact on February 12.

D. W. Heightman, G6DH, Clacton-on-Sea, reports that the MUF "peaked" between January 18-24, but did not reach 50 Mcs. Another peak occurred on February 11, when it reached 48.1 Mcs., with WQR. The American FM broadcast stations have continued to come through well between 1230 and 1830 GMT. WGTR 44.3 Mcs. is the best of the bunch, WNE 45.2 Mcs., Mount Washington, WVCA (?V) 44.8 Mcs., Schenectady, and WHAM 44.6 Mcs., Rochester, have all been logged. Harmonics of the 15 Mcs. Moscow transmissions have been heard on 45.8 and 46.9 Mcs. and Radio Rumania, 6 Mcs., has been putting in a good harmonic on 49.2 Mcs. G6DH is carrying out some very interesting experiments on the "rebound" of VHF signals from the F2 layer with the aid of PAOUM, details of which will follow in due course.

G5BD reports hearing a signal on 49.5 Mcs. at 1200 GMT on January 24. It was a commercial sending Vs and RAB de RDE ZHC? and was heard at RST 569. The date of this fits in with the peak period

nicely and it would be interesting to know if anyone else heard it. It is one to keep a watch for. The next peak periods are February 16 and March 15 and we may as well give the next one still—April 11—as when this number of SWN will appear with the power cuts in force at the time of writing, goodness only knows!

Apropos our remarks on the F layer last month, 6DH says that when the layer splits into two with the coming of daylight, the MUF frequently shoots up to a high figure, and it is worth while watching for DX VHF signals at that time—about 0700-0800 GMT at time of writing.

## The Month's Conditions

*Tropospheric Propagation.* Conditions have on the whole continued poor. January 19 to 22 was fairly good and February 8 was a peak period. Some marked temperature inversions occurred on February 15-16 which in spite of the low ground temperature produced good conditions. These inversions formed over an extensive layer of stratus cloud and they enabled 6DH to hear 2XS, 4AJ and other East coast stations after a long period of no signals at all. Commenting on conditions during January, 2XC says, "January 19 to 22 was fairly good, and as the week progressed, temperatures fell very low and snow entered the picture and DX went out! In spite of the rather low temperatures from the 20-22, the very marked inversion and humidity gradient around 3000 ft. was able to produce an effective gradient in the rate of fall of the dielectric constant with increasing height. Judging from the Air Ministry data, the rest of the month was generally poor."

G8JV remarks that conditions for propagation in an E-W direction seemed to be better than for a N-S direction. He has heard little of the Southern stations even when 5BD has been very strong. As he points out, the better E-W propagation was possibly due to weather fronts crossing the country from E-W. He reports best "tropo" days recently as January 19-21. 8UZ also confirms January 19-20 best "tropo" days up to February 10.

## *Ionospheric Propagation.* Nil.

## More About "Tropo" Propagation

Further to our notes on tropospheric humidity and the propagation of VHF signals recently, we are now able, through E. J. Williams' G2XC co-operation, to give still more data on this subject.

We have previously discussed how tropospheric propagation occurs through bending of the VHF rays by their passage from one mass of air into another with a different dielectric constant. And we have repeatedly drawn attention to the fact that the

humidity of a mass of air determines its dielectric constant. 2XC has provided us with the graphs shown herewith which show very nicely the change in temperature, humidity and dielectric constant of the troposphere at different heights on selected days during recent 60 Mcs. tests to obtain data on this aspect of propagation.

Fig. 1 shows the tropospheric temperature the relative humidity and the dielectric constant at various altitudes up to 12,000 ft., at 1800 GMT on December 29 last. A fairly well marked drop in the dielectric constant curve is shown at about 5,000 ft. Conditions were good in the early evening of December 29. After 2200 GMT they dropped off very noticeably and the dielectric constant curve for midnight (Fig. 2) shows that the sharp drop has gone—which means that there was no difference in dielectric constant anywhere in the troposphere and consequently no bending of VHF rays could take place. Fig. 1 is also interesting in that it shows a very nice temperature inversion just above 5000 ft. Notice how up to 4,800 ft. the temperature drops with increasing height, suddenly begins to rise again up to 5000 ft., then after a short "isotherm" it drops again with a further increase in height. The short rise in temperature between 4800 and 5000 ft. is known as a "temperature inversion" as the normal drop in temperature with increasing height is interrupted. For the causes of such an inversion refer again to "VHF News" for last July.

A good deal of discussion has been going on as to whether or not general low temperatures affect "tropo" conditions or not. The two graphs Figs. 3 and 4, are interesting in this respect. In Fig. 3 it will be seen that whilst a marked temperature inversion and humidity gradient have been recorded, the accompanying dielectric constant gradient is not marked. It will be noted that the temperature inversion occurred at a very low temperature viz., between 16 and 28 degrees F., i.e., below freezing. Now in Fig. 4 good temperature inversion and humidity gradient are shown and accompanying them is a good dielectric constant gradient. The temperature inversion in this instance occurred at a relatively high temperature, viz., between 45 and 53 degrees F. Conditions during the evening of October 11 were—as would be expected from the dielectric constant gradient—good.

Readers will agree that this subject is an extremely fascinating one. There is much to be unravelled yet; we will do our best to keep informed of further developments as they occur. When we started "VHF News" a year or so ago, it was stoutly

affirmed in some quarters that the weather made no difference at all to VHF propagation conditions. We have consistently given the views of Messrs. Heightman and Williams in these pages and the culmination of their work in their recent lecture to the R.S.G.B., on this subject will have convinced all but the most "die-hard" amateurs that the vagaries of "tropo" propagation can be co-related with other measurable tropospheric data.

#### Midland Area Monitor Station Report

Norman White, G3IS, 59 Eastlands Road, Rugby, reports: "The period under review from January 10 to February 10 has appeared in general to be very poor for the Midlands. Activity on five has been at rather a low ebb due both to the cold giving poor conditions and to the fact that even the most enthusiastic 5 metre ham has thought a second time before going to the shack! However, the band has opened up at odd times, particularly on January 19-20, when it was noted that barometric pressure was quite high over these two days. Stations appeared to commence coming through from 2100 hrs. to 2300 hrs., when semi-DX stations went out. On the second evening, stations were first heard at 2000 GMT—2IQ (Sheffield) being the first worked by the writer, both reports being RST 579.

February 8 appeared to be the next peak period, with good signal contacts north and south from the writer's station.

G6YU (Coventry) turns in a log of 53 contacts, with 24 stations, first time QSOs being G2IQ, 3FD, 6GF, 8MG and 8WV. The stations worked were as follows: G2AK, 2IQ, 2MR, 2MV, 2XC, 2YL, 3FD, 3IS, 4AJ, 4DN, 5BD, 5JU, 5LJ, 5MA, 6CW, 6GF, 6LK, 6VA, 6VX, 8MG, 8UZ, 8VN, 8WL and 8WV. 5MQ was heard 1600 GMT 8/2/47, at RST 569.

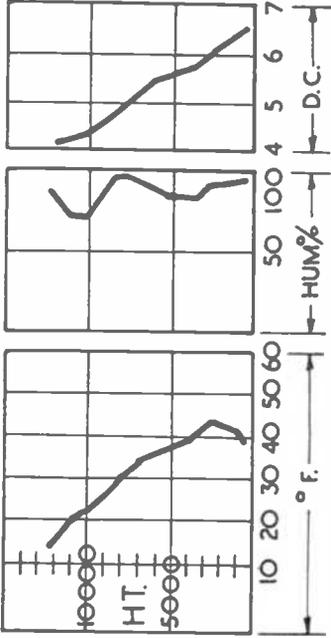
34 contacts by the writer were made, with new stations worked being G2IQ, 6GF, 8MG and 8WV.

G3BCS (Widnesbury) reports that due to rebuilding of Rx and a new 5 metre Tx on the stocks, only a few general stations have been heard over the present period. He hopes to be on five before long, which will be one more station for the Midlands. A new station now active which has been worked by 5LJ and 2AK of Birmingham, is 4LU of Oswestry.

Station G6GF of Leicester is now active and having worked well to the north is looking for contacts to the south.

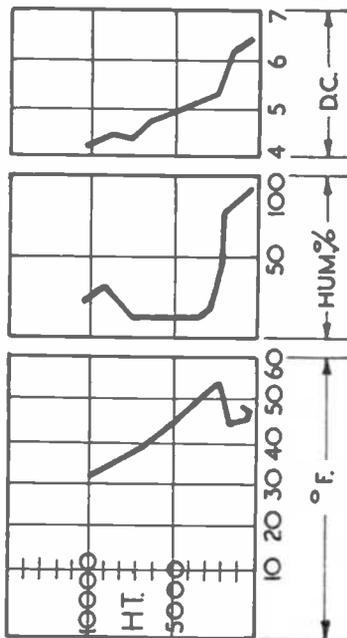
G8UZ (Sutton in Ashfield) also confirms that 5 metres has not been very productive in the way of QSO's over the period under review, but nevertheless confirms the good period January 19-20, when he logged

FIG 2



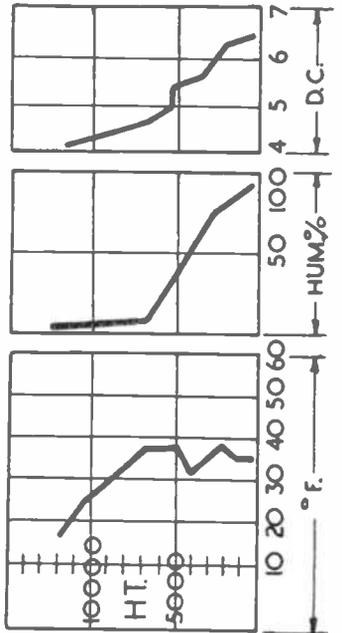
DECEMBER 29/30 Midnight

FIG 4



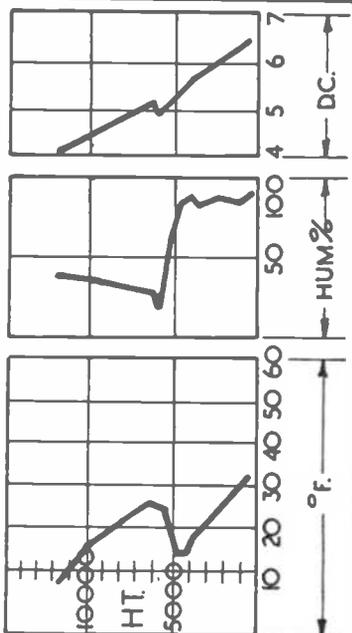
OCTOBER 11/12 Midnight

FIG 1



DECEMBER 29 1800 hrs

FIG 3



DECEMBER 16/17 Midnight

4AJ (Basingstoke) and 4DN (London). He also reports hearing 2PU (Cambridge) on phone, 1100 hours, January 19, but did not manage to QSO. Other new stations worked are: 8WV (Hanslope), 6VA (Worlingham), 6GF (Leicester), 3ANN (Birmingham).

G3APY (Sutton in Ashfield) has worked a new station in G3DA (Cheshire).

#### Scottish Area Monitor Station Report

A. H. Mason, GM6MS, 390 King's Park Avenue, Rutherglen, Glasgow, reports: "The list of amateurs in Glasgow and district on 60 Mcs. is as follows:—GM2DI, 2LQ, 2KP, 3YS, 3AKK, 5YG, 5ST, 6MS,

8AH, 8MJ and 8CH. All are as keen as mustard and the list is growing rapidly. From 2100 onwards, practically every evening, there are at least three signals to be heard on the band. GM2DI (Wishaw) is a consistently good signal. He finds that switching from vertical to horizontal aeriels is necessary to receive different stations and, as others have noticed, it is sometimes the vertical aerial which is better for signals from a station using a horizontal antenna. It is the intention eventually to have a chain of stations relaying signals over the country and so increase the chances of achieving some DX contacts."

## International Short Wave League

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

Subscription 1/- per annum

### MONTHLY NOTES

#### I.S.W.L. and W.F.A. Exchange Holidays Scheme

IT is now March and many of us are already turning our thoughts to that indispensable institution—the Summer Holiday. Communication with foreign lands being an integral part of our hobby, the yearning to visit some of these places is only natural. It is with this in mind that our European Holiday scheme is launched, in co-operation with the World Friendship Society.

Some readers will already know of the excellent work being done by the W.F.S. (29, Portman Square, London, W.1.) Amongst other activities which have brought this Association into the public eye recently, that of arranging exchange holidays between school children and young people in this country and those on the Continent last summer, has earned wide acclamation and approval.

We are very pleased to be able to announce that the W.F.S. is anxious to give its support to the I.S.W.L. It is suggested that parties of radio amateurs (not necessarily transmitting amateurs) in this country be formed for the exchange of holidays with radio amateurs abroad. Would all members of the I.S.W.L. who are interested in this project, please let us know, on a postcard—for easy filing—the following details:—

Name and address; Call-sign or I.S.W.L. number; Age; Sex; Married/Single; Number of children, and if of school age; Accommodation available; European country you wish to visit.

The scheme would be that members would receive free accommodation abroad in exchange for offering free accommodation to an amateur over here. Members would, of course, pay their own travelling expenses.

We should also like to hear—also on a post card, please—from any I.S.W.L. member who is already a member of the W.F.S. and from those who would be willing to entertain amateurs from overseas whilst not wishing to participate in the exchange holidays scheme.

#### NEW I.S.W.L. REPRESENTATIVES

##### Town

**BATH:** Mr. and Mrs. R. A. Pyatt (G119 and G388), Lambridge Grange, Gloucester Road, Bath.

**BEDFORD:** H. W. Hughes, G418, 24 Castle Lane, Bedford.

**BEXLEY HEATH:** W. Warren, 24 Berkeley Avenue, Bexley Heath.

**BRIGHTON:** J. R. D. Sainsbury, (G8HV), G626, 80 Lansdowne Place, Hove, 2.

**CHELTENHAM:** T. A. Russell, G257, 201 Gloucester Road, Cheltenham.

**CINDERFORD:** J. E. James, 4 Victoria Street, Cinderford.

**DERBY:** J. F. Mathers, G452, 54 Fife Street, Derby.

**ROMFORD:** P. F. T. Redman, G186, 108 St. Andrews Avenue, Elm Park, Romford.

**RUGBY:** W. H. Tanser, G114, 3 Pytchley Road, Rugby.

**MANCHESTER:** E. A. Hebron, G442, 9 Argyle Avenue, Victoria Park, Manchester.

County

**CHESHIRE:** W. Davies, G256, The Bungalow, Kingsley Fields, Nantwich.

**CUMBERLAND:** Arnold J. Brown, G43, 137 Thomlinson Avenue, Raffles, Carlisle.

**HEREFORD:** C. H. Williams, 43 Commercial Road, Hereford.

**LONDON (N.W.):** J. Patmore, G7, 16 Osborne Gardens, Mill Hill, N.W.7.

**MIDDLESEX:** L. M. Harris, G430, 93 Long Lane, Hillingdon.

**WARWICKSHIRE:** M. B. Taylor, G108, 136 Alvechurch Road, West Heath, Birmingham, 31.

**WORCESTERSHIRE:** R. G. Barrell, G427, 4 Bromyard Road, Tenbury Wells.

Overseas

**BERMUDA:** J. A. Mann, R.N. W/T Station, Daniels Head, Somerset.

**DUBLIN (County):** Denis J. Kiely, EI567, "Bremore," Balbriggan, Co. Dublin.

**EIRE:** G. O. Breasail, EI408, 5 St. Leger Terrace, Traig Mor, Port Lirge.

**MALAYA:** Tan Bin Hussain, VS2-438, Supreme Court, Ipoh.

**PALESTINE:** Reuben Sokolovsky, ZC6-389, 4 Nachlat-Benjamin Street, Tel-Aviv.

**QUEBEC:** F. Noakes VE495, c/o C.B.C., Box 189, Station H, Montreal.

**SIERRA LEONE:** C. H. Burchett, ZD1-423, c/o The Colonial Secretary, Freetown.

**SOUTH AFRICA:** J. Beauvoir, ZS516, P.O. Box 23, Jacobs, Natal.

DISTRICT NOTES

CHAPTERS

**W**ITH much pride, we announce the formation of our second overseas Chapter. We owe a vote of thanks to Reuben Sokolovsky, our Palestine Representative, for his initiative in forming his Chapter at Tel-Aviv. Thanks are also due to the other I.S.W.L. members in that city for their co-operation. Plans are being made for future activities of the Chapter and we hope to give fuller details in our next issue. Hearty congratulations, O.M's, and the best of luck.

In this country we are also making good progress, with no less than three Chapters already formed, in S.E. London, Birmingham and Bournemouth.

William Dall, TR for Bournemouth, is to be congratulated on having formed the first local group. Under difficult circumstances he has hoisted the I.S.W.L. flag in his locality, and would appreciate co-operation from members in the district not already in touch with him. His QRA is 4 Belle Vue Road, Southbourne, Bournemouth.

Under Malcolm B. Taylor, Birmingham is going ahead in great style and has at least 15 supporters. The chief trouble is the finding of a permanent Chapter QRA but the situation is now well in hand. Any member in the city, not already giving his support, is requested to contact Malcolm at 136 Alvechurch Road, West Heath, Birmingham, 31. (Telephone: Priory 1020).

The third bouquet goes to W. A. Martin, Representative for S.E. London, for his good work in forming the first Chapter in the London Area. The first meeting was held on Friday, February 14th at his home QRA (61 Silvester Road, East Dulwich, S.E.22), with an attendance of six members. At the next meeting a committee is to be elected and plans for acquiring a suitable clubroom will be made. Future meetings will depend upon support received.

Well, there we are. The great work by these I.S.W.L. "pioneers" should receive the full support of all members who are in a position to co-operate. Remember that forming local groups is no easy task, and if YOU can help your local representative in his rather thankless job then please do so at the earliest opportunity.

In addition to the above activity, several representatives are anxious for local support with a view to forming Chapters. They are:—

**ROMFORD:** (Chapter proposed): P. F. T. Redman, G186, 108 St. Andrews Avenue, Elm Park, Romford.

**CHELMSFORD:** W. C. Mills, G261, 3 Elm Cottage, School Lane, Broomfield, Chelmsford.

**BATH** (Chapter proposed): See list of new TR's.

**WORCESTERSHIRE:** (General suggestions needed, and co-operation in forming Chapters in suitable towns): R. G. Barrell, K427, 4 Bromyard Road, Tenbury Wells.

**DORSET:** (General co-operation. Chapter proposed): D. H. Tonks, G267, "Armagh," Shottsford Road, Oakdale, Poole.

I.S.W.L. Services

Owing to space limitations, the only new League service to be announced this month has been the Exchange Holidays Scheme. Next month, however, we will give full details of our Technical Query Service. Don't miss this!

General Notes

**Scotland:** Scotland has now been divided into two I.S.W.L. areas, North and South. (Cont. on p.72)

# RADIO AMATEURS EXAMINATION COURSE

By D. Warner

## PART I : OHM'S LAW

**M**OST short wave enthusiasts at some time or another turn their thoughts towards the transmitting side of their hobby, and find that before they can go "on the air" they must pass the Amateurs' Examination. For many, the questions set in this exam., although not demanding a high standard of technical knowledge, do call for a certain amount of study, which may be found tiresome. It is for such amateurs that this series of articles has been written.

It is, of course, impossible in a short series, fully to cover the whole ground, but the articles will provide a foundation upon which a good basic knowledge of radio communication may be built, and those who have thoroughly mastered the subjects dealt with should at least be able to answer sufficient questions to gain a "pass" in the examination.

It is almost certain that one question will be set on resistances in a simple network, and the writer may therefore be forgiven if the first article of the series is devoted to that basic and possibly most important subject.

### Ohm's Law

This law, with which every student should be thoroughly conversant, forms the basis of the majority of circuit calculations.

Assuming that the electromotive force (E.M.F.) is constant, the value of the current flowing in a circuit is dependent only upon the amount of opposition (resistance) offered by the circuit. There is a definite relationship between the current, the E.M.F., and the resistance, which is expressed by the equation:

$$\text{Current (in amperes)} = \frac{\text{E.M.F. (in volts)}}{\text{Resistance (in ohms)}}$$

or using conventional symbols,  $I = \frac{E}{R}$ . This relationship is known as Ohm's Law. By simple substitution, the following relationships are established;

$$I = \frac{E}{R}; \quad R = \frac{E}{I}; \quad \text{and } E = IR.$$

This equation holds good for all direct current circuits, and needs only slight modification in the case of alternating currents—these modifications, however, must be deferred to a later instalment.

### Resistances in Combination

It is essential to become familiar with the results of wiring a number of resistors in series, in parallel and in a combination of series and parallel connections.

Fig. 1 show three resistors wired in series.

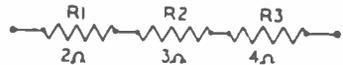


Fig. 1.

The total resistance of the combination is found by adding their individual resistances together, the formula being:

$$R \text{ (total resistance)} = R_1 + R_2 + R_3 + \dots \text{ etc.}$$

In the example given,  $R = 2 \text{ ohms} + 3 \text{ ohms} + 4 \text{ ohms} = 9 \text{ ohms}$ .

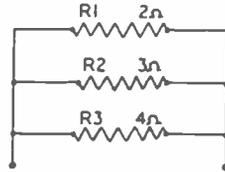


Fig. 2.

If, however, the resistors are connected in parallel, as in Fig. 2, the formula is slightly more complex, and takes the form:

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$\text{or } R = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \text{etc.}}$$

In the example,

$$R = \frac{1}{\frac{1}{2} + \frac{1}{3} + \frac{1}{4}} = 1\frac{1}{3} \text{ ohms.}$$

It will be seen that the resultant resistance of several resistances in parallel is of less value than any of the individual elements—as might be expected since each resistor provides an additional path for the current, so that a number of paths offer less opposition than any one path.

In order to determine the total resistance of a complex circuit comprising a number

of resistors combining both series and parallel arrangements, both of the foregoing formulae must be used. It is usually best to commence by adding together those resistances which are directly in series with each other, and then to determine the resistance of the parallel sections of the circuit, as shown in the next example, Fig. 3.

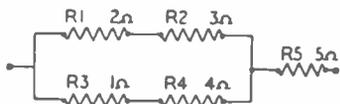


Fig. 3.

The circuit then becomes equivalent to:

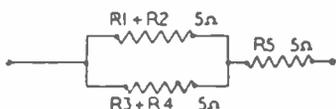


Fig. 4.

$$\frac{1}{\frac{1}{R_1 + R_2} + \frac{1}{R_3 + R_4}} = \frac{1}{\frac{1}{5} + \frac{1}{5}} = \frac{5}{2} = 2.5 \text{ ohms.}$$

The circuit now becomes:



Fig. 5.

and the total resistance is  $2\frac{5}{2} + 5 \text{ ohms} = 7\frac{5}{2} \text{ ohms.}$

### Voltage Drop

It has been shown that Ohm's Law can be written  $E=IR$ . This means that if a current of  $I$  amperes passes through a path of resistance  $R$  ohms there is a voltage drop of  $E$  volts across the resistance.

### Power

It is an axiom that it is impossible to obtain something for nothing. Every constructor knows that when current flows through a resistor its temperature rises. The heat thus dissipated represents the electrical energy expended in overcoming the resistance of the circuit, and is directly proportional to the current in the resistor and to the voltage drop across it.

This power, expressed in watts is given by the formula:

$$W \text{ (watts)} = I \times R \times I = I^2R.$$

In words, the power dissipated is equal to the product of the resistance and square of the current. This formula may be used when the voltage is not known.

There is no doubt that many readers may have found the foregoing too elementary for them. It is, however, considered advisable to start at the beginning for the sake of real beginners. The formulae given should be memorised and further examples worked out, in the sure knowledge that familiarity with Ohm's Law will ensure at least one correct answer to the examination paper.

### Suggestions for Practical Work.

It will be found helpful if the Student uses the formulae stated to some practical purpose, e.g., he might calculate the values for bias resistors and screen potentiometers for his receiver. The former may be calculated by dividing the required grid bias by the cathode current of the valve in question. The values for the screen potentiometer may similarly be found by the use of Ohm's Law. Such calculations may lead to some changes being made in the present value with, it is hoped, an increased efficiency of the set.

In the next article of this Series we will consider the properties of Inductors and Capacitors, and will then be in a position to deal with the Tuned Circuit.

---

### "H.A.C."

This firm has now changed its trade name to "H.A.C. Short Wave Products," with the new address of 66 New Bond Street, London, W.1.

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Readers wishing to have their copies bound should state whether they wish the covers to be taken out, and should pack their copies substantially (not forgetting the index sheet!). The address for binding is:—Mr. J. R. Dunne, 19 Helmsdale Road, Streatham, London, S.W.16.

# Broadcasting Station List

Modifications to List appearing in the "Annual"

Channels temporarily discontinued. (Delete from list) Frequency Changes  
 6170, KCBA; 6635, HC2RL; 6690, Erivan; HI1J from 6117 kcs. to 6147 kcs.;  
 7210, FGA; 7430, Leningrad; 9185, "Radio Sofia" from 7460-7660; FIQA,  
 HEF4; 11705, CBFY; 11710, VUD3; 6140-6063; CS2WI, 12400-12560; XGOY,  
 11750, Komsolomsk; 17840, Athlone. 6155-6143; HIL, 6185-6273; YNWW,  
 6920-6462.

## New Stations and Channels

3325	...	—	Jaffa, Palestine	Sharq al Adna	2500
3365	...	ZEA	Salisbury, S. Rhodesia		
4860	...	HC5HC	Riobamba, Ecuador	Ondas del Chimborazo	
5302	...	DTYC	Munich, Germany		100000
5732	...	SBU	Motala, Sweden		12000
5900	...	ZNB	Mafeking, Bechuanaland		
5957	...	RV19	Ashkabad, U.S.S.R.		
6005	...	—	Dornbirn, Austria	Radio Voralberg	
6025	...	HC1TR	Ibarra, Ecuador	Radio Equinoccial	
6026	...	PCJ	Huizen, Holland		5000
6040	...	WRUA/S	Boston, U.S.A.		
6060	...	VUD11	Delhi, India	All India Radio	100000
		CRKZ	Sackville, Canada	Radio Canada	50000
6075	...	—	Colombo, Ceylon	Radio S.E.A.C.	
6090	...	—	Tabriz, Azerbaijan		
6155	...	CXA13	Montevideo, Uruguay		
6170	...	—	Jaffa, Palestine	Sharq al Adna	7500
6190	...	WNRI	New York, U.S.A.		
6210	...	—	Bucharest, Rumania	Radio Romania Liberia	
6250	...	YSU	El Salvador, San Salvador		
6970	...	HC4EB	Manta, Ecuador	Radio Manta	
7090	...	XGOUS	Nanking, China		
7185	...	—	Colombo, Ceylon	Radio S.E.A.C.	100000
7280	...	CRY	Macao, Portugese China	Radio Macao	
7295	...	—	Port Louise, Mauritious		
7413	...	YNAO	Masaya, Nicaragua		
7700	...	ZMB6	Apia, Western Samoa		
8190	...	YNBA	Managua, Nicaragua		
8338	...	XUPB	Amoy, China		
8920	...	XRRA	Peiping, China		
9250	...	YSF	San Salvador, El Salvador	Radio Vanguardia	
9442	...	SDT	Motala, Sweden		12000
9500	...	—	Sverdlovsk, U.S.S.R.		
9518	...	OZF	Skamlebeak, Denmark		
9535	...	HE14	Berne, Switzerland	Radio Suisse	10000
9543	...	—	Rangoon, Burma		
9545	...	—	Colombo, Ceylon	Radio S.E.A.C.	100000
9555	...	XOPD	Hangchow, China		
9575	...	ZBC	Victoria, Hong Kong		
9630	...	CKLO	Sackville, Canada	Radio Canada	50000
9640	...	KZRH	Manila, Philippines	Voice of the Philippines	
9680	...	VUD11	Delhi, India	All India Radio	100000
9710	...	KZTI	Manila, Philippines		
9912	...	—	Johannesburg, South Africa	Johannesburg 4	
11760	...	CKRA	Sackville, Canada	Radio Canada	50000
12217	...	XMTA	Changsha, China		
12255	...	WXFG	Adak, Aleutiens		

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# WORLD NEWS

## REPORT FROM HONG-KONG

By R. W. A. McKichan

("S.W.N." Correspondent—N.W. Pacific)

NO one is one the air yet here to my knowledge with a VS6 call—at least not officially! There are eight applications for licences, but so far nothing has happened. This applies to the civilian side, as I am not sure what the Services are doing at present. The new licence conditions are based almost exactly on those at present in force in the U.K. Most of the other seven applicants, I believe, are old hands, but have not yet been in touch with them. No technical examinations are yet taking place, since the examiners (from the University) have not yet returned to the colony!

The main part of Hong Kong—Victoria and Kowloon—are situated with mountains all around, which increases the horizon angle. The housing situation, due to looting, is fantastic, and people are living largely in hotels, sharing rooms, where facilities for erecting decent aerials or establishing oneself with a respectable work bench are difficult. Another nuisance

### Introducing . . .



Jean Beaunoir and his XYL. Jean recently been appointed as SWN Correspondent for South Africa, and we will be hearing from him the news from that sunny part of the globe.

Other recent appointments have been that of Tan Bin Hussain—Correspondent for Malaya—and Capt. G. E. Moore as Correspondent for China.

is the QRM from the trams and cars, especially on 28 Mcs.

There have been a number of arrests of pirates (Chinese) who have been working Chinese stations, passing and obtaining information on the "exchange" and so working a racket. Fines have ranged to about £60. A number of doubtful call signs have been heard, including ABC1, K1L, and a G3WY who quite often breaks into Chinese !!

The 14 Mcs. band here is neatly enclosed by a couple of R50 CW stations (most unpleasant to the ears and the S-meter), with the more distant commercials in the middle of the band! The Philippines with their kilowatters, pour-in, and at week-ends, the sound of female American voices talking anything but radio, can be enjoyed by those that wish !!

The price of spare parts here is ridiculous, and if I had time, I would probably make some money by buying spares from England to sell to local retailers, though, perhaps, the demand would not be sufficient.

Hong Kong is not yet on its feet as far as amateur radio is concerned, but progress is being made—if slowly.

## NEW ZEALAND NEWS AND VIEWS

from Arthur Cushen

(our New Zealand Correspondent)

THE Post and Telegraph Department in the Dominion is confronted with the problem of many new transmitters taking the air, and being put into service, by such organisations as Harbour Boards, Fire Stations, Ambulances and Police. In a recent statement it was said that as soon as frequencies were allocated, these would come into service. A special examination for employees to use these transmitters will be held and it is expected that this will not be so advanced as the "ham" examination.

New Zealand has a very active State Forest Service which employs radio extensively to combat fires in the forest and native bush reserves. The main network is located at Kaingaroa Forest, 26 miles S.E. of Rotorua, in the North Island. Here the key station ZLGA, using 100 watts on 2760 kcs., is situated. Look-out points, patrol vans, patrol planes and gangs are each connected by radio from ZLGB-H. The latter seven stations are portable with from 10-25 watts power.

The Dominion's new 7500 watt short wave stations are due to be on the air shortly. The aerial arrays are now the only hold-up. (Frequencies allocated to the new stations are ZL1, 6080 kcs.; ZL2, 9540 kcs.; ZL3, 11780 kcs.; ZL4, 15280 kcs.; ZL5, 17770 kcs. and ZL6, 25800 kcs.—Ed.)

# Resonant Lines

A MINOR celebration this month—the anniversary of my linking-up with the S.W.N. I was still away with the Forces when the first issue came to my hands. Despite its immaturity there were unmistakable signs of the spirit and enthusiasm animating the project. Enthusiasm is infectious and in a magazine it finds a ready responsiveness in its readers, more particularly so in a friendly and intimate hobby such as ours. Instead of merely remaining just readers they become friends and loyal supporters, sharing the pleasure the editorial side feel in its progress and looking forward with equal eagerness to its further expansion. It must be gratifying to our Editors to have daily proof of this widely prevailing spirit among the short wave fraternity towards what is now, their very lusty youngster.

I too, find considerable pride in whatever small part I have played in its progress but it was only when in the Editorial of the third issue, the full realisation of the fact came home to me that I was probably a stranger to the more youthful circle of our readers and a half-forgotten name to many others.

"Resonant Lines" has afforded me much pleasure in renewing old correspondence friendships and bringing new ones, and I felt particularly warmed by the comment of a reader who wrote that he enjoyed the S.W.N., admired its progress and looked forward to its "going places" when the present day irksome restrictions are eased. I feel that so simple and sincere a compliment deserves mention as an encouragement to all concerned.

## Spring in the air

Conforming to the world-wide custom at the approaching season, at any moment now our minds may lightly turn to thoughts of Spring cleaning. After removing a few buckets-full of scrap, a quick whisk round with the duster and a gentle blowing of the dust from our most treasured QSL's, one generally decides a spot of touching up at the enamel work where it has become a bit shabby, would be a good thing.

I invariably start this way even though I inwardly realise that it is fatal for me to take a paint brush in my hand. I simply cannot resist the urge to enamel everything within range, and in looking back on these escapades it occurs to me how limited is the range of colours we choose for our gear. Years ago I took a strong liking for a deep olive green and I gradually converted everything to that colour, using a

crackle finish, imitated with reasonable success by "stippling" on the nearly dry enamel.

Individually things looked very nice, but "en masse" the effect was definitely sombre, even more so than the conventional favourite, black.

My present choice is birch grey. It is brighter than the battleship grey becoming so increasingly popular, and it does not look so austere in bulk. It makes a fine background for black controls and meters, etc., which stand out boldly, and looks most businesslike. For some inexplicable reason this colour has been fairly readily obtainable in the recent days of scarcity, although it was the aesthetic appreciation and not the availability which guided my choice.

## Mystery Pieces

Once again I risk being taken to task for so frequently allowing the question of junk to occupy these columns. As one to whom construction and experiment means nearly nine-tenths of the hobby, nothing less than atomic energy could propel me past a junk store until I have sorted over the whole stock and I know many readers share this weakness with me.

For us, the junk shop holds something of the thrill of the thrifty housewife hot on the trail in the bargain basement at the Spring sales, some of the excitement of a first-class mystery, the joy of trying to guess just what sort of apparatus some of the remarkable bits came out of, plus the promise of fulfilling a pathetic but rarely gratified hope of being able to make some new and wonderful gadget out of pieces of discarded scrap.

Maybe it is because these sensations are never completely satisfied that the fascination so strongly grips us, for however many disappointments we might meet, the next load of junk still attracts us like a magnet. It is like a Football pool, a remote hope that MAY materialise one day, but the keen junk-hunter quickly discovers that the really cheap pieces are so highly specialised that however long one ponders over them one cannot accurately guess what was their original use. One's ardour never diminishes, indeed it increases, and the least you get out of it is the good fun of trying to think up any possible use to which they might be put when even Ambrose Fandermere's imagination would be sorely tried.

## The Second String

Even the keenest hams and S.W.L.'s have a second hobby—I mean one to which they really devote some time, not something in which they are mildly interested.

(Continued on p.77)



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(I.S.W.L.—Cont. from p.65)

The dividing line is roughly that taken by the Firth of Forth and the line of the river Forth. North Scotland is represented by A. G. Anderson (GM3BCL), 87 Braemar Place, Aberdeen; and South Scotland by J. Thompson, GM249, 15 Chambers Street, Innerleithen.

**Glamorganshire:** Owing to professional duties, and being transferred to North Wales, our CR, Mr. C. Whitby, has unfortunately had to tender his resignation. He hopes to return to active I.S.W.L. work in the future. We are fortunate in securing a successor for the post and will Glamorgan members please note the new CR's QRA:—Douglas Hughes, "Lyndale," Cefn, Cwmllynfell, Swansea.

**Lancashire:** The CR (J. E. Whittle, 2 Church Terrace, Darwen) is co-operating with the Gloucester CR to exchange ideas and notes. Contacts are wanted from Warrington district members with a view to forming a local group.

**Goole:** TR B. S. Scott is soon to join the Forces and so has to relinquish his position. Local members please note. Good luck, O.M., and hope to have you back again with us in due course.

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# ON THE HAM BANDS

Conducted by "CQ"

## ● Comment of the Month

**W**HAT does W.A.C. stand for? The correct answer should be Worked All Continents. Just recently the race to W.A.C. in the shortest possible time has taken the form of a frenzied panic. Someone has just done it in 10 minutes. So what! With six continents, this allows for one minute each contact with four minutes in which to raise the stations. Wouldn't it be more appropriate to re-name the feat ERWAC?—meaning Exchanged Reports With All Contents. For what else is there time for in sixty seconds?

Some say leave these publicity hunters alone, if they don't interfere with others. I used to agree, but a recent event changed my opinions. A certain G2 contacted an SU. The SU had someone in the shack who wished to get some information about his wife who was dangerously ill in Edinburgh. The SU asked the G2 to telephone for information. The G2 said he was sorry but as he was trying to beat his record W.A.C. he didn't have the time to spare. *Ad finem nausea!*

Let us have records by all means, but when the race for record smashing reaches the stage where the "ham spirit" is excluded, then that is the time to call a halt. We have no room for such antics in amateur radio.

## ● Top Band

It has been good to hear many of the real old stagers making use of this band again. Lots of the calls dated back to long before the war.

One would, however, like to see an increase in daylight activity. When licences were restored a year ago, there was plenty of activity throughout the day, but with the other bands becoming available many stations left the band.

There are still some old-timers however, who prefer the top band to any others. With a long wire and efficient earthing system, it is surprising the distances that can be covered in daylight.

One of the few who still keep an early morning sked is G2FWA (Croydon) who can be heard working to G4HG (Maidstone) daily at 0630. One wishes there were others who would follow their example!

Outstanding Scottish and Welsh stations heard in London have been GM6RI (the writer hopes that he managed to get all the snow cleared away from his shack at Montrose!) G2YY, of Berwick on Tweed,

(who was heard telling G2NJ that in 1939 he picked up the latter when G2NJ was transmitting with an aerial attached to a box-kite on Heacham Beach), GW8SU (Porthcawl), GW8NP (Cardiff) and GW2DDX (Barry).

## ● 3.5 Mcs.

**Mal Geddes**, G2SO, has been doing well with his QRP rig (6C5 CO and 6L6 PA, 11 watts). He has worked W1, 2, 3, 4, and VE in addition to most of the European countries. Mal has difficulty in getting good results with QRP on other bands, and we would be pleased to hear from other ops. if they have the same experience.

**G5BD** (Mablethorpe) is looking for VK contacts on the band. Says that in 1935 he worked three VK's around 1900. Thinks maybe that today's QRM is prohibitive to such contacts. Any offers? Arthur has worked VO1L, VO2P, VO2T, VE1KS and WI1IM on 'phone.

**D. L. McLean** (Yeovil) reports hearing VE1BC, 1LD, 1LW; VO1A, 1I, 1P, 1T, 2Q; and many W's all between 2230-0000.

## ● 7 Mcs.

Our Chapter station, **ST2AM**, has been doing some fine work on 7 Mcs. They have worked 14 G's, GM3ajx, HB9ce, HB9eo; ZS6jh, hu, kk; OK1aw, 2nr; ON4au, UAoktu, VK2ann and VK2ahm. This was the result of the controversy of whether "40" is a DX band or not. The results speak for themselves.

**John B. Walker** (Pontefract) reports hearing ST2am, NY4ab (2355), KP4cc (2315), TF3a, UA6lf, XACO (Libya, 2245), and several W's.

**G. R. Garland** (Stony Stratford) writes to say that he heard VU2qy (RST 567) at 1915.

**Lionel le Breton**, a "veteran" of the 7 Mcs. band writes that he will soon be sending in regular logs. He has now heard 49 countries on this band, the latest being CN8 and ZS1.

**John Clarke**, G10 (Brentford) has been rather inactive lately but has managed CO2bz, CM8te, HH2jb, KH6ai, (0650), PY2bg, UJ8ac (2230), UOopk (Dixon Isle), VE7akk (0800), VP4ts (2300) and VU2ws (2030). Very fb! The RX is a TRF3, by the way.

## ● 14 Mcs.

I am afraid that some readers are going to be disappointed this month, because on my desk is something like three dozen 14

Mcs. logs! If mention is to be made of each contributor in future then it will be necessary to keep down the size of your logs! Please do NOT list any East Coast W/VE calls, or any European calls unless of special interest. The Latins, too, could be whittled down. From our point of view the ideal log is a fairly brief one which gives detail of the stations listed. If your log contains real DX then do not stint it, however. We trust that the paper situation will soon improve, but until then we must perforce impose some form of "pruning." Now for the months' news . . .

**J. Bowes-Taylor** (Birmingham) restricts his log this month to stations heard between 1830-0110 on ONE day. The log includes: CO's 6AS, 6BD, 7CX and 8MP; CT2WX (0010), HH3L, HK1DZ, TI2OEC, VP5AL, VP9K, VE7EC, YN1SS, YV3AL and ZS1DU (1910). Altogether 25 stations over 3000 miles distant, excluding W, VE, VO, etc.

**John B. Walker**, in his first report, lists CM7aa (2240), FF8wn (2000), HH3I, UN1aa, VO6k, VP4tk (449, 2200), VQ4kth (567, 1855), XZ2km (359, 1555), ZS1ci and ZS1dy. John uses an 0-v-1 and a 100 foot end-on aerial N/S.

**D. L. McLean** remarks on the condx. between 1800-2000 and has heard ZL, VK, HZ and OQ5 during this period. His fine 'phone log includes: EL2A, 4A, 5B; FF8FP, HC1JW, HH5PA, KH6CT, 6FT, 6GF; LI3DO (2330), NY4AB (U.S. Navy Base, Cuba), OQ5BW, PZ1GB, ME, UD, W; TI's 2AB, LR, OA, OEC, PA, RC and 4AC; VE8AS (Yukon), VE8NM (N.W.T.), VP2GE, 4TE, 4TJ, 9F; VQ4ERR, VU2HI, VU2KB, ZS's 1AX, BJ, BU, CN, CZ, DM, 2AF, BJ, CN, 5DS, 6BV, DW, FC, GO, GR, GV, HX, LF and T. What a fine list of ZS's! In addition we see ZL1HV (1854), ZL2BE (1925) and ZL4FK (0825). Very fine indeed, O.M.

**A. J. Slater** comes forward with another fine 'phone log: CPIAP (Q5 R7 at 2330), J3HRP (0830), 9AAW (0825); KH6BX, HO (1900), CT (1800); VE8AJ (0850), 8ME (1620), 8MJ (2200); VP2AT (Q5 R6, 2000), 2GB (Q4 R4, 2240); VQ3TOM (1840), VQ5JTW (Q5 R8, 2030, 14075 kcs.), VS1AK (1545), VS7FF (Q5 R7, 1700, 14200 kcs.), W2CDJ/J3, W4BOW/J9, W5IBE/J5 (all at 0830), XZ2AA (Q5 R8, 1640), ZE1JS (1825, 14110 kcs.), ZE2JA (1735, 14275 kcs.), ZP6AC.

**W. H. Harris**, G43 (East Suffolk), using a commercial SH5 receiver, heard: 11 CO's, HC1FG, 1JW; HI2L (1850), HK7KR, HH2PB, KH6CT (not KA, O.M.), OQ5BW, 4 OX's, TI5RG, VQ1UH (data on this one please?), VQ4ERR, VP4TJ, 5EM,

9F; VK7TR (Hobart), VE8NM, XE1AC, CQ; ZS1CN, DM, 2AF, BJ, 6FC, LF.

**Martin Harrison**, G54 (Darlington) logged EL4A, HH2PC (Q4 R5 at 1550), HK3AC, KH6BX (0830), 6CT (2130); J9ABX (2215), TI5RG, VE8AJ (Q5 R5, 14300 kcs.), VP4TE, 4TJ, 5AL (2235); VQ4ERR, VS7MB (56 at 1950), VU2JD (47 at 1900), ZL2BE (55, 0840), ZL4FK (35, 0840), and ZS's 1B, CN, DM, G, T and 2AF (all between 1750-2130).

**R. W. Collett** (Birmingham) sends in another 'phone log. The best are HK3DD, 1AC; KP4CL (YL op.), OQ5BW (Q4 R5, 2150), VP4TE, 4TJ, 9RC (is this TG9RC?); VQ4ERR, 5JTW; VK4VB, ZSIU, 2AF, 6T, and many Latins. The RX is a TRF3 and the aerial a 66 foot inverted L. (Please keep your log in alphabetical order, O.M. Tnx).

**A. Baldwin**, G193 (Leytonstone, E.11) has a nice CW log which includes CR4aa (1910), ET3y, HZ1ab, KL7bd (1850), KL7cf, KP4dh, PK4ks (1430), PK6ht, PZ1of, 1wk, VE8mf, VP4td, VQ3hjp, 5jtw, 8il (data please?); VS1bx, 7si; VU2aq (1930), YI2bx, ZL3fp (1815), 4ga (1915); ZS5ep, 6dr.

**J. E. James**, G565 (Cinderford), using an R1155, sends a list of stations which he thinks should be congratulated on their consistency and strength (all R8 or 9). The list includes VK2AMJ, VK3HG, HC1JW, CO2MA, LU4CN, CX1VD, CE3AE, OX3GC and UA1AB.

Finally for a quick "round-up" . . . (M. Preston) VU2AJ, AP; VQ5JTW, 4ERR; VP4TJ; VS9AR, PZ3AN, OX1YB . . . (Leslie Waine) OA4M, J6AL (Cairo), HK6AC, CO8FP, FF8FP, ZS6BV, 6P, CT2AB . . . (W. M. Dawson) EL4A, HI8X, HK3AW, KP4UU, VP4TJ, 9F; VQ4ERR, VQ1PW (data?), OX3GC . . . (A. E. Lincoln) CT2AB, OX1Z, 2K, 3GC; VO2AF, VP4TJ, ZL1HY, ZS2AF, BJ, 6OF . . . (N. Moor) EP3D, OX4PA, TI2OA, VK6RU, YV5AC, CT2AB . . . (E. R. Filer) VO6H, L; TI5RG, VP4TJ, TE, ZS2AF, 6LF; VQ4ERR, OQ5BW, YN1CB, PZ1W, PK1AW . . . (R. W. Ainge) VP4TJ, TE; VQ4ERR, ZS2BJ, ZS6GV, FT4AI, PZ1W . . . and thanks also to those whose names are not mentioned, but whose logs were greatly appreciated.

● 28 Mcs.

The band has been "open" throughout the month. Europe and the Far East were heard during the mornings, the band opening about 0800. The East Coast W's have been very strong around mid-day, with the West Coast coming in around 1700. Some evenings the band remained open until 1930.

**M. Preston**, G380 (London, S.W.17.), reports KP4AJ, VU2JB, VK5NR, VP4TZ, SU1HF, W6POZ, W6OZA and many Wo, W5, etc.

**D. L. McLean** (Yeovil) has heard EL2A (1205), KP4AJ, OQ5AR (1825), PZ1A, G; TG9RC (1825), VE5EA (1700), VE7AJN (1750), VO6H, VP6YB (1300), ZS1AX, ZS1T, and very many W5, 6, o and VE.

The pick from the log of **Reg Masters**, G407 (Portsmouth) is HK3AB, 4CO; J9AAO, 9ANA; KP4AJ, PK1AW, VQ2PL, VU2CQ, 2LA; VE5EA, 7AJN, 7MQ, 7XR; TI2RC, XE1GE, XZ2BM, 2DN, 2YT; YI2CA, 7G; ZD4AB, ZS1AX, 1CN, 1P, 1T. Very fine, O.M.

**G. K. Sutherland**, GW384 (Llanfairfechan) reports CX4CF (1235), J9AAI (1000), SU1HF, VL, WP; VS9AR, VK5NI (NR, O.M.?), VP4TZ, 6YB; XZ2DL (1000), ZL4AA (Q5 R5/6, 0930) and ZL4BN (Q5 R4, 0945). The RX is an SX28 with 16 foot indoor aerial.

**A. J. Slater** (Southwick) has just erected two half-wave doublets and is all ready for some intensive DX'ing. He says that 28 Mcs. is rendered useless in his area, except between 1100-0300 on Sundays, owing to the activities of a local beaming station. The noise level peaks to S9 on 29 Mcs. and causes trouble for miles around. A1 also mentions that he has heard W stations referring to a "noise" they get when the band is open for G's! We should very much like to hear from any other readers who experience the same or similar QRM.

In spite of the noise level some good DX was heard, but only between the times mentioned previously, including J9ANA, 9AAI; KP4BI, OQ5BH, PY2CK, PZ1A, VK2ADC, 3CP, 3KX, 5NR; VP4TZ, 6FO,

6YB, 9F; VS7PW, 9AB, 9AR; all W districts, XZ2DN, 2YT; YI2CA, 2WM; ZS1BV, 1T, 2AF, 6DW.

● **Stations of the Month**

XU6GRL is W6GRL in Nanking—on 28 and 14 Mcs. . . . ZD3af is another rare 'un and is operated by GM3AFG—is on 7130 kcs. . . . VQ4gjd has been heard in this country on 7040—power 5 watts! . . . Latest SU is 2DG, a G in Cairo. QSL via RSGB . . . OK1cav is the Czech society's transmitter and operates on 3.5 Mcs. every Thursday from 2000 GMT . . . CR4aa in Cape Verde has been putting in a fine signal on 14 and 28 Mcs. QSL via R.E.F. . . . FF8lf and FF8fp have been heard on 7 Mcs.

● **DX Target—(British Possessions in America—VP1-9)**

British Honduras: VP1AP, 1EL, 1JA are active on 14 Mcs. VP1C is a doubtful one. Antigua: VP2AT is active on phone and CW. Grenada: VP2GB, GE, GK and CD are all well heard on phone or CW. Montserrat: VP2MY is the only one heard. St. Lucia: VP2NP has been logged. British Guiana: VP3LF and VP3AG are on 14 and 28 Mcs. Trinidad: Many stations are heard from here, including VP4TB, TE, TF, TK, TJ, TR, AD and a possible VP4CB. W9BDT is also on the air from Trinidad. Jamaica: VP5EM and VP5RS are very active on 14 and 28 Mcs. Barbados: Best are VP6MR, PC, FO, YB, JR and ZI. Bahamas: Best stations are VP7NF and XX. Falklands: Only station we know of is VP8LK on 28 Mcs. CW. Bermuda: Active stations, on 'phone and CW, are VP9C, G, H, J, F, L, R, X. Also experimental

*A view of OK2RR, taken before the war. The operator is Otaka Halas, our correspondent for Czechoslovakia. He lost his station when the Nazis moved in.*



stations VP9D, K, O, W and Y. W8SIR operates from the islands.

● **Query Corner**

The primary puzzler this month should really have been under the heading of "Stations of the Month," but as so many readers asked about the station we give the full details in this section. We refer, of course, to station OI2KAF. Here is the "gen."

The call OI2KAF has been issued to the station of the Finnish Expedition to Brazil, which is to leave Helsinki on March 15th for the purpose of studying the solar eclipse next May. The radio operator is OH2QM. The station is, or will be, operating on all amateur bands from 3.5 Mcs. to 28 Mcs. and on commercial frequencies. The expedition is to visit the PY4 district of Brazil, some 750 miles inland from Rio de Janeiro. The equipment consists of a three-stage grid modulated transmitter, with ECO and a co-axial fed half-wave dipole aerial. Input is 60 watts 'phone or 200 watts CW. QSL's for the station may be sent to Box 101, Helsinki, or to I.S.W.L. H.Q.

L. B. Bloom reports hearing a QA1AB (Q3 R4) on several occasions on 14 Mcs., at 1030-1130. Has anyone any data? The same reader has heard CO4B, which sounds like another "phoney."

A. Baldwin reports hearing YO5wz. Readers may remember that we asked about this station in November. We still have no information on him! The call comes under the Rumanian group, but as YR5's now seem to be on officially we can only assume that friend 5wz is "one of those." Incidentally all YR reports should be sent to Box 326, Bucharest.

● **Gossip**

Norman White, G3IS, takes a poor view of the type of shack often depicted in radio journals, as being out of the ordinary hams reach and approaching a commercial station pattern. To which we agree. Norman is all for QRP work and suggests that we run a QRP Contest. Mal Geddes, G2SO, has the same sentiments and has kindly offered to organise such a contest. So, how about it, O.M.'s? If you are interested in taking part in a QRP Contest, please send along a postcard to this section with any suggestions or ideas you think should be incorporated in the proposed contest. It is up to you—if you want the contest, write now!

From ZB1L, via 28 Mcs. QSO, comes news of Maltese hams. The following stations are now active on the island:

ZB1E, 1H, 1L, 1S, 1AB, 1AC, 1AD and 1AM. The two-letter calls are post-war licencees.

J. Bowes Taylor writes to say that he has had a QSL from ZA2D. We are open to contradiction but we think we are fairly safe in saying that this station is the first ever to QSL from Albania. Jeff is the only person we know with a ZA ham QSL. Congrats., O.M.!

● **QSL's Received**

A. E. Lincoln, ISWL/G289: AC3SS, CN8BA, D4ACE, D4AKQ, EK1AD, EK1MD, EI3J, LA3AA, LA9W, LX1BU, ON4FN, OZ5WS, SM5UM, VO6F, VO2AF, VE1GG, VQ4ERR, W1CCZ, W1BPH, W2IXY, W2DMJ, XACP and ZS6GV.

E. R. Filer: D2BX, D4AOJ, VE2CA, VE2QA, W1BPH, XACP and XADW.

A. J. Slater: 3.5 Mcs.: W8VNG. 14 Mcs.: EK1MD, VE4GE, W8SIR/VP9, ZB1AC, PZ1A, ZS2CI, ZP6AC, VU2JD, HK3BI, XACV, WoCSU. 28 Mcs.: W5GCS, W6IDY, WoVAT, XABK and KP4AJ.

Roger Legge, ISWL/W223: 14 Mcs. CP5EA, EL5B, J2UVV, PZ1RM, TRIP, VO6K, ZE1JX, W4IER/Kwajalein, W8LQA/Kwajalein. 28 Mcs.: J9ACS, KL7FY, LX1AY, LX1BO, VQ2FR and W4BOW/Iwo Jima.

A. Levi, ISWL/G138: CE3AG, CE3CT, EI6P, CN8BA, IIFP, PAOLJ, PY1GM, W4IZT, XAEU, XZ2DN and CX3CN.

W. H. Harris, ISWL/G43: D4AKQ, HB9FG, W9VIZ and XE1AC.

D. L. McLean. LA6G, VE6RH, W3QR/"Dreamboat," W's 5BGP, 5HVT, 5IRO, 5IWQ, 5KZL, 6DUB, 7JPN, 8MOL, oBDQ, oHTE, and oKUU. Also XABG and XZ2YT.

J. Bowes-Taylor, ISWL/G65: I1AA, K4HWO, OZ7BO, W2JA, W7DET and ZA2D.

● **Topical QRA's**

Collected by your scribe, with acknowledgments to D. L. McLean, John Walker, H. M. Trye and Al Slater for several of those listed.

C7OK: H. A. Liss, P.O. Box 409, Shanghai, China.

CT2AB/CT2WX: APO 406, c/o Postmaster, New York.

EK1SS: Santini, 17 Hassan Street, Tangier.

EL2A: Firestone Rubber Plantation, Harbel, Liberia.

FF8WM: Walter T. Moore, APO 194, c/o PM, New York.

J3AAO: APO 301, c/o PM, San Francisco.

J9AAK: Major W. O. Brewer, HQ 316 BW, APO 239, c/o PM, San Francisco.

**KA1ABA:** Philippines Amateur Radio Society, Manila, Philippines.  
**KH6CT:** P.O. Box 237, Lanikai, Hawaii.  
**KL7BD:** Radio KL7BD, Moses Point, Alaska.  
**KL7CF:** Box 1134, Fairbanks, Alaska.  
**KL7FQ:** Frank Gray, Box 1270, Fairbanks, Alaska.  
**KL7FR:** Box 359, None, Alaska.  
**LI3DO:** John Osborne, Talbot House, Cairo, Egypt.  
**NY4AB:** U.S. Navy Base, Guantanamo, Cuba.  
**VE8AW:** Box 76, Whitehorse, Yukon.  
**VE8AJ:** Box 137, Whitehorse, Yukon.  
**VE8NW:** East Arctic Patrol, Ottawa, Ontario.  
**VO2AF:** c/o Navy 103, Fleet Post Office, New York.  
**VO2G:** Box 103, Bonavista, Newfoundland.  
**VP4TE:** Major L. Kerr, Chief Signals Office, British Forces, Trinidad.  
**VP5EM:** Constant Spring P.O., Jamaica.  
**VQ3EJT:** Box 457, Dar-es-Salaam, Tanganyika.  
**VQ4KTH:** Box 4013, Nairobi, Kenya.  
**VS9AR:** Aden Command Signals, Aden.  
**VU2KB:** 308 MU, R.A.F., India Command.  
**W2MMO/MM:** Matthew Krim, P.O. Box 49, 25 South Street, New York.  
**W7QI/KL7 and W7DON/KL7:** Box 307, Anchorage, Alaska.  
**XZ2AA:** Transmitting Area, Burma Ground Signals, Rangoon.  
**ZB1AC:** Army Signals, Malta.

(RESONANT LINES—Cont. from p.71)  
 Among the enthusiasms of some I have met have been photography, sound-recording, stamp collecting, high fidelity amplifiers, cabinet making, watch making, meteorology and even astronomy. Recently a 14½ year old listener whose second string was U.H.F. heat, came to light. Now I have met one whose second hobby is ventriloquism—maybe so he can QSO with himself!

**Buoyancy De Luxe**

The Dumb Blonde says she can't see much advantage in these gas-filled valves. While she concedes they might be all right for portable sets, she points out that even so it isn't as though valves are really heavy. Wise Guy quickly appreciated their advantages, and told her that if they slipped through one's fingers in handling, they would float gently to the ground without damage. Dumb Blonde said she hadn't thought of that and agreed it's wonderful what things these back-room boys think up.

*Bence Yap*

● **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.  
**G2DHV:** 14, 7 and 3.5 Mcs. CW. Any distance: 28 Longlands Road, Sidcup, Kent.  
**G2DRT:** 1863.5 kcs. CW and 'phone: 10 South Parade, Spalding, Lincs.  
**G2HFP:** 194 Downham Street, Blackburn, Lancs.  
**G3AJP:** 3.5 Mcs. CW: J. D. Baker, 3 New Villas, Fritton, near Great Yarmouth, Norfolk.  
**G3AYA:** 7 and 3.5 Mcs. CW: 64 Cavendish Road, Kilburn, London, N.W.6.  
**G3AZF:** 181 Oakfield Road, Liverpool.  
**G3BGR:** 7035.6 Mcs. 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.  
**G6MN:** 59610 kcs.: "Castlemount," Work-sop, 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.

**Byrd Antarctic Expedition**

This expedition is using the call-sign NAVE on 9280, 9670, 12265, 15930, 17820, 17840, 17850 and 20040 kcs. The station is operated from on board "Mount Olympus." All listener reports received will be verified, if addressed to Radio Television Section, Office of Public Information, Navt. Department, Washington, 25, D.C., U.S.A. Reporters of this station should be patient as replies cannot be guaranteed under six months.

Owing to the heavy traffic commitments, amateur transmitters are requested to refrain from attempting to QSO with NAVE.

**By the Right . . . !**

On page 43, last issue, the address for I.S.W.L. rubber stamps was given as "GHQ." We can only assume that the compositor must have served in the Army!

# "Radio Australia"

## STATION DESCRIPTION No. 9

### Beginnings

**A**LTHOUGH Australian short wave stations have been heard in this country since the days of VK2ME, that famous pioneer of the 1920's, it was not until 1939 that a really reliable service from "down under" became a fact. This was the year that "Radio Australia" came into being. By "Radio Australia" we refer to the International stations of the A.B.C. which does not include the stations at Perth (VLW) and internal services. "Radio Australia" commenced operations in a fairly modest way, with just one 10,000 watt station, and it was this small beginning that gave rise to a comment from certain quarters that the Australian short wave service was only a "penny whistle in the Pacific." This jibe, even unjust at the time, has been entirely refuted by the great developments of "Radio Australia" into the great international system we now know. In the early stages the system was admittedly weak in point of distances, but today, however, with transmitters amongst the strongest in the world, the service extends literally from pole to pole.

### The War Years

During the war, "Radio Australia" had two main functions (a) to tell the true facts of the war and (b) to tell the world that the Aussies were really "over there." The Nazis early recognised the quality of the Australian commentators and caution was applied when answering the radio tilts from them. Now that the war is over, it is apparent that these broadcasts also struck home to the Japs High Command. From the U.S.A. came the opinion "Australian news commentators are the saltiest in the world, and even more pungent than the Germans when they really go to town"!! "Short Wave News," in its humble way, echoes these sentiments and congratulates R.A. on a fine job of work.

### News Bulletins

Every 24 hours there are 23 news bulletins prepared and broadcast. Some are purely Australian bulletins, some world news and others a mixture of both. Three of these are specially prepared for Australian forces overseas. News is radiated in French, Dutch, Chinese, Malay, Siamese, Japanese and English. Bulletins in English are given at the following times. Letters

in brackets indicate target area of beam. WA is Western North America, EA is Eastern North America, P is Pacific and Asia, UK is United Kingdom.

Group 1 (Australian and New Zealand news): 0515 (WA), 0730 (UK), 1200 (EA), 1330 (EA), 1500 (P), 1515 (UK) and 1600 (WA).

Group 2 (World and Australian news): 0230 (P), 0900 (P) and 2145 (P).

Group 3 (World news): 0200 (P), 1045 (P) and 1230 (P).

### Talks and Features

These fall into two main groups (a) the Basic Programme and (b) Alterations and additions to the basic programme. Category (a) covers regular features such as "Australia Today," "Australian Sports Round-up" and "DX-ers call Britain." The second category covers special topical features in the sporting, domestic or political world.

These programmes are primarily designed to attract migrants by giving the facts of Australian life, to publicise Australian sportsmen, to show Australian cultural advancements, and to supply special programmes sought by overseas stations. This system clearly presents the country to the world as a young and vigorous democratic nation and the popularity is such that over 600 letters a month are received from all parts of the globe.

### The DX Sessions

Of special interest to readers are the two weekly DX programmes. One session is beamed to Britain and one to North America, both programmes being prepared and narrated by Ernest H. Suffolk of the Australian DX Radio Club. Here are the times to listen for these informative DX sessions:—

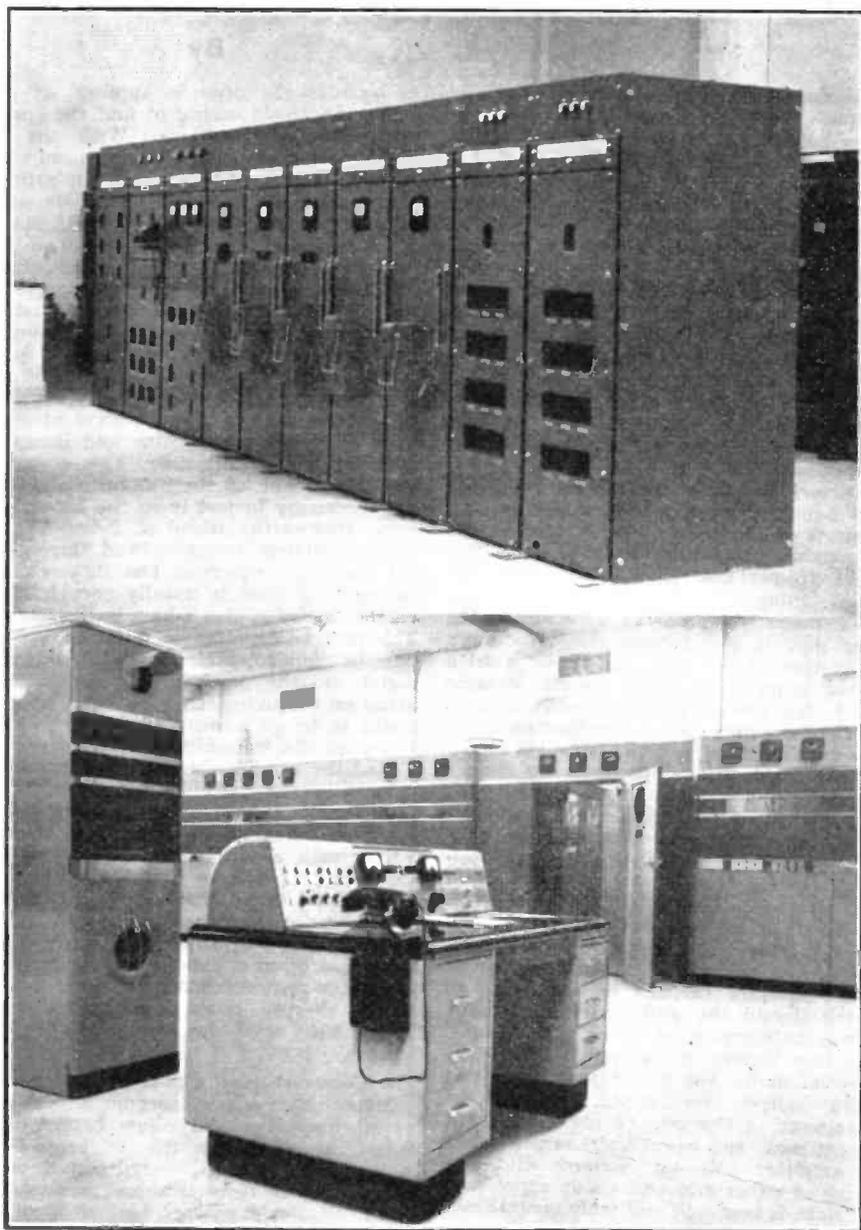
To Great Britain: Saturdays 2115 GMT over VLA4, 11770 kcs.

To Western North America: 0525 GMT over VLA4, and VLC4 (15320 kcs.)

To Eastern North America: 0020 GMT over VLA9, 21600 kcs.

### Transmitters

The Commonwealth's official short wave station has four transmitters, VLA, VLB, VLC and VLG. The first three are situated at Shepparton (Victoria) 120 miles from Melbourne. VLG is located at Lyndhurst,



Victoria. The original station, VLG, has a power of 10000 watts; VLC has a 50000 watt R.C.A. transmitter; the "big brothers" VLA and VLB are both of 100000 watts and are of Australian manufacture. These

two stations are both equipped with two 100000 watt amplifiers to permit rapid frequency changing. VLA was designed and built during the war, whilst VLB is the latest addition to "Radio Australia."

# POWER AMPLIFIER DESIGN

By G2CR\*

## Operating the Triode Amplifier

First check filament voltage at the valve-holders, then insert a 0-50 milliammeter in series with the earthed end of the grid leak and apply the drive to the grid circuit. As the grid tuning capacitor is swung through its range a spot will be found where the meter swings sharply upwards. Vary the coupling to the driver stage until the grid current is rather more than the rated value, checking that the anode current of the driver stage is not excessive. The amplifier must now be neutralized: Set the neutralizing capacitors to minimum capacitance and swing the anode tuning capacitor over its range. (There should, as yet, be no H.T. on the amplifier, of course.)

At some point in the anode tuning the grid meter will show a sudden dip, perhaps right down to zero. Next, increase the capacitance of both neutralizing capacitors about 10 per cent. and again swing the anode tuning.

The meter will probably show almost the same dip. If so, increase the capacitance by another 10 per cent. and repeat until a setting is found at which the dip becomes slight, then proceed more cautiously, adjusting the capacitors only a tiny fraction either way until a setting is found at which swinging the anode tuning produces no change in grid current. Look to make sure that both neutralizing capacitors are working at the same setting; they should never have got out of step in this process, but accidents will happen.

If all has gone well so far, switch off the drive and apply about 100 to 200 volts to the anodes of the amplifier. Set the grid-tuning capacitor to minimum and swing the anode capacitor through its range; at no setting should the grid meter show more than a milliampere or so of grid current. This tiny current is the result of contact potential in the valves but more than this would indicate oscillation. Increase the capacitance of the grid tuning capacitor a few per cent. and repeat until satisfied that the amplifier will not oscillate with and setting of either grid and anode capacitors. The stage is now well and truly neutralized.

Now switch on the drive again and meter the amplifier anode feed with a meter reading up to at least 250 mA. The anode current will swing up to a very high value

as soon as the drive is applied. At once swing the anode tuning to find the current dip indicating resonance. With the low anode voltage the dip will be to only 5 or 10 mA. The load, preferably an artificial aerial, may now be coupled until the anode current rises to between 25 and 35 mA. If all is still well, the full H.T. voltage may now be applied without other adjustment and the anode current may be expected to read in the region of 150 mA. A final adjustment of output coupling and tuning of grid and anode circuits should result in the grid current being close to the rated 36 mA. at resonance and decreasing with mistuning either way and the anode current at resonance being the rated value and increasing with detuning either way. This completes the adjustment of the amplifier and it is now necessary to test it on the air and get some trustworthy friend to listen for harmonic radiation on twice and three times the working frequency. The B.C. set may be used as there is usually enough ripple on the carrier to give a hum in the receiver. This may be expected to rattle the speaker on the fundamental, even without any aerial on the receiver and an artificial aerial on the transmitter, but the harmonics ought to be quite weak even with an open aerial on the transmitter.

Had the amplifier been a single triode the only difference in adjustment would have been that only a single neutralizing capacitor would have been used. If a screened valve, such as an 807 or PT15 had been used, of course there would have been no neutralizing to be done but it would have been necessary to check screen-grid voltage and current with the rated anode input. Excessive drive or inadequate loading of a tetrode or pentode causes the screen current to rise sharply, often to dangerous levels. They must never be operated without a load.

## The Construction of Power Amplifiers

Metal chassis have become almost universal nowadays and allow better mechanical structure than the old bread-board style. For the higher-powered amplifiers the chassis may be reduced almost to vanishing point by the ingenious use of mounting brackets fixed to the main tuning capacitors to support the valves and other components and the panel then becomes, in effect, the only chassis. This way of building an amplifier can be very compact, but is more favoured in commercially built gear than by the majority of amateurs.

\*Concluded from Part 1—page 35, February issue.

There is very little choice in the layout of a push-pull stage because of the exact symmetry of the whole circuit which practically compels a symmetrical layout. In all power amplifier stages it is important that the grid and anode leads should be as short as possible, but it is not always good to make the grid leads and the plate leads of the same length. This may result in a V.H.F. parasitic oscillation of the T.P.T.G. type with the actual grid leads and plates acting as linear tank circuits for the V.H.F. parasite. This type of trouble is seen most in the case of amplifiers using the special V.H.F. type of triode, such as the 35T or HK24, which retain their power gain well up into the H.F. region. The types which were intended for use primarily on lower frequencies, such as the old T25D, etc., behaved admirably on the bands for which they were intended and because of their high output capacities rarely gave rise to V.H.F. parasitics. If such a parasite is to be avoided, it is good to make the grid leads very short indeed (less than 2 inches) and the anode leads about 6 inches, or to make the anode leads as short as is convenient and to make the grid leads electrically much longer by incorporating a small lumped inductance between the grid-tuning capacitor stator and the grid terminal of the valve socket; this may consist of about ten to twenty turns of 18 S.W.G. copper wire wound to a diameter of  $\frac{1}{4}$  inch and about an inch long, mounted right up against the grid terminal.

Such an inductance is usually needed with an 807 unless other means are taken to stabilise it. Where parallel feed is used in either anode or grid circuits, the coupling capacitor should not be fixed directly on to the metal chassis but spaced off it at least  $\frac{1}{4}$  inch to reduce capacity to earth which might waste power.

Where pentodes or beam tetrodes are used, metal chassis construction is practically essential to provide good screening between anode and grid circuits. It is then convenient to sink the valve socket an inch or two below the main deck of the chassis by using a small sub-chassis, thus using the main deck as the screen between anode and grid circuits. This is better practice than mounting the valve horizontally through a vertical partition screen.

Screen and cathode bypass capacitors should connect direct to the cathode pin of the valve with the shortest possible leads in the case of a directly-heated valve, two .002  $\mu$ F mica capacitors should be connected in series across the filament pins and their centre tap used as the common earth point for all circuits. The direct-current

grid and anode circuit returns to the filament transformer or to the centre tap of a 50 ohm resistance across the filaments. This avoids A.C. hum being introduced into the grid-circuit and modulating the carrier. Where there is more than one stage in the driver unit to isolate the master oscillator from the P.A. this precaution is not always necessary but it is always good practice and it may make the difference between a T8 and a T9X report, especially with D.H. pentodes and tetrodes.

### Metering

Grid current is measured with a milliammeter between the earthy end of the grid-leak and cathode or filament centre tap and causes no difficulty but anode metering may become both a difficulty and a danger. It is generally unwise merely to plug the meter into the positive H.T. feed to the P.A.; this would mean that the meter would be live internally. The internal insulation is not meant for this and if it goes the meter-casing becomes live too, and may short the H.T. on to the metal panel, or the operator! It is unwise to have a jack on the panel connected into the H.T. + lead. The risk can be obviated by metering in the negative power lead but this means that the negative side of the power supply cannot be earthed to the power-pack chassis, or the metering circuit will be shorted via the rack frame. If more than one stage is fed from the same power supply, it is not possible to meter in the negative leads, which would normally be common to all such stages and the meter must then be placed in the positive lead. A bakelite-cased meter should be used, mounted on a sub-panel behind a window of glass or perspex to prevent touching the zero-adjuster screw whose insulation may not be safe at H.T. voltage.

If the meter cannot be left permanently in this circuit, or in a low-power set, then it is wiser to switch it from one circuit to another rather than to use plugs and jacks, entailing bringing the H.T. leads to the front of the panel through flex. A variant of the switching idea is to have a small cathode resistor in each stage, to produce a voltage drop of between 5 and 20 volts and to switch a voltmeter across each of these in turn to get a reading proportional to the current in each circuit.

### Coupling to drive stages and to load

Any of the usual methods can be used, but link-coupling is used almost universally for push-pull stages for both input and output coupling. In either case in a push-pull stage the centre of the coil is the

part at nearly earth potential and is, therefore, the proper place to couple the link coil. It may be made of a turn or two of heavily insulated wire wound over the main coil winding or interwound with it or, if variable coupling is required at the push-pull end of a link, then the coil may be split apart for  $\frac{1}{2}$  inch or so to give a gap in which the link can swing, or the link may be of smaller diameter than the coil proper and rotate through 90 degrees within the coil to vary the coupling from zero to maximum. The drive-coupling to a single-ended stage can conveniently be of the simple capacitive type, permitting the power amplifier grid to be switched to any of several doubler tank circuits for quick band-change. This is specially convenient with a screened P.A. valve needing no neutralizing.

Link-coupling of the aerial circuit has the dual advantage of helping to suppress harmonics and of reducing the risk of the H.T. getting on to the aerial.

#### Pentodes or Beam-tubes as Power Amplifiers

The outstanding virtue of these types is their enormous power-gain (up to 400:1), enabling them to give good output with tiny amounts of driving power. They are excellent for band-switched transmitters but if anode-modulated, then they must also be modulated in phase on the screen-grid, as mentioned earlier. This adds to the cost of the modulator stage. Neutralizing is not generally required, provided the construction of the stage is good and there is no stray coupling, outside the tube, between anode and grid and be it well noted, provided that the anode circuit is not unloaded.

A perfectly normal 807 stage will often oscillate if the drive is removed and the anode circuit is not coupled to the load. This is purely on account of the high power gain and with the aerial coupled such a stage should be perfectly stable. In testing a beam-tube stage for parasites, it should be first driven normally and the load coupled to give normal anode current, then check screen voltage and current and grid current. Enough fixed bias should be used to reduce the anode current to a safe value with no drive (40 mA. for an 807). Then cut off the drive and watch the grid meter. There should be no grid current at all. Then detune the anode circuit; it ought to be possible to detune quite considerably before the stage oscillates and the same should be true of the grid circuit. However, for most purposes, provided the

stage does not oscillate with both grid and anode circuits tuned to resonance then the set will work well enough, if the P.A. stage is keyed. If an earlier stage is keyed, then the stage that drives the beam-tube P.A. should be arranged to draw some anode current with the key up, or the P.A. may oscillate with both circuits resonated and the load coupled. Generally, if using a beam tube, especially on the higher frequencies, it is best to key the P.A., and cathode keying usually works reliably. Shifting from doubler to P.A. keying with an 807 P.A. often cures a bad case of clicks due to parasitic oscillation of the P.A. as the drive comes off.

It is vitally important not to overdrive a beam-tube; the screen current leaps to dangerous levels and the valve may be destroyed in a few seconds. Stick rigidly to the maker's figures. Since an 807 needs no more than half a watt of drive from the previous stage, there is no point in using a 6L6 doubler with 400 volts on the anode and 300 on the screen to drive it. The weak coupling needed to save the life of the 807 will often run the 6L6 screen current high enough to burn it out unless the screen voltage is kept down. It is safe enough to run the doublers at high anode voltage if that adds to convenience but nothing but harm comes from running any screening grid at more than the minimum voltage required to give the necessary output. In the author's set, operating portable/mobile in Italy, a 7C5 tritet was used to drive a 7C5 doubler and that drove an 807 P.A. on ten metres. The Crystal oscillator drew 10 mA. at 350 volts, with 30 volts on the screen; the doubler drew 16 mA. at the same anode voltage and with 50 volts on the screen. The grid-current to the P.A. was 3.5 mA. the screen current 9 mA. at 300 volts and the anode current ran about 80 mA. at 400 volts. The whole set ran from a 400 volt 125 mA. rotary. The example is quoted to show how excessive are the powers commonly used in amateurs' driver stages. No attempt was made to whittle the power to the drive stages any further, although theory suggests that both tritet and doubler stages had far more input than was really needed.

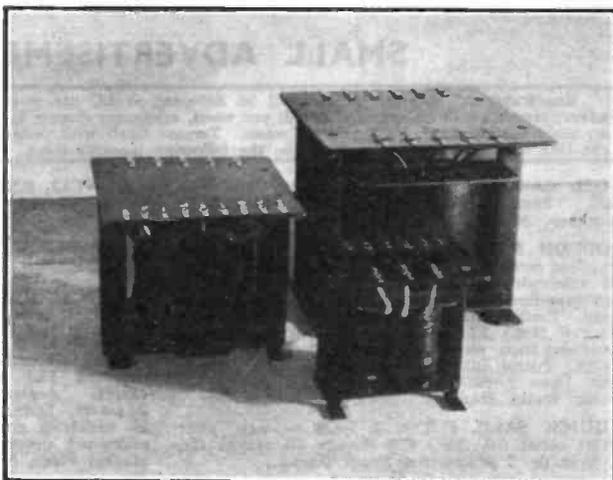
#### Suppressor-grid Modulation of Pentodes

This technique is exceedingly convenient for the man who does most of his DX on CW but wants a reasonable amount of phone for semi-local work without much expense. As compared with a stage of the same input power but anode-modulated, the carrier is cut to one quarter strength,

# Component Review



## RADIOCRAFT TRANSFORMERS



**R**EADERS contemplating building a power supply for receiver or transmitter would be well advised to consult RADIOCRAFT, 11 Church Road, Upper Norwood, London, S.E.19, before purchasing components for the job, be they transformers, smoothing chokes, high voltage condensers or rectifying valves. We have just had three of their transformers on test, a photo of which appears herewith. The largest is a 250 mA. transformer with 750-500-0-500-750 volt secondary tappings and primary tappings to suit mains voltages of 200-240. The middle size one is a similar but smaller transformer with 300-0-300 volt windings at 150 mA. and 5v. 3A. and 6.3v. 4A. C.T. filament windings. The smallest one shown is an example of their filament transformers.

These transformers are massively built and very well finished. They have bolted laminations and are fitted with distribution panels with the various tappings brought

out to soldering tags, a system we think much better than terminals which are so apt to work loose. The power pack is usually stowed away out of sight and forgotten in most amateur gear, and reliable connections are therefore essential if faults are not to develop. The robust and heavy construction of these transformers makes them eminently suitable for use in amateur gear and we found them quiet in operation and quite able to give their rated outputs with ease. We have no hesitation whatever in recommending them to our readers.

which means that for the same modulation percentage and wave-shape the phone strength will be halved. In adjusting the stage for Suppressor modulation, the stage is set for normal CW working with the suppressor either earthed or given a small positive bias from a tap near the earthy end of the screen voltage divider. When drawing rated input the positive suppressor bias is removed and is replaced by enough negative bias to cut the anode current to one half of its former reading.

Something of the order of 50 volts is commonly needed. The aerial current should be halved by this procedure and nothing else should be touched if this is so. In particular the aerial coupling must not be altered. Then all that is required is to connect a speech voltage in series with the suppressor bias and turn up the gain until

RADIOCRAFT carry a comprehensive line of components for all sizes of power supply and when space permits, we shall describe and illustrate a power pack using their components. In the meantime, we suggest readers consult RADIOCRAFT with their power supply problems, as transformers for special requirements will be wound to order.

the anode current shows a trace of a flicker. This usually gets the stage working properly. It is always necessary to get some near-by station with a good receiver to check the transmission for the first time on the air, because misadjustment can produce horrible interference. No more than a watt or two is needed to fully modulate a pair of PT15's with 80 watts input, so that a single valve fed from a carbon microphone is all that is really needed.

The majority of pentodes are bulky valves and their efficiency falls off above 14 Mcs. and they are not recommended for ten metres.

The 807 class of beam tetrodes work admirably on this band but even they show some loss of efficiency, so that it is wise to reduce the input by about 10 per cent. for ten metres if running at maximum ratings on other bands.

## 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.**

**ODEON RADIO, HARROW.** All components, complete equipment, test gear and technical books for transmitting amateurs, short wave listeners and experimenters now obtainable from 56 College Road, Roxborough Bridge, Harrow (2 minutes Harrow Met.) Prompt repair and re-alignment of communication receivers Personally supervised by G4HV. Postal enquiries receive immediate attention. Open 9 to 6.30 daily, including Saturdays. Odeon Radio, Harrow.

**QUICK SALE. H.R.O. & SX28** as new, your offers about £60. AVO 47A (Equiv 40) perfect £12. J. Wimble, 3 Hillmorton Road, Rugby.

**SEND 2d. stamp for complete bargain list.** Examples, Yaxley type switches 1/-. 1mA. Rectifiers for meters 2/6,  $\frac{1}{2}$  Amp. for chargers 5/-. 300 v. 60 mA. 5/-. Volume controls 1/-. Thermo 0.5 Amp. meter 8/6. Resistors 1W. 6d.,  $\frac{1}{2}$  W. 4d. All Short Wave Components. Carter's 67 Bell Lane, Marston Green, Birmingham.

**SALE. R.A.F. 1155 Receiver, modified A.C. mains, 9 valves, 5 bands, phone jack, etc. Perfect. £25 or offers.** Dawson, 18 Westgarth Terr., Houghton Rd., Darlington.

**FOR SALE. Tx CO/PA, Xtal, valves and coils for 1.7 Mcs. £8. G3XV, Sunny Cottage, Donnington Wood, Wellington, Salop.**

**A WELL-KNOWN technical publishing house** will be pleased to consider manuscripts for publication, dealing with all aspects of Radio and Television. Treatment of subject should be moulded on practical lines, with emphasis laid on data for the actual construction of apparatus. Manuscripts should be of 10,000 words and upwards, and should be submitted complete with finished or rough drawings. Box AC16562, Samson Clarks, 57/61 Mortimer Street, W.1.

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

**QSL CARDS.** Send for free samples. G2DJA, 137 Randall Avenue, London, N.W.2.

**SWAP two QCC crystals, 1883 and 1933 kcs., for any others between 1750-1815, 1845-1900 or any 3.5 or 7 Mcs. frequencies.** Cash adjustment if necessary. Write Box 1010.

**FILE your magazines and data in spring-back binders!** Will take anything up to 11in. x 8in. Ideal for keeping your data filed for easy reference. Price 5/- from S.W.N., 57 Maida Vale, Paddington, W.9.

**WANTED. 750 volt transformer, with 6.3 fil. windings and a 4 or 5 v. winding. Input 240 v. No fancy prices—must be cheap!** Write Box 1016.

### SHORT WAVE (HULL) RADIO G5GX.

Once more we offer the following kits:—

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1.V.2 Battery operated, 9.200 metres £10 0 0  
1 (Tuned) V.2. Battery operated

9.200 metres £12 12 0  
All the above complete with black crackle steel cabinet, coils, valves, but less batteries and speaker.

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25 watt C.W. Tx. ... .. £27 10 0

75 watt C.W. Tx. ... .. £32 10 0

140 watt C.W. Tx. ... .. £40 0 0

The above transmitters are complete with crystal and coils for one band only.

Further details supplied on request.

### SHORT WAVE (HULL) RADIO

30/32, PRINCE'S AVENUE  
'Phone 7168

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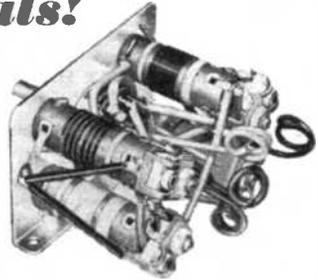
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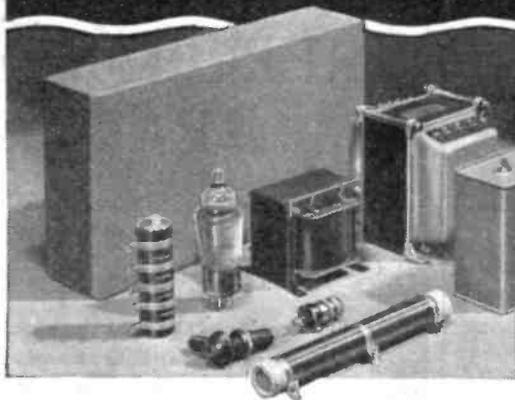
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