

SHORT WAVE NEWS

Vol. 2 • No. 8

AUGUST, 1947

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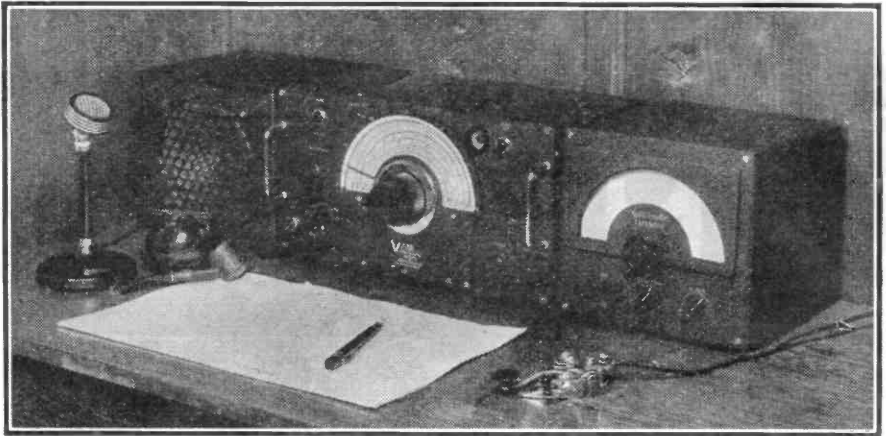


Magnetophone recorder at Radiotjanst

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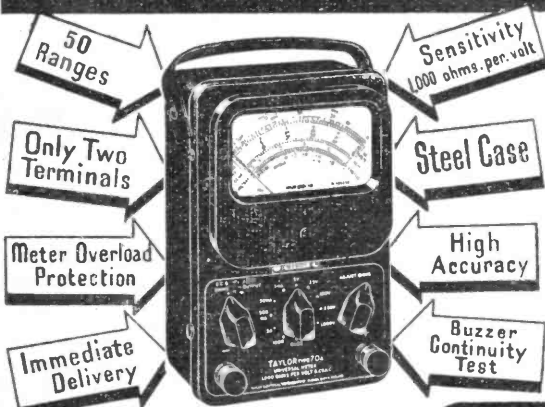
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Short Wave News

Vol 2 No 8

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August, 1947

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Editorial

On Signal Strength Meters

REALISING that it was my turn for the Editorial this month, I happened to exclaim meditatively, "What shall it be about?" A voice from the deep boomed "S meters!" The owner of that voice was our Business Manager, G2ATV, who had emerged from behind his barrier of ledgers and account books to give voice to a few things that had been puzzling him for some time.

ZATV ("Bill" to you), has for one reason or another, found most of his spare time to date occupied by tinkering about with this and that gadget. Most of his receiving time has been employed on tests, and he is therefore aware of the difficulties of furnishing R or S strengths.

Bill stipulates that the codes in existence for signal strengths, are pretty vague and one has to strike ones own criterion for R5 or R9. Without a meter, he says, it is purely guess work. Whereupon an S meter was built and arbitrarily calibrated. It was soon found that some weak signals gave more audio output than some of the stronger ones according to the S Meter. The meter in question was a valve voltmeter reading the AVC voltage, which depended entirely on the carrier strength of the signal received, and it all boiled down to the fact that a strongly modulated weak carrier gave

more audio output than a weakly modulated but stronger carrier.

The point of all this is to put before you the question of whether a report given in all good faith by someone allocating R or S value by guesswork is "suspect?" That's point one to start you talking, and, we hope, writing to us about.

Another snag cropped up when it was discovered that signals reading only S1 were perfectly readable! This not only applied to the home built meter, but also to one calibrated in decibels fitted to a National receiver and which should surely be the more accurate of the two. The latter has been thoroughly checked with its associated circuit and proved to be in good order. The only possible solution here is that delayed AVC is used, but if this is the case, then why was not the meter calibrated accordingly?

Having got that off his chest, ZATV returned to his accounts. Talking it over afterwards we all felt that the subject of signal strength meters is one alive with possibilities for discussion. We invite readers to send along to us their observations on the above and any other points relating to S meters. Also, why not include a discussion on the topic in the agenda for your next Chapter or club meeting?

W.N.S.

NOTICES

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

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

OUR MONTHLY PUBLICATION "RADIO CONSTRUCTOR" IS DEVOTED EXCLUSIVELY TO THE PRACTICAL SIDE OF RADIO

V.H.F. News

The Month's News

THOSE who are still active on 60 Mcs. have had another very good month. Sporadic E contacts have enabled more countries to be added to the "countries worked" lists. F, ON4, PAO, OZ, FA, ZB, I, HB9, OK and SM have all been contacted during the past month by numerous stations in this country. Added to these good Sporadic E conditions, have been several periods of good tropo conditions so that conditions on the whole can be said to have been excellent. 60 Mcs. is rapidly losing its name for being a "local band" only, and we feel confident in suggesting that now that most amateurs realise the possibility of inter-country communication offered by this band, many will forsake the crowded lower frequency bands in favour of the higher frequency ones. From comments one hears, one gathers that most of the "DX" fraternity are getting lined up for the winter opening of 28 Mcs. and we are going to be rash enough to predict an equally great migration to 60 Mcs. next summer. Activity on the continent is increasing rapidly. Several Danish stations have been doing well, particularly OZ7G who has worked I, HB and F. Sweden is well represented on the band with SM5KD, SM5FS, SM5YS, SM7BJ and SM7CI all audible in this country. Malta is represented by ZB1AB, ZB1AC and ZB1E all of whom have been contacted from this country. OK1FF, OK1AW, OK2MV, OK3ID, OK3LD and OK5DI have all been heard or worked in this country, whilst activity in Italy, Switzerland, Belgium, Holland and France is too great to catalogue. It is rather nice to have reached the stage of activity where "first contacts" are losing their "news value" and the "DX" is being worked by all. Most of those who have sent in reports this month seem to have shared in the "DX" and one can easily read the tone of satisfaction in one's mail this month. With all this inter-country communication, one feels even more confident that 60 Mcs. will not be allocated to some "domestic" radio service. G5BD, commenting on our remarks last month agrees that there has been a noticeable dropping off in interest, saying that only the well known calls are now to be heard. Which is just too bad, because activity was at a high level at the end of the winter and all those stations who have now gone off the band have missed the best of the fun.

Sporadic E Propagation

The recent burst of DX on 60 Mcs. has renewed interest in the phenomenon of Sporadic E propagation. It should be noted that this recent Sporadic E DX activity has been noticed throughout the world. It is by no means confined to our part of the world. Ed. Tilton of "QST," in a letter to 6DH draws attention to the equally remarkable DX conditions which have been experienced in America. He says:—"I'm not sure whether it is that we now have more activity so that we now realise something on every opportunity or whether there is actually more frequent and constant E ionisation; but certainly there is nothing in previous amateur experience to compare with what has been happening in the past two or three weeks. More trans-continental QSO's have taken place this season than in the whole past history of VHF. And according to past history the best is to come. We have never had such contacts prior to June fifteen."

VHF workers are now beginning to wonder whether it is possible to correlate the paths over which Sporadic E propagation take place with any other observable data. 8JV asks:—"Do you know if anyone is correlating Sporadic E data? That is, location and extent of the Sporadic E 'cloud'—even probably the speed of travel. In view of the difference between results in the southern part of England and in Scotland it might be possible to get some interesting data." On this point, Ed. Tilton says:—

"Though the areas affected by each individual patch of ionisation still seem small particularly over the northern part of the country, there have been several times when there was simultaneous activity in a number of places showing well defined paths in operation. Several new records have been set up. On May 26th-27th, for instance, Florida W4's worked Oregon and Washington W7's—the longest Sporadic E to my knowledge—about 2700 miles. There has been more "double hop" if we may call it that. W4 to W6 took place on May 25th, also W4 to W7 and also to Arizona from W4 on May 26th-27th. On June 2nd we had a hair splitting day in W1. W1CLS worked W6GCM, W6LSN and W6ANN of South California and W7TXM of Tuscon, Arizona. I worked W6LSN, W6ANN and W7QLZ who was using a ten watt mobile rig with a whip antenna."

Sporadic E propagation offers an excellent field of investigation for the amateur experimenter. In fact the amateur radio world is about the only organisation who can investigate it, as an essential feature of any such investigation is a large number of stations scattered throughout the world. No academic or commercial interest would be

able to set up such a chain of stations as already exists in amateur radio circles. Note too, that only by sending in reports of 60 Mcs. activity and observations to the 'mouth-pieces' of amateur radio, viz. the journals and publications devoted to amateur radio, can the data accumulated by amateur radio stations be recorded and correlated. Those who investigate the mysteries of the ionosphere in a professional capacity, draw their material from all the literature they can lay their hands on and some of the most valuable material is at times found in amateur radio journals. Even our humble little S.W.N. gets into the recognised radio laboratories of this country and America. So no matter who you patronise, send in any material of interest you may have. It is all of value.

Monitor Station and Area Reports

South Coast

G2XC reporting on activity for the past month draws attention to the generally good conditions on the South Coast. July 20th was a particularly good day; he worked 19 countries that day, including five stations over 150 miles distant. He remarks that at weekends when there has been daylight activity, the band has proved itself open for tropo contacts equally well both day and night. His skeds with 6DH have been continued with success every day and he was in on much of the Sporadic E DX. He points out that much of the east and south-east coast work with the continent is via tropo propagation, not Sporadic E. He worked F8GH and F8NW and ON4KN, ON4IF and PAoPN in this way. Another interesting point is that when G6LK worked ZB1AC and ZB1E between 18-20 hrs. on July 21st; 2XC, who was on at that time, did not hear these two ZB stations, which adds force to the suggestion that some very interesting work could be done on the extent and direction of Sporadic E propagation paths.

South-East Area Monitor Station Report.

(J. Bramhill, 2BMI, 27 Oakleigh Road, Hillingdon, Mddx.) "The following stations are regularly active:—G2CUA, 2ZV, 2MV, 2NH, 2YL, 2XC, 2MR, 3FD, 3NR, 4DN, 4MR, 4KD, 5PY, 5WP, 5MA, 5KH, 5UM, 5RD, 6FO, 6UH, 6LK, 6VX, 8KZ, 8SM and 8GX. New stations heard on the band are:—G2XM, 2UJ, 2QY, 2FBU, 3HAR, 6KV. Others known to be active are:—2QL, 2FVD, 2HX, 2QR, 2AOK, 2AAT, 2KI, GM3FW, GM3OL, 3APY, 3CC, 3YH, GW4SW, 4LU, 4KD, 4OU, 5JU, 5MR, 5BY, 5GX, 5SZ, 6KB, 6DH, 6VX, 6CW, 6OS, 6RB, 6MN/A, 6YU and 6XM.

"2LC reports FA8BG and FA8IH still very active working G's by the dozen. 2CUA has constructed an all metal 4 element beam. He has worked ON4KN, FA8LA, FA8BG, FA8IH and G5GX and G3CC of Hull."

East Coast

G6DH and G5BD have been as active as usual. 6DH's log shows 25 contacts with PAo stations, 15 with ON4 stations, and the usual run of G's. He was in on the SM and FA contacts. 6DH remarks that he feels a difference of 50-100 miles in location makes quite a difference in the signals heard by sporadic E.

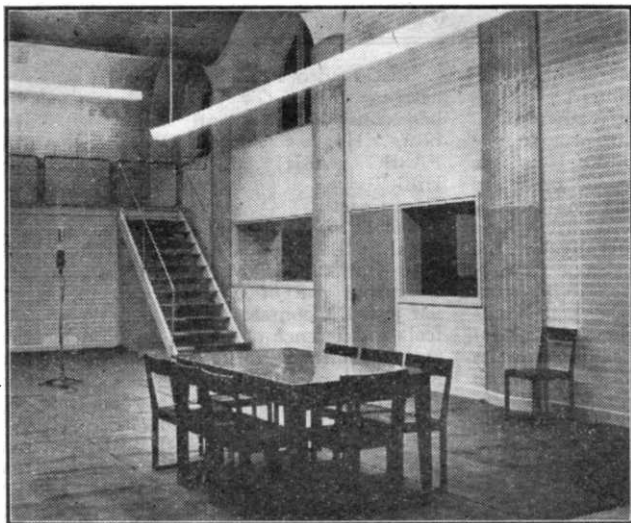
G5BD has been having a good time. He heard SM7BJ, SM7CI, OK1FF, OK1AW, OK2MV, OK3ID, OK5DI, ZB1AB and GW5UO for his best DX reception and worked OK1FF, SM5FS, ON4IF, PAoPN and F3JB for his best DX contacts. He has now worked 8 countries. 5BD has had a report from G8JO in South Shields saying his was the first signal from over ten miles to be received up there.

G3TZ and G2AMK are keeping the flag flying in Grimsby, but have nothing outstanding to report this month.

Midland Area Monitor Station Report.

(N. White, G3IS, 59 Eastlands Rd. Rugby.) "During the month conditions on five have in general improved, DX being worked and heard by Midland stations. 6MN of Workop heard FA8IH and FA8BG at S6 and has also heard F3HL. 4LU of Oswestry has been S8 on many occasions. G3APY worked GM3OL on June 26th and on July 2nd he worked OK1FF. The first G/OK contact is accredited to G3DT, who worked OK1FF on July 2nd. 6YU of Coventry made 45 contacts during the month with 22 stations including the following new ones:—2AOK, Glos., 2HX, Malvern, 2PU, Cambridge, 8KZ, London and F9BG, Toulon. The latter station was worked at 2000 GMT with S9 report out and S8 report in. 8WV of Hanslope remarks on conditions on June 18th. He heard FA8BG working I1DA at RST 579 at 1900 BST. The band was dead apart from the FA station. Later he worked 2XC and passed on the news of FA8BG giving 2XC his frequency. Almost at once the south of England opened up like 40 metres and he heard FA8BG calling G5WP, G8SM and many others. At 2015, FA8IH showed up at 569 and both stations remained audible until after 2200. G3IS has worked two new stations; 4BI of Loughborough and 2RI of Leicester.

"Wm. Pierce gives the following useful frequencies:—OZ7G, 58.84 Mcs. SM5TH, 59.92 Mcs. SM7XX, 58.80 Mcs. OK3ID, 58.50 Mcs. and F8GH 59.15 Mcs.



A pleasant studio at "Radiotjanst."

Around the Broadcast Bands

Monthly survey
by "MONITOR"

All times are given
in G.M.T.

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

THIS month several very interesting reports have been received from readers in the U.S.A. Highlight this month is news of the new SW station in Trinidad BWI . . . now testing.

Your scribe would appreciate more reports and news from readers in the British Isles and the Colonies. My QRA is: Monitor c/o SWN. Let's know how Condx are in your district and also the most constant signals heard over a period of a month. Your scribe would also appreciate "sharp" and clear photos of readers for future inclusion in this column. Now for the months news.

● South America

Ecuador. E. Coates (Dagenham) logged HCJB "The Voice of the Andes" Quito on their 9958 kcs. channel at 0430 with R8 signals requesting reports. (RX:SH6).

Chile. CE960 "Radio la Americana" Santiago heard on 958 kcs. with very good signals. Sports relay after 0500 on Sundays (Arthur Cushen).

● Asia

India. VUD11 Delhi 9660 kcs. heard with strong signals when giving Native programme from sign on at 1700 until close at 1745. Very bad QRM from Radio Wien on 9665 kcs. (Sidney Pearce) (RX: Sky Champion).

Ceylon. Radio SEAC Colombo heard on Sunday, May 18th, asking for reports on best frequency received and using 15120 and 17770 kcs. channels for weekly BC to the British Isles at 1630-1830. For listeners in India and Ceylon 6075, 9520 kcs. and 88.3 metres are used. On June 1st. programme

for British Isles was radiated over 15 mc. frequency and also on a new channel of 17820 kcs. states Sidney Pearce.

Iraq. Baghdad. 6780 kcs. R7 at 2100 when heard signing off with "pips" time signal and Arabic (Pearce). Your scribe heard them at one at 1750 with Native music. Gives call as "Huna Baghdad" Signals R7 Q5 with heavy QRN. Has anyone a QSL from them? (*Believe Sidney Pearce has—Ed.*)

Siam. Bangkok. Now operates on 6125 kcs. and heard with English news at 1115, music 1125 and sign off at around 1130. (Cushen).

Malaya. Kuala Lumpur. Now moved from 6160 kcs. to 6045 kcs. and is heard with good signals over this frequency. Relays news from "Radio Malaya" at 1100. "Radio Malaya" has good signal also on 4830 kcs. (Cushen).

Japan. WLKS (B.C.O.F.) on 6105 kcs. Power: 1 kW. Signs off now at 1000. Good signal. Also heard on 2465 kcs. from 0800 also using 1kW.

Armed Forces Radio Network Tokio has been heard using JKD 6015 kcs. and JKE 4860 kcs. News at 0900. JKE is on 9610 kcs. to 0845 before moving to the 4 mc. outlet. (Cushen).

China. A newcomer to this column is August Balbi of California. He tells me in a recent letter that London was his hometown from 1913 to 1920 and he hopes someday to visit it again when conditions are more settled. He also adds that his Son was born there and also the XYL. The BBC transmissions are received at his QRA like

the "locals," - when beamed to North America! Hope to hear more from you OM, and to see you in person someday.

A.B. states that XGOY Chungking is now on 1517 kcs from 1035-1645, and very close to GSO.

Arthur Cushen sends along the latest schedules of Chinese stations as follows: XGOA Nanking. 9730 kcs. (2kW.) 5918 kcs. (7.5 kW.) 11835 kcs. (7.5 kW.) XORA Shanghai. 11690 kcs. (5 kW.) 2345-0200. 0800-1600.

XRRA Peiping. 6090 kcs. (10 kW.) 0030-0130. 1100-1415.

XUPA Taiwan. 9680 kcs. (3 kW.) 2200-0000. 0355-0620. 0900-1455.

XTPA Canton. 11650 kcs. (1kW.) 0400-0630. 1000-1430.

XLR Hankow. 6054 kcs. (1kW.) 125000 (1kW.) 0430-0530. 1030-1445.

XGOY Chungking. 15200, 11915, 9635 and 6140 kcs. (all 35 kW. transmitters), 7153 kcs (10 kW.) 0955-1650.

XPRA Kunming. 6404 kcs. (1.5 kW.) 0500-1000. 1130-1600.

XPSA Kweiyang. 7007 kcs (10 kW.) 2355-0030. 0530-0700. 1030-1430.

XMRA Lanchow. 9750 kcs. (1 kW.) 0000-0200. 0530-0700. 1100-1530.

Philippines. KZRH Manila 9640 kcs. is heard to 1600 and states it is the most powerful station in the Philippines.

KZPI also located in Manila uses 200 watts and is testing on 9710 kcs. and was heard at 0945 requesting reports. Signs off at 1600, but BC continues throughout the 24 hours on Saturdays. (Cushen).

Maccasar. "Radio Maccasar" verifies by letter giving power as 10 kW. Transmitters are as follows: YFA4 9250 kcs. and YFA10 5050 kcs. Schedule is: 2230-2330, 0400-0630, 1000-1430. Has English-Dutch identification each ½ hour. English programme Wednesdays and Fridays at 1300-1315. (Cushen). QRA: "Radio Maccasar" Strandweg Zuid 2, Maccasar.

Java. Batavia. "Radio Batavia" 11440 kcs. 1430-1500 beamed to US Strong signals. Also heard on 15145 kcs. with beam to Australia and Malaya. Both in parallel with English news at 1430 and repeat at 1450. 11 mc. channel is best signal of any Java station here, while 15 mc. frequency is weak. Station on 9680 kcs. also in Batavia relays Home Service 0400-1530. News in English at 0530. (August Balbi).

R. Masters (Portsmouth) reports the 15 mcs. channel at 1415-1500, with newscast and talk, "The conditions in the Republic." This reader wants the QRA. "Radio Batavia," Batavia, Republic of Indonesia is the nearest I can give you OM.

BROADCAST STATION COUNTRY PANEL

No. 13: PANAMA REPUBLIC

HOB: Panama City, 6176 kcs., "Radio Panamericano." 1000 watts. 1130-0330 GMT.

HOLA: Colon, 9505 kcs.: "Radio Atlantico." From 2200 GMT.

HOXA: Panama City, 15100 kcs.: "Radio Centro Americana." 7500 watts. 1000-0400 GMT.

HOXB: Panama City, 11810 kcs.: Slogan, etc., as above.

HP5A: Panama City, 11695 kcs.: "Cadena Panama de Radio-fusion." 500 watts. 1200-0400 GMT.

HP5B: Panama City, 6030 kcs.: "Radio Miramar." 250 watts. 2300-0400 GMT.

HP5H: Panama City, 6122 kcs.: "La Voz del Pueblo." 500 watts. 2000-0400 GMT.

HP5J: Panama City, 9605 kcs.: "La Voz de Panama." 380 watts. 1200-1500, 2100-0330 GMT.

HP5K: Colon, 6005 kcs.: "La Voz de Colon." 800 watts. 1200-1800, 2200-0400 GMT.

Stations and channels not at present operating:

HOXC, 9650 kcs.; **HOA,** 2340 kcs.; **HP5F,** 6050 kcs.

● Australia.

J. Lown (Belfast) reports VLC9 on 17840 kcs. from 2130 until close at 2300. This reader also mentions the Inter-State stations of the ABC... VLG7 15160 kcs., VLH4 11880 kcs. and V1R2 9540 kcs. These stations can be heard testing before coming on the air at 1955.

VLC9 heard by your scribe at 2145 with newscast. Signals very strong and Q5 also VLG7 R7, Q5 heard closing at 2200 after news. Programme was continued over VLH4 in the 25 m. band.

VLA8 and VLC8 7280 kcs. now carry the BC to the British Isles at 1745-1915. VLA8 is heard at R8 Q3 with very bad QRM from Algiers (Voice of America station), but is Q5 after 1800. VLC8 has not been heard at your scribes QRA.

● Europe

Austria. Innsbruck. 6005 kcs. heard with call at 0500 followed by news in German. R6-7 signals. Also logged around 2100. (Pearce).

Poland. Warsaw. "Polskie Radio" 6100 kcs. now gives news in English at 1950. (Pearce).

NOTE THE DATE!

The next special I.S.W.L. dedicatory programme is on October 12th and will be radiated over the Swedish stations. Full details next issue. Don't miss this!

Italy. Busto Arsizio 1 9630 kcs. heard giving news BC for England at 1910, also music and news at 1930-1940. Uses 11810 kcs. channel also. (Pearce).

Luxembourg B. Dempster (Alloa) sends in schedule received from Radio Luxembourg. Daily 1900-2200, Tuesdays to 2215, Saturdays to 2230. They hope to use 25 kW. power soon when new transmitter is ready. Frequency: 6090 kcs.

Switzerland. Berne. Additional calls and frequencies assigned are given in a letter received from Roger Legge (New York) and reads as follows: HEU2 9520 kcs., HEU3 9665 kcs., HEU4 11718 kcs., HEU5 11815 kcs., HEU6 15315 kcs., HEU8 17775 kcs., HEU9 21705 kcs.

G. S. Gilham-Dayton (Wendover) sends in a photo of the transmitters at Schwarenbourg. Sorry we cannot use this as it is not "sharp" enough OM. This reader uses a Murphy TA90 SH6 (export model) and says he gets very good results with it.

Spain. Schedule from Radio National states the following times of transmissions for Europe. Frequency: 9368 kcs.

1930-2000. In French. 2000-2010 German, 2010-2020 Italian. 2020-2035 Portugese. 2035-2050 1st transmission in Russian. 2nd 2050-2100. 2100-2130 English. 2130-2145 Arabic. 2145-2200 Spanish for N and S America.

Requests reports to "Radio Nacional de Espana, Avenida del Generalisimo, Num. 40, Madrid (Gilham-Dayton).

● **West Indies (British)**

British Guiana. J. Lown has logged ZFY Georgetown at 2300 giving newscast from BBC and heard on 6000 kcs.

Trinidad. VP4RD Port of Spain has been heard with 20 minute tests at 0000, 0100 and 0200. Asked for reports to be sent to: Broadcasting House, Port of Spain. This news comes from Roger Legge whom I understand is shortly taking up the post of Assistant SW Editor of the Newark News Radio Club. Congrats OM.

Tests daily at 1100-1120 or later, on announced frequency of 9635 kcs. When signing off they say that they will return to the air on 6085 kcs. Also tests on 9 mc. channel at 0000-0115. Will begin regular schedules around August 1st. Request reports. Has been using a pair of vertically stacked dipoles to give maximum radiation and so provide good local service. Now will experiment with single dipole antenna. (Radio News, USA).

● **QSL Section**

Sidney Pearce: PJC1—Letter veri from Programme Editor in English requesting future reports—(1st QSL reported OM... congrats)*, CR7BU, PCJ, EPB, KRHO, (9 mc.), XGOY (6 mc.), TAQ, Dakar, LRX1, XTPA.

D. Furnell: CKNC, HEI5, OTC2, Radio Andorra, Radio SEAC, VLA4, WGEA, WNRX, ZAA, Warsaw, VUD9, SDB2. G. S. Gilham-Dayton: TGWA. R. Masters: CJCX, CKCS, AFN (Frankfurt), CHNX, VONH, TAP, PCJ, WGEO, WLWS. Jean Beauvoir: ZQP, CR7IP, SUX, WRUA, WRUW, Singapore. E. Coates: Radio Sofia, HER3, ZFY, OLR3A, PCJ, OTC, WNBI, CKNC, WBOS, WOOW, WGEO, WCBN, VUD5. B. L. King: VLB9, VLA8, VLA4, CKNC, CKCS, CHOL, WRUS, WRUW, CR7BE, OTC2, OTC5, HER5, PCJ. Polskie Radio, ZAA, Radio Omduran, FZ1, (all received during period of May 1st-June 10th. VFB OM).

Arthus Cushen: CHNX, VQ7LO (4 mc.), CR7BJ, VUC2, Radio Macao, WRUS, WRUA, OLR2A, OLR4A, Warsawiii. G. S. Gilham-Dayton in a later report mentions: WBOS, VLA4, Radio Italia, Radio Madrid, VLB6, VLC11, TAQ, FZI (photo of transmitter building), Radio SEAC, SDB2, Radio Warsaw (Registered post), CKNC, CKCX, CKCS, CKLX, CHOL, CKLO, HP5K (blue card with large red letters and "La Voz de la Victor" in dark blue above), ZZY (Buff coloured card), KRHO (card depicts palms with aerial mast protruding), PCJ, Radio Singapore, WOOW, WOOC, ZRH (yellow card with green SABC letters), WLWK, WLWL, HER3, HEI5 and XEBT. (Nice going indeed OM).

* (Have a QSL from PJC1 for report of 1937—Ed.)

● **Acknowledgements**

Sidney Pearce BSWL336 (Berkhamsted, Herts.), G. S. Gilham-Dayton (Wendover, Aylesbury, Bucks.), R. Masters ISWL/G907 (Portsmouth), August Balbi (Los Angeles, Calif. USA), Arthur Cushen ISWL Rep. for New Zealand (Invercargill), Roger Legge (New York 19, USA), D. Furnell ISWL/G751 (Bromley, Kent, aged 12), B. Dempster ISWL/GM231 (Alloa, Clacks., Scotland), E. Coates (Dagenham, Essex), B. L. King ISWL/G537 (Watford, Herts.), J. Lowens ISWL/GI 830 (Belfast, N.I.), Radio News (USA).

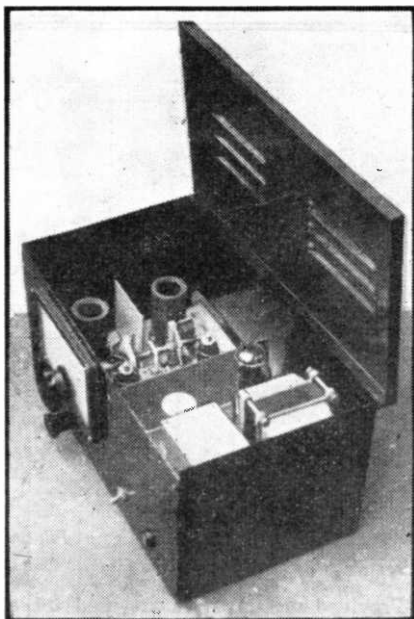
Your scribe regrets that several reports have to be held over until next. So until then... good hunting and lots of DX to you. Mint stamps for personal QSL purposes would be appreciated by your scribe in exchange for "G" ones. From ZS, ZL, VK. W members only.

A Preselector for the "Basic Superhet"

by

Gene Zap

While this Preselector has been designed especially for the Basic Superhet constructor, it will make a first-class Dx fetcher for any type of receiver, whether superhet or straight. Constructionally it includes a few novel ideas which should appeal to the experimenter with limited equipment. The components used are not "specified" in the sense that they have no alternatives. Good results can be safely expected if parts of similar characteristics are used. The mains equipment need not be built where the receiver to which the preselector is added is capable of giving the additional H.T. and heater current. As a matter of interest the designer has put it through its paces with the basic superhet, a commercial all-wave receiver and a communications receiver (1 stage R.F.) and in each instance it has proved itself a really worth while proposition giving a gain of two to three R points.



As will be seen by the circuit the Preselector, in common with other Preselectors, consists essentially of a couple of R.F. stages, and as even the S.W. beginner soon learns, very little gain (in proportion to the two stages) can be expected on the higher frequencies. However, a gain of a couple of R points does mean the satisfactory reception of that DX station which would otherwise be too weak to be readable. But the advantages of a Preselector do not end there. It also gives an improved signal/noise ratio, and in the case of a superhet receiver gives virtual freedom from second channel interference, except when getting down to the region of U.H.F.

General Design

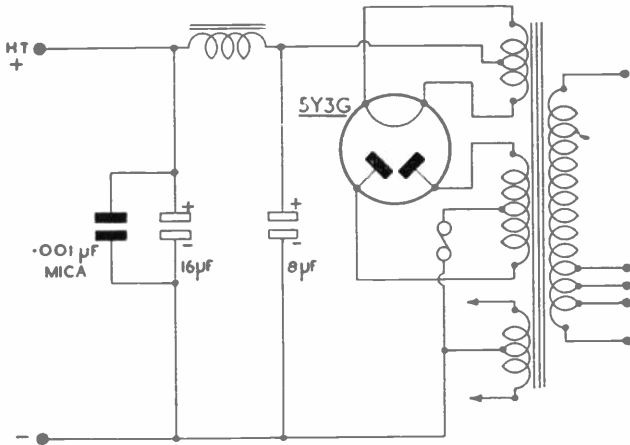
Until the photographs are studied carefully it may not be quickly realised that both the Preselector itself and the power unit are built on separate chassis. It is probable that many readers will have the required additional power available from the Receiver to which they intend to add the Preselector. They, therefore, may not be interested in the power side as such, but it does make it possible for it to be added to ANY receiver, which must even for this reason make it worthy of consideration. Also by virtue of its being readily detachable, it can be taken out and used to power any other apparatus. The preselector is similarly detachable and a U.H.F.

Converter put in its place with the power supply already to hand. The Eddystone full-vision dial and drive remains in its place and is used for both the Preselector and the U.H.F. Converter, the only other control knob being positioned identically in both instances, thus achieving unusual versatility in addition to a practical and economical arrangement. It is worth noting that two additional scales are supplied with the Eddystone drive and with a little additional trouble a separate calibrated scale can be used for each piece of equipment.

Components

Any good make of components may be used provided they have similar characteristics and if preferred a two-gang capacitor instead of single ones linked by flexible coupling, may be employed. If a two-gang capacitor is used it is important that the layout for each tuned circuit is symmetrically arranged. With the two circuits "balanced" the stray capacities will be of the same order and this is important particularly in the grid wiring. Even if they are trimmed to match on one band and hold throughout it, the same bother will re-occur each time the coils are changed. No trimmers are used and reasonably accurate alignment is assured by care in matching the coil windings and keeping the tuned circuits identical.

Low loss components should be used and all capacitors must be of the mica type.



The power-pack circuit

Screening

Provided metal valves are used the only screening required above chassis is a simple shield between the coils. If glass tubes (6K7G) are used, valve cans must be added. Alternative valves are the Mullard EF39 in which case the screen resistors should be 10,000 ohms. In the sub-chassis a screen of nearly the full width is used and this follows the line, and is in effect a continuation of the above chassis shield.

It should be noted that the components on the power side (Vortexion mains transformer and Bulgin choke) are of the encased pattern but the R.F. is also well screened from them by the use of a separate chassis the sides of which afford sub-chassis screening and this is continued above chassis by a single plate. Actually this precaution should not normally be necessary but owing to the versatility of uses to

which it might be put its inclusion was considered worth while. In any case it should not be overlooked that any hum in the Preselector would be further amplified by the Receiver.

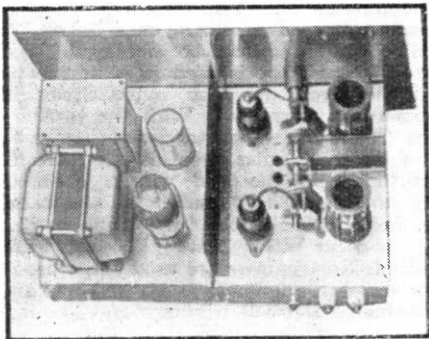
Regeneration

The grid leads must not be screened—doing so would entail losses. With the gain fully up there will be slight tendency to self-oscillation and this is an advantage, giving a marked increase in both selectivity and sensitivity. If this regeneration is too much the best point below actual oscillation can be found by slacking off the gain control a little. Direct regeneration is not advisable in a Preselector as valve noises fed to the grid circuits, added to the thermal agitation noise already present, would be further amplified which would only counteract the desired improvement in signal/noise ratio.

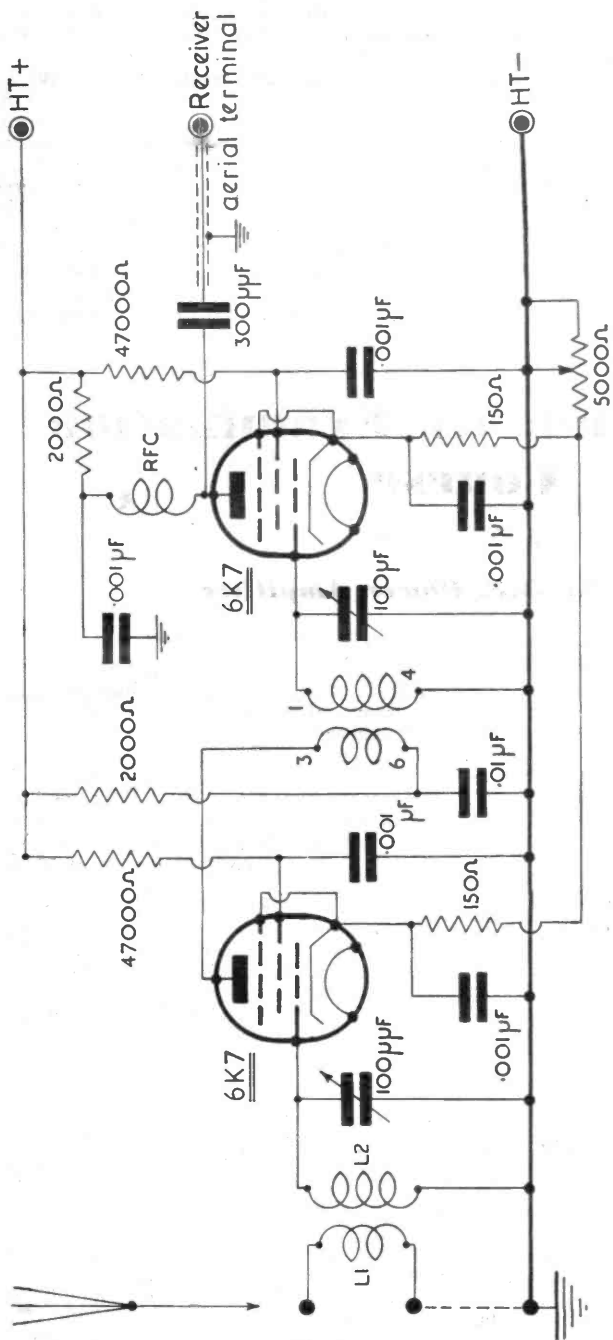
Construction

The layout, etc., will be quite apparent from the photographs and as the wiring is straightforward little further need be said about it, but there are a few points which should be stressed. The only wire which may be screened is that from the anode of valve 1 to coil 2 and this will only be necessary if it runs close to, or parallel with, other wiring. Under no circumstance should the grid leads be screened—this would result in H.F. losses and disturb the required regenerative effect.

If it is proposed to use the Preselector for U.H.F. work, a U.H.F. choke should be wired in series with the S.W. choke in the anode circuit of the second valve. The output of the Preselector is coupled through



Top view, showing layout above chassis



The theoretical circuit of the presselector

THE "BASIC SUPERHET" ARTICLES

Designed and described by "Centre Tap"

- THE BASIC RECEIVER: July, 1946 (Vol. 1, No. 7)
- ADDING AN R.F. STAGE: September, 1946 (Vol. 1, No. 9)
- ADDING A B.F.O.: November, 1946 (Vol. 1, No. 11)
- A PRESELECTOR: August, 1947 (Vol. 2, No. 8).

a .0003 mica capacitor but an unscreened wire must not be used for the output lead. There is far too much danger of it acting as an aerial and picking up signals direct, or of interacting with the aerial proper and causing instability. The output may be fed to the receiver by link coupling if desired—this is good practice and is frequently used.

The Preselector, like all other S.W. receiving gear, is best housed in a metal cabinet and placed as close to the receiver to which it is added, as is reasonably possible.

It is, of course, not necessary to be receiving a signal to keep both the Preselector and Receiver tuning in step. When both are in resonance, with the gain on each fully

up, there will be an increase in the noise level and the fine adjustment of the Preselector made when the desired signal is received.

The coil formers are of standard type, L1 and L3 have $2\frac{1}{2}$ turns, and L2 and L4 $3\frac{1}{2}$ turns and these give a coverage of approx. 30 to 12 Mcs. The use of larger tuning capacitors would, of course, give greater coverage and coils to cover any desired band of frequencies can be wound. The range could also be extended to cover the lower frequencies by additional coils, but there is little to be gained above 100 meters except perhaps, in occasional instances such as when a small or badly screened aerial is used.

Radio Amateurs Examination Course

By D. Warner

Part 6: *The R.F. Power Amplifier*

Wave Form. The need for a good (sinusoidal) wave form cannot be too strongly stressed, as any distortion results in interference on parts of the wave-range other than which the transmitter is tuned.

Any complex or non-sinusoidal wave form can be analysed into a fundamental wave of frequency f , and one or more subsidiary waves, known as "harmonics," of frequencies $2f$, $3f$, $4f$, etc. Each harmonic is of sinusoidal form, and its amplitude depends upon the form of the original wave.

It will now be clear that a sharply-tuned anode circuit in a Class "C" R.F. amplifier, by providing an anode load having maximum impedance at its resonant frequency, and relatively low impedance at the harmonic frequency, ensures a practically undistorted output signal wave form. In order to achieve sharp resonance in the tuned circuit, the "Q" of the circuit must, of course, be kept as high as possible.

Instability—its causes. Instability, with its attendant risk of self-maintained oscillation, must be avoided at all costs. There are two kinds of instability—that due to positive feed-back from the anode circuit to the grid circuit, and that known as "parasitic" oscillation, due, in many cases, to the formation of small resonant circuits in the wiring and associated components. For example, it is not uncommon for an

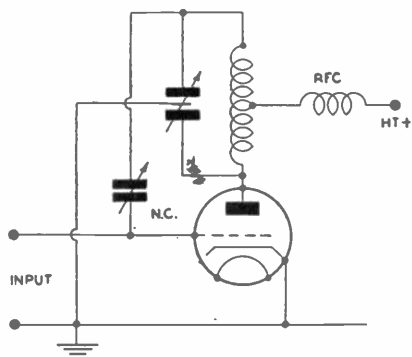
R.F. choke in the grid circuit, by reason of its self-capacitance, to resonate with a choke in the anode circuit, thus producing the same effect as a tuned anode—tuned grid oscillator.

—And the cure. Care in designing the lay-out of components and wiring, and the use of short connections and stopper resistors, are the cure for parasitic oscillation.

Self-maintained oscillation due to anode-to-grid feed-back must be dealt with in a different manner. Such feed-back is not always due to unwanted couplings between the external anode and grid circuits, but may occur across the inter-electrode capacitance of the valve itself.

Pentodes and tetrodes are normally used in R.F. stages because of their low anode-to-grid capacitance. By employing screens between the anode coils and grid coils, and by mounting these coils with their axes at right angles, the risk of external coupling can be avoided. If, however, as frequently happens, it is found impossible to obtain complete stability, some form of neutralising must be employed.

Neutralisation consists in deliberately feeding back from the anode circuit to the grid circuit a voltage which is equal in magnitude to the voltage causing the regeneration, but of opposite phase. The neutralising voltage may conveniently be



obtained by using a split-stator capacitor to tune the anode circuit, as shown in Fig. 1. Because the top and bottom ends of the resonant circuit will be at equal potentials, but of opposite phase, the neutralising voltage can be taken from the upper end, and its magnitude adjusted by means of the neutralising capacitor NC until the circuit is completely stable at the resonant frequency.

Push-pull Stages. A push pull arrangement is frequently used for the output stage of a power amplifier. It possesses many advantages over a single valve stage, the most important being:

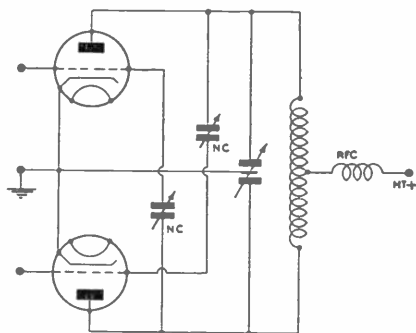
1. Better output wave-form, because the circuit is symmetrical about the earth point and the even harmonics therefore cancel each other out in the output load.

2. The valve capacitances are effectively in series across the tuned circuit, thus minimising their effect and permitting a higher L/C ratio.

3. Neutralising is more effective and more simply applied, all that is required is to connect a neutralising capacitor between the anode of each valve and the grid of the other valve as shown in Fig. 2, as these points are always in anti-phase. These capacitors once set to establish stability, require no further adjustment over a wide range of frequencies—a great advantage when rapid band-changing is required.

It is important that the output stage should work into its optimum anode load which is usually of the order of several thousand ohms. The load presented by the aerial is much lower than this and some form of matching device must be used. This may be achieved by either tapping the aerial along the anode coil or by the use of a small coupling coil.

In the former case the correct impedance



transformation is obtained by adjusting the tapping position and in the latter by the size and position of the coupling coil.

It is most important that losses in the output stage should be reduced to a minimum, as, due to the high circulating currents present in the circuit, the smallest amount of resistance may cause considerable power loss.

NEW S.W.STATION FOR EIRE

From Gerald O. Breasail

(I.S.W.L. Representative)

By the autumn the new "Radio Eirean" short wave transmitter will be on the air. The station, now nearing completion, and costing nearly £100,000, should have been ready by April but difficulties in getting equipment caused serious delays.

The steel pylons, towering 330 ft. above Moydrum, Athlone, will be served at the "business end" by a Marconi 100,000 watt type TBS 1802A transmitter. The project for a new station to replace the inadequate short wave service already in existence was first approved by the Government in late 1945. The new station will adjoin the buildings of the Athlone MW station.

An international service is aimed at and the U.S.A. broadcasts will be the first in operation. Following on programmes to Latin America, the Antipodes, India and South Africa will be put into effect, in that order. It is proposed to radiate a complete 24-hour "round-the-clock" service from the new station, using at first, the 19, 25 and 41 metre bands.

Charles E. Kelly, present Deputy Director of Radio Eirean has been appointed to a similar position on the overseas programmes.

International Short Wave League—Monthly Notes

Pointers for the S.W. Reporter (Amateur Stations)

THE following notes have been compiled for the benefit of members new to reception reporting, though we suggest that even those long initiated into the reporting hobby should carefully read them. There are almost certain to be one or two points of value even to the "old timer." These notes have been compiled by the writer, with ten years of SWL'ing experience before becoming a licensed amateur, and suggestions received from amateur stations have been incorporated. Here then are some golden rules for reporters.

ALWAYS . . .

. . . Be honest in your reporting. If a station has a T7 note or bad overmodulation, say so. Do not be scared of losing a card by sending a critical report.

. . . Make certain you have the call-sign right. This may sound too elementary, but it is surprising the number of incorrect calls that are given—our QSL Bureau has proved that!! If not sure of the call, enter up as a query for future reference and do not report. Many disappointments have been caused by sending reports to the wrong station.

. . . Make your report a collection of data, and not just a hurried note. Take care with it and include all the useful data you can.

. . . Send your reports to the **weakest** stations you can hear. They are the ones who appreciate reports. The strong stations know exactly how they are getting out, and they are always swamped out with SWL reports.

NEVER . . .

. . . Send a report to a station already in contact with your own country. The station knows he is getting there by virtue of the QSO, so a SWL report is unnecessary.

. . . Send a report for only a "CQ" call. There is no definite check.

. . . Send reports to "locals" unless there is a very special reason. If you want to QSL the East Coast W's lay off 14 and 28 Mcs., and report transmissions on 7 and 3.5 Mcs., where your observations are always welcome. By reporting stations on the more difficult bands you will not fall far short of 100 per cent. replies.

. . . Go in for "mass reporting." Pick out a few interesting stations and keep a check on them over a period. You will learn more about conditions and your reports will be of definite value.

. . . Send a SWL card by itself, unless the back is used for additional data. The information you can squeeze on to the face of a SWL card is not adequate enough to justify a return QSL—except in special cases of really rare DX (e.g., stations outside Europe on 3.5' Mcs., Antipodean signals on 7 Mcs., etc.) Even so, still send as much data as possible.

. . . Send a report on one transmission only, except in the very rare cases when the station cannot be heard again.

GENERAL . . .

Learn the reporting codes thoroughly. (Can you say exactly what T5 sounds like?). Make a practice of using the F Code for telephony transmissions.

Quite a number of foreign stations are still operating under cover. If you send a report to such a station direct, send it in an envelope with no reference or indication to radio. We know of several hams who have had their stations closed down due to thoughtlessness on the part of licensed amateurs and SWL's.

It is usually of little use rushing off reports direct by airmail. Your report will usually get put on one side to be answered with the rest at some future date. Few hams will reply immediately.

Even if an ideal report is sent it does not follow that a QSL is guaranteed. Some hams QSL every report, some only those with return postage or a QSL Bureau address, some will not QSL under any circumstances, and others may QSL for a while then cease, and so on. You have to take pot luck. A good tip is to get your reports out to the newer stations. After they have been on the air for a while reports decrease in value, unless some special tests are being made or a new TX or aerial is being tried out.

A final golden rule: Make full use of the ISWL QSL Bureau. It is cheaper for you, cheaper for the transmitters; it is safer; it is easier for you and the transmitter; and it is quicker for you!

Next month we will publish similar data for the Broadcast Station listeners. This will be followed by other articles on the subject of SWL reporting.

POSITIONS VACANT

We need representatives for the following districts, and invite applications from members: Buckinghamshire, Somerset, Sussex, Suffolk, Lincolnshire, Wiltshire, N.W. London and Norfolk.

Social Activities in Brief

Middlesex Chapter (Uxbridge): Now a fully established club. The recent highlight was a "Junk Sale" in which G3BSW acted as auctioneer. A strange phenomena observed was that everyone seemed to go home with more junk than they brought along for disposal!

Birmingham Chapter: Still making good progress. Though attendance is good, many ISWL members in the city are not taking advantage of the meetings. If any Birmingham members, reading this, have not already joined the Chapter why not make a point of writing for details? QRA in panel.

South London Chapter: A permanent clubroom is almost a certainty now, and we look forward to seeing this group really going places. Once again, any support from members in the district more than welcome.

Darlington Chapter. As the CR says "we dunnit"! In other words, the preliminary get-together has now taken place, with six members in attendance. Until membership grows, meetings will take place at Mr. Harrison's home, where a room has been placed at the disposal of the Chapter. Frequency of future meetings to be decided upon.

Portsmouth. The TR, Reg Masters, has held the first ISWL meeting, and though the numbers were small the enthusiasm made up for the deficiency! Readers and members in the Portsmouth district are cordially invited to contact the TR in order to get the Chapter established.

West London: It has been decided to form a group to cater for members in this part of the city, with the meeting place somewhere in the Ealing/Acton area. West London members who are interested in this project are referred to the meeting panel.

Chelmsford: The first Essex county meeting is to be held on August 16th. All members within easy reach of Chelmsford are requested to advise the CR of their intention or inability to attend. It is essential that this preliminary meeting should be a success, as the future of Essex activities will depend on it.

Confirmation of the date and meeting place will be circulated to all Essex members. Prospective members and members of the Services stationed nearby are cordially invited to attend.

AFFILIATION

We have pleasure in announcing the recent affiliation to the I.S.W.L. of the WALSALL & DISTRICT AMATEUR RADIO SOCIETY. The Society was formed on 10th of June, 1947, and is already a

flourishing group with the following licensed hams in membership: 2ADJ, 2HIQ, 2FPR, 2FBP, 2FXX, 5BR. Twelve unlicensed members are also on the register. Members in the district are invited to contact the Secretary, C. G. Merrison, 61b Raleigh St., Walsall.

NEW I.S.W.L. SERVICE

We are sorry to say that Jim Patmore has been forced to relinquish his post as N.W. London Representative, owing to ill-health. However, Jim has kindly offered to run a section of the Query Service for valve data. So, there we are members. If you have any queries on valve data then just send a letter to the QRA below, not forgetting the S.A.E.

Valve Data Query Service: J. Patmore, 16 Osborn Gardens, Mill Hill, London, N.W.7.

I.S.W.L. MEETINGS.

South London:

W. A. Martin, 21 Brixton Hill, London, S.W.2. Meeting irregularly at present.

West London:

Chapter soon to be formed. Interested members please write to H.Q. Suggestions invited.

Uxbridge:

L. M. Harris, 93 Long Lane, Hillingdon. Meetings held fortnightly. (Fridays) at the Railway Arms, commencing at 7.30 sharp.

Birmingham:

M. B. Taylor, 136 Alvechurch Road, West Heath. Meetings on the first Friday of each month at the Chamber of Commerce, New Street, commencing at 7.30.

Darlington:

M. Harrison, 36 Southend Avenue, Darlington. Chapter just formed. Co-operation from local readers requested.

Malvern:

R. G. Barrell, 4, Bromyard Road, Tenbury Wells. Preliminary arrangements are under way for formation of Chapter.

Portsmouth:

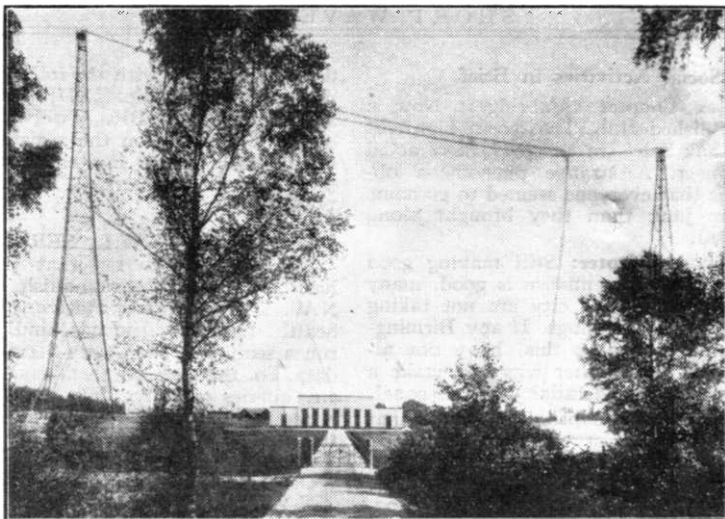
R. Masters, 62 Battenburg Avenue, North End. First meeting held. Support needed.

Chelmsford:

K. Goodley, 34 Blenheim Avenue, Valentines Park, Ilford. County meeting to be held in Chelmsford during August. Members will be notified by circular. Non-members are requested to contact Mr. Goodley.

RADIOLYMPIA

A golden opportunity to meet other members at the "Show" will be possible. We will be organising I.S.W.L. parties to meet inside the exhibition. All interested members, please notify HQ so that we can gain an idea of how many to expect. Fuller details in the next issue.



“Radiojanst”

Station Description No. 12

AT No. 8 Kungsgatan (King's Street), in Stockholm, the “Radiotjänst,” or Swedish Broadcasting Corporation, occupy the two upper floors of the building. Another house, close by, houses the Concert Hall and Musical Academy. Another house, just acquired, is used for the Theatre Section. The disposal of the studios and offices is just another sign of the housing problem, which obtains also in Sweden.

The Government has just granted permission for a new modern building which will make the Swedish Broadcasting a more self-contained unit. The new building, which will be completed by 1950, will contain 15 major studios, three of them concert halls with ample audience accommodation. The cost of the building will be 14 million Kronor.

Swedish radio is semi-state-owned, and the Government has the right to appoint four out of the seven governors of the board. In “Radiotjänst,” which is a joint-stock company, the Press and various radio firms are shareholders. Programmes are in the hands of entirely independent officials, and the political party in power at any time has no influence on the views expressed.

Radiotjänst was formed in 1924 and began its programme service in January, 1925. By 1935 Sweden had become so radiominded that she had the highest number of licences, proportional to population, of

any country in Europe. At present there are almost 2 million licence holders, out of a population of just over 6½ million. The present licence fee is 10 kronor a year, and the entire cost of upkeep is maintained by the licence fees—no commercial advertising being practised.

The corporation “Roster i Radio” (Voices in Radio), is their equivalent to our Radio Times, and sells 120,000 copies weekly. Only one programme is radiated by the 33 radio stations in the country, which is one-third as big again as the British Isles. Half of the 10,000 transmitting hours per year are taken up by musical programmes, light music predominating. Talks and the arts are also in great demand, especially plays and topical events.

A recent innovation is the broadcasting of courses in English and French, and is another indication of the popularity of adult education by radio.

Reporters are often sent to various parts of the world to obtain information and recordings. During the war, especially, many fine recordings were made for posterity from various corners of the war areas.

For outside broadcasts Radiotjänst has five cars, all equipped with recording apparatus and VHF frequency modulated transmitters. These cars are very useful to reporters when in the remoter parts of the country.



Short Wave activities started in 1938, when the first experimental transmissions were made, over the stations at Motala in central Sweden. In 1939 an hourly transmission was made daily on two frequencies, and by 1940 a special Sunday programme for Swedes living abroad was introduced. The following year saw the inclusion of the English language programmes. Experiments have been made with programmes directed to South America, but have now been abandoned as the results were negative.

All the short wave stations are at Motala, and the following are the frequencies used at present:

SBT: 15155 kcs. SBP: 11705 kcs. SDB2: 10780 kcs. SBU: 9535 kcs. SBO: 6065 kcs.

These are the operating times (in G.M.T.)
SBT: 0640-0800; 1100-1400; 1500-2300.

Sundays: 0700-2200.

SBP: 1100-1400. Sundays: 0700-1355.

SDB2: 0100-0200; 1500-2300. Sundays:
0100-0200; 1400-2200.

SBU: 0100-0200. Daily.

SBO: 0640-0800; Not on Sundays.

English programmes are radiated as follows:

Daily: 1500-1600 G.M.T., over SBT and SDB2. Weekdays: 1735 G.M.T., over SBT and SDB2.

Radiotjänst, Kungsgatan 8, Stockholm,

H.A.C.

Short-Wave Equipment

Noted for over 15 years for
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One Valve Kit, Model "C" - Price 20/-
Two " " " " "E" - " 43/-

These kits are complete with all components, accessories, and full instructions. Before ordering send stamped addressed envelope for descriptive catalogue.

Note new sole address :-

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RADIO UPKEEP AND REPAIRS, by A. T. Witts, 7s. 6d., postage 4d.

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RADIO SERVICE TEST GEAR, by W. H.

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WIRELESS SERVICING MANUAL, by W. T.

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— WE HAVE THE FINEST STOCK OF —
BRITISH AND AMERICAN RADIO BOOKS.
WRITE OR CALL FOR COMPLETE LIST.

THE MODERN BOOK COMPANY, (Dept. S.4),
19-21, Praed Street, London, W.2.

Better Operating means

more QSO's By W. OLIVER, G3XT

THE more I hear of the 7 Mcs. band (and I have heard twenty-three years of it!) the more strongly I am convinced that most of the amateurs who use it could double or treble the number of their successful contacts if only they were more business-like in their operating procedure. They would also derive very much more interest and enjoyment from each QSO.

Admittedly there are a few who are always consistently efficient in their operating technique and stick fairly rigidly to a carefully-planned signalling procedure. Service experience during the war has undoubtedly increased the number of operators coming within this praiseworthy category. But there's still a lot of room for improvement!

One can also deduce, by "reading between the lines," that a good many active transmitting amateurs have never really mastered the correct use of their receivers. They undoubtedly miss a big percentage of the replies to their CQ calls through careless or too rapid and haphazard searching.

With hundreds of new stations on the band, many of them allocated with long, awkward calls (to quote an imaginary but typical example, GC2XYZ), it is more important than ever to be quick, business-like and efficient in one's calling and operating technique.

Correct handling of the receiver, and intelligent listening, is half the battle; correct handling of the key, and sensible "procedure," is the other half! Personally, I count myself lucky that I had about fifteen years experience in short-wave reception before I ever touched a transmitting key. The result is that I can get absolutely solid copy from practically every amateur transmitter I contact, and, through long practice, even heavy QRM seldom spoils the copy to any material extent.

Believe me, it's a pleasure to send "R SOLID" nearly every time, instead of having to come back with an apologetic "SRI OM PSE RPT I MISSED MOST OF THAT"!

Most of my transmitting work has been done on the ultra-low power of one watt; occasionally two, but never more than three watts have been used at G3XT up to the present. (We have mains available now, but I am not yet using them for transmitting.) With such low power on the congested 7 Mcs. band, where one has constantly to contend with heavy QRM from stations using up to 150 watts, almost

everything depends on suitable operating technique. Muddled, haphazard procedure would reduce the chance of successful contacts almost to zero.

By using business-like methods and common sense procedure I seldom have to abandon a QSO and have been able to maintain 100 per cent. solid contact both ways for periods of half an hour or more.

I am, however, convinced that the number of contacts I have had (which totals over 300 stations in 16 countries during the periods November 23rd, 1938, to August 24th, 1939, and January 30th, 1947, to date of writing) could have been easily doubled or trebled if only the stations I have tried—and failed—to contact had been operated a little more intelligently!

Before suggesting some practical methods of operating which have been shown by experience to be helpful in getting successful contacts, I should like to mention a silly habit which seems to have been developed by a good many newly-licensed amateurs. The symptoms are easy to recognise, but lead to plenty of confusion. They manifest themselves as follows:—

(This is an imaginary but typical example of what occurs.) A station puts out a long and tedious CQ call lasting several minutes, makes "AR K" and goes over to search the band for replies. A quick check on my own frequency, 7018 kcs., shows it to be in the clear, so I start replying; and as I habitually work "break-in" I am able to take a casual "look" over the band while keying. In the course of this quick search, I hear four other stations replying also, on frequencies of about 7025, 7065, 7080 and 7120 kcs. As these are all above me in frequency, the chances are that, if he searches from the 7000 kcsc. edge of the band upwards, he will intercept my signals before he finds those of my rivals.

Not a bit of it! Before I have had time to send more than a few repetitions of his call-sign, on comes his transmitter again and—what do you think?—he starts another long and tedious call, this time to another station that has been calling CQ on 7015 kcs.—just below me—and has now gone over for replies!

Thanks to the fact that I am monitoring his frequency in the breaks between my own keying, I stop calling him the moment I hear him start again, and waste no more time on him! But what of the other four stations who have been patiently replying to his CQ call? They change over one by

one, and are each disappointed to find him already in QSO with the casual contact on 7015 kcs.! This trick might be excusable if the latter happened to be an old pal, but the ensuing conversation shows the two operators to be complete strangers to one another and this to be their first QSO.

Compare this with the procedure of a really efficient snappy operator. He would have stood a good chance of QSO'ing all four of the replying stations, and doubtless myself as well, seeing that my frequency was in the clear; and we could have made it a six-way QSO, which can be very interesting if the stations participating keep their sending periods brief so as to give all a fair chance. A multi-way QSO such as this helps to reduce QRM, as it means that five out of the six stations would be receiving at any given time, and, therefore, only one out of the six channels would be in use by a transmitter.

I find that break-in working is an almost inestimable boon, especially when using low power. It saves an enormous amount of time and fruitless calling. An especially valuable point for the QRP man is that it enables the operator of any station you contact (no matter whether he himself is able to work break-in at that end or not) to stop your transmission instantly with dots or "AS" or "QRM" as soon as any interference begins to make your signals unreadable, and to restart you with a brief "GA" (Go ahead) when your frequency clears again. This saves needless repetition and makes it seldom necessary to send QSZ at all.

Break-in, used properly by both stations, makes for very quick contact when answering CQ calls. The quickest contact I ever made in this way took just ten seconds from the time the other station signed his CQ call with "BK" to the time that he broke in on my call with dots! He indicated (by "QLH") that he was searching the band from the low frequency edge upwards; I was on 7018, so of course he heard me immediately; after three repetitions of his call-sign, "de," and my own call-sign once, he broke my transmission by just touching his key for a couple of dots, and the QSO was in full swing!

In making CQ calls, I find the best procedure is to sign thus:—"CQ CQ CQ CQ (etc.) de G3XT G3XT G3XT VE CQ de G3XT AR QLH K." If another amateur happens to pick up this call right at the end, he can tell at a glance that it is a CQ call. So this method is obviously preferable to the more usual procedure (quoted below) which leaves the listener guessing as to whether it is a CQ call or not:—"CQ

CQ CQ (etc.) de G3XT G3XT G3XT G3XT G3XT G3XT AR K." How on earth can one deduce from an interception near the end that this long call began with CQ?

In no circumstances should it be necessary to repeat one's own call-sign more than three times, especially if one of these repetitions is made slowly and deliberately with extra good spacing and slightly exaggerated dashes.

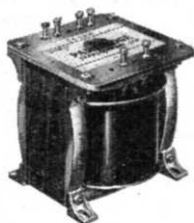
I think one can hardly do better than model one's calling and operating procedure strictly on the official regulations laid down in one's transmitting licence. These rules aren't just red tape, and they were not drawn up just for fun. They are sound common sense, like the official instructions on how to use the telephone (which hardly anybody ever seems to read—it's so much easier to blame the girl on the switchboard for one's wrong numbers!)

When you have completed a successful QSO lasting perhaps half an hour or so, the chances are that several other amateurs have heard you working with the other fellow and would like to contact you when you sign off with him. So immediately after the final "VA," why not make a practice of sending "QRZ? QRZ? QRZ? de" and your call-sign, then searching the band for any possible replies from other operators who overheard your QSO.

Again, when you are having a very long chat with an old pal, it isn't a bad idea to ask him to QRX once every twenty minutes or so, call "QRZ?" and take a brief look round the band to see if there are any other friends about who would like to come in and make it a three-way or 4-way QSO.

There is a rather unorthodox method of making sure of contacts which is practicable if one has any sort of variable frequency oscillator which can be set quickly and accurately on any given frequency. The dodge consists of finding two stations on two different frequencies which are in QSO with one another. When one of them is about to sign off, tune your transmitter on to *his* frequency and call the *other* station, who will in all probability hear you calling just as his partner signs off. The only objection to this expedient seems to be that it is open to abuse in the hands of any thoughtless operator who might make a habit of causing QRM and confusion by landing on another station's frequency in the *middle* of a QSO and frantically calling his "opposite number!"

Used intelligently, however, this idea need cause no trouble and is certainly productive of an extraordinarily high percentage of replies to calls.



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(Short Wave News Photo.)

Welcome, Dot!

AT 6.10 p.m. on the evening of August 1st, a large coloured four-engine plane, bearing the ensign of the American Overseas Airlines, touched down on the runway of London Airport amidst driving rain. Thus had a woman fulfilled a life ambition—Dorothy D. Hall, W2IXY, had arrived in England for the first time.

Representatives of "Short Wave News" had waited patiently for over six hours at the airport to record what must be one of the most interesting ham events for many years. Our sojourn at the airport was made more endurable by the ample facilities for refreshment and the personality of a charming red-headed A.O.A. hostess who kept us well informed on the plane's progress. The vitality of this young lady was certainly inspiring!

Just before we learned that the plane was approaching the airport, the fine weather so far experienced broke, and down came the rain, accentuated by a stiff breeze. It would have taken more than that to damp our enthusiasms, however, and together with two daily newspaper cameramen, we ran onto the apron to meet the plane. There was no trouble at all in distinguishing W2IXY as she cautiously and rather timidly stepped from the plane—her prematurely white hair and the tiny American flag she was carrying left no doubts. After a few words of recognition, and photographs had been taken, Dot was whisked off with her fellow passengers through the usual official procedures. The photograph in the heading is one of those taken by our cameraman, and shows

W2IXY descending from the plane.

Thirty minutes later Dot emerged from the customs offices, and from her very quiet and tired appearance it was apparent that the 14-hour journey had been very wearying. After a brief chat, Dot left with her friends with whom she is staying in this country.

The tour will be mostly around England, from August 1st—11th, and the first port of call will be to the blind amateur G5LK. Other places to be visited are Cambridge, Birmingham, Leicester and Coventry. Bournemouth will be the last call before leaving by air for Copenhagen on August 11th. Dot will be attending a Danish "hamfest" where she will be the guest of honour. From there she will be staying with ON4AD—an old friend with who she will be flying from Brussels to Ghent and thence to Paris and Rotterdam. Then back to England to conclude the grand tour.

On August 27th at 9 p.m., Dot will be televised in the weekly programme "Picture Page," edited by Joan Gilbert. After this the trek home will begin, starting back in the first week of September. As a final visit it is hoped to meet EI3J when the plane makes its first stop in Eire.

Dot intends to take the opportunity to speak home over the ham stations she visits. Her station at Long Island is being operated by W2NVD and W2NTU in her absence.

We take this opportunity of wishing Dot a really enjoyable holiday and trust that she will return home with many happy memories.

On the Ham Bands

Conducted by "CQ"

● Stations of the Month

A station we feel deserves top place in this section is a certain PAO. We heard him on 7 Mcs. 'phone testing, during the course of which he called various SWL's in this country by name. The PAO answered over the air the letters he had received from these SWL's and thanked them for their reports, assuring them that QSL's were on the way. To our mind this is a display of genuine ham spirit that more could follow!

Another interesting one was OZ7EDR. This is the Danish Short Wave Club's Summer Camp station at Funen. There are about 100 Danish and a few Swedish hams at the camp, and apparently a good time was being had by all. The TX runs 50 watts with suppressor grid modulation. The RX is a 9-valve SH and the aerials a long wire and an 8JK beam.

VR6AA is still news. He is in fact ex-ZL2FR as was suggested. Although he only runs 25 watts on 14346 kcs., he puts in S9 signals. The reason? A delta match aerial on 70 ft. poles and 1000 ft. above sea level! The RX, by the way, is a National. He has a sked with WIFH daily at 0430.

Other notable this month have been, briefly... VR1AD in the Gilbert and Ellis group... OY7NL from the Faroes, heard on 7 Mcs... KS4AE creating a disturbance by his outstanding 14 Mcs. CW sigs... HZ4CU another new 'un, in Mecca.

● Top Band Notes

Rumours that the 1.7 band was to be lost to British amateurs have resulted in a falling off in activity. One can only hope that Dame Rumour will prove to be wrong for there are still many who consider this the best band of all.

A good spell on other bands convinces the writer that the best operating is to be found on 1.7. Compared with this band, there is a big absence of break-in operation on the others.

There are probably many who do not use the top band owing to limitations of aerial space. But this should not deter them for it is surprising what can be worked with short, low wires. G3BDV (Walthamstow) has reached Hull and Notts with an indoor aerial.

Several portables have been heard. G2FWA (Croydon) was picked up when in QSO with a car which was proceeding through London to Wickford, Essex. G2YI/P was a nice signal in the Harrow district. G2FFG (Beds.) was also heard

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calling him. It would have been interesting to know where this portable was at the time.

One of the most consistent North of England stations, G2YY (Berwick-on-Tweed) has been received at S6 in London in daylight. Good work, this, OM.

A "Well done" also to the Leicester pair, G8VA, and G3AFZ, on their fine daylight signals in London.

And to wind up these notes, a bouquet to G3BXM (Palmer's Green), another of the indoor aerial boys, who is certainly getting out very well.

● "Ten"

Although the band is still "flat," a few readers have managed to hear some good DX. Personally, I feel we ought to congratulate those who have chosen to search for DX on ten, rather than let the DX pour in on 14 Mcs. One DX station on ten at present is worth dozens on twenty!

Reg. Masters, G407 (Portsmouth), reports the band as mainly dead, but with some DX over the weekends. The best ones were CX3CN, 4CS; EL2A, 5A; HZ1AB, LU3DU (the op. will not reply to any SWL reports), PY7QD, SU1HF, VQ2WP, 4ERR; VU2CQ, XZ2YT, YI2AT, ZC6HB, ZE1JB, ZS1P, T, U, 5Q, 6CD.

D. L. McLean (Yeovil) has some good catches, and also mentions the prevalence of short skip. Says that 0900-1100 is a good time to listen for the South Americans and Africans. His log includes: CE3AB, CX1DB, 4CS; LE2A, KP4CD, 4ES; LU3DH, 4EC; OQ5AR, 5BA; PY2CK, HV, QK, 7DD, QG; VP4TK, 6JC; VQ3EDD, VS9AB, ZC6JF, ZD2KC (0950), ZE1JM, ZS1BV, P, T, 5BY, Q, 6DW. All heard between 0900-1600.

J. N. Trye, G570 (Nuneaton) has EL5A; CR9AG, VQ4ERR, XZ2YT, YI2AT and ZS4H.

A. E. Lincoln, G289 (Grimsby) adds CX4CS, LU3AD, 4EB; PY2ACY, GD, QK, 7DD.

Bert Teeter, W790 (Rumson, New Jersey) reports some stations that are heard consistently. They include G6WT, G6BY, G8GW, GM3ZH, GM8MN, J2ACS, FOX, 9AAO, AAW, AGT, ANT, KC, LG; K6FD, KA1AT, ADA, CB; KH6GH, FD; KL7AN, FQ, GO; LU2DM, 4DC; VP6YB, VR2AB, XU6GRL, XSIT, 5U, 6FH, FU, GV.

● 3.5 Mcs.

Reg. Masters, G407, reports hearing VE1ET and 17 W's including 4HKA, HWD,

Samuel D. Canter, W6TSQ, of San Francisco has this nice photo of his shack on the front of his QSL card. The station looks as it is, neat and efficient.



JRV, KGC and LBT.

John Clarke, G10 (Brentford) still plugs along searching for the rare ones. This month he reports FA8bg, TA1un, YRX3, ZL2qm, and possibly ZL4ga.

● I.T.B.A.

Yes, It's That Band Again! Once again, it must be stressed that preference will be given to actual news items rather than long lists of calls, which serve no useful purpose.

Al Slater (Southwick) mentions his best ones. YS1JR was logged at 0530 using only 15 watts, PK6XX was heard on 14325 kcs. at 1620, but QRA could not be copied owing to rough quality. CR5EA heard at 0430 on 14145 caused some excitement. VR6AA popped up working WiFH at 0520 at R9 "and has been that way ever since!" Another one was ZA1A claiming to be in Tirana, R9 at 1800, and saying "cannot give QRA as amateur radio not official." VK9NK has been heard, and he is ex-VK4NK (Port Moresby). Other rarities have been KG6AV/VK9 R7/8 at 1500 on 14220 kcs.; EQ2L, 14250 kcs. at 2145; ZC1RJ, 14255 kcs. at 2200 (claimed to be 30 miles from the Dead Sea); VP5PU on South Caicos Island R9 plus at 2345 on 14380 kcs.; W6WCN/KG6 on Saipan heard at 1840 on 14275 kcs. Al mentions that anyone wanting Utah for V.A.S. should keep an ear open for W7JOE and 7JVU between 0500-0600.

On the QSL side, W3JRF/KG6 sent a very fb card by airmail. SU1HF QSL'd within a month, J9ANA sent along a 1-yen note and HA4AB surprisingly obliged.

Besides these catches, we have a long list of DX calls which include C1CH, 4CK, 7TS, J2CAL, 2YSD, 3WGT, 9ABX, ANL;

VP5RS, VS1AN, 2BG, BU; XZ2AA, ZL2BE, 2BI, 2GX, 4FO and ZE1JX. Very fine indeed OM.

A. H. Onslow (Hove) says he is "omitting most of the junk to save space." You're a pal! The log includes AR8AB, C4CK, CPIAX, CP5EA, HI8MV, JaCAL, YSD, 3WGT, 9ABX, CRP; KG6AD, KL7KR, NY4ZQ, TG9MG, 9RV; VP2GF, LA, 5PU, RS; VS9GT, VU7AB, YS1JR, 1MK, 3PL; ZC1AL, 1RJ, 6AV.

The KA5KUG queried last time was OK, says A. H. O. He is ex-W5KUG/KA, who now has his official KA call. The best QSL of the month was from HI2L, who sent by airmail with 10 pictorial stamps on the cover! Another recent QSL, from W1FOF on 3.5 Mcs., was printed specially for A. H. O. and had a picture of a town crier holding a scroll upon which his name and particulars of reception was printed. In the accompanying letter, the operator, a YL by the way, says that G reports for 3.5 Mcs. are greatly appreciated. So how about it OM's—come off 14 Mcs. for a while and try for some real DX!

Finally, we hear that morse practice is under way so will be expecting some CW logs soon from Hove.

C. M. Leach, G89 (Cirencester) sends in his first contribution. Welcome, OM. The RX is an R1155 with a 14 Mcs. doublet aerial. Best calls are OA4AC, PY7AD, TI2OA, VK2AKF, AGJ, AGU, VR6AA, VQ4JBC, ZCiAL. Your log laid out quite OK, OM.

A. L. Crane, G4QZ (ISWL/G245) is a QRP fan, both on the receiving and transmitting sides. He submits a log as received on his one-valve receiver, which we are

quoting in full. For a "wun toob" log it certainly gives the multi-valve people a good run: CO2JV, 8MP; EK1AS, EL5B (not "V" OM), HK1DZ, NY4AB, OX7B, OA4AI, AT; PY4BI, TI2OA, VR6AA, XE1CQ, UE; ZB1AE, YI6C, YS3PL. On CW EP2bu, J4aak, MB9ah, TF3ea, VK3ajb, yl, ek, 5bc, fm; all W districts, XZ5dx (?), ZC6da, ZL1by, 3ab, 4ae.

Ray Small G1073 (Wembley) makes his entry to this feature. Ray and his brother Don (G3ALI) have been in the DX game for many years and many readers will remember these two diehards from their pre-war activities. The country list is 165 heard with 83 verified. The two logs sent in (one for 'phone and one for CW) contain some really first rate calls and we will do our best to pick out the real gems... Clan, jc, 3yw, 7tk; ET1ir, F8er/FC (Corsica) FQ3at, HS1ln, KG6cv, es, ij, KL7ad, dm, jf, ke; KP6aa, OY3igo, PK1hx, md, ri, 2dl, ml, rk, 3ck, 6ha, ng, sa, ws; VR2ao, 6aa; VU7br, W2wmv/C9, 6vto/C1, 6yaw/AK (Korea), 6zqz/J5, 8uay/J5; ZD2k, 2kc, 4al; ZK1ab. Also many rare Russian calls, 12 VS's, 7 VU's and dozens of VK, ZL, etc. The best of the 'phone batch were CiCH, Jc; CR5AB (0650), KG6AV/VK9, VK9NK, VS1AN, BA, 2BG, BU, BV; VU2BQ, DG, LR; XZ2AA, ZC1AL, AR, RJ; ZE2JA, JD. (Please let us have more data on QRA's, times notes, etc., Ray. Tnx).

Roger Legge (Binghampton, New York) mentions his best of the month as W6RWQ/VR6, W3EKK/VK9 (14280 kcs.), KG6AV/VK9 14300 kcs., VK9NK 14310 kcs.

Bert Teeter, also from the U.S.A. gives his selection of consistent DX, which includes EL4A, CE3AB, CX2AC, FG3FP, KP6AA, LA7R, ON4UK, OZ7HL, PAoFB, PK1AW, PY1FN, LX1JW, OX3MC, 3GC, 2K; TI4AC, VK2DK, 3XJ, 4CS, 6KW, XAGD. Bert's idea of listing consistent DX has inspired us to thinking up a new feature—details of which are given elsewhere.

Martin Harrison, our old faithful from Darlington, sends along some nice data, which is taken care of in various parts of this feature. His best catches of the month are CO2JV, SE; EL5B, ZS6LF, HK3BJ, KP4CL, YS3PL, VU2DG, KZ5NB, XE1BC and XE3D. Martin mentioned hearing a ham saying he was reluctant to use the HF end of the 7 Mcs. band as he may interfere with the B.B.C. stations. He also stated that it would be a good move for some publication to give the current operating frequencies in order to be able to chose operating times for the H.F. end. So we got in touch with the B.B.C., who kindly sent along the current schedules. So you lads who are on "forty" can now work out when to operate on the high end of the band!

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| | |
|---------------|---------------|
| 7250 kcs. GWN | 7210 kcs. GWU |
| 0300-0315 | 0600-0845 |
| 0400-0500 | 1130-1330 |
| 0600-0615 | 1545-2200 |
| 0900-1000 | 2300-2315 |
| 1030-1130 | 7230 kcs. GSW |
| 1230-1245 | 0645-0815 |
| 1400-2115 | 0900-0930 |
| 7260 kcs. GSU | 1015-1130 |
| 0415-0630 | 1215-1330 |
| 1500-2145 | 1545-1630 |
| | 1730-2130 |

Peter Sommsich, HA8S, (Budapest) is filling in time until licences are re-issued by doing some band-searching. The best ones of the month are CT4dd (where is he OM?), C1dk, HZ1as, J4aak, KA1nvs, KG6ai, OQ5if, VP4kx, 9ed (is this 9d?), VS1at, 1by, 7nx; VU2ck, 7br; ZD1kv, 4ab, 4ga. On 'phone J9AAE, VU2AC, 2PK; VS9AP, ZE1JV and ZP8CN.

Reg Masters says he has tried 3.5 Mcs. for DX but found that the late listening made it difficult to get up the next morning! Wait till the winter, OM, as the DX comes in very much earlier. Reg has also given up 7 Mcs. as a DX band. Well, you know the answer—learn CW and then you will have no difficulty whatsoever in getting the DX on these bands. Reg mentions that an expedition by the Hallicrafters company is to be carried out in the "Mountains of the Moon" in Central Africa and will be working on the ham bands. In his long log we see KH6CT, 6HO, 6MD; KZ5NB, OQ5BR, ST2KA, TG9jj, 9JK; UA3AX, VK7NC, VP4TE, VR6AA, VS1AN, 2BV; VU2BQ, ZC1RJ, ZL2BG, ZS1CN and many VK, VE7, XE, etc.

D. L. McLean sends along a massive list of DX, all heard between 0500-0730, of which these are the pick: TG9MP, RV; VP4TE, TT, TU, TZ, 6ZI, 9T; VU2BQ, YN1FF, iHB; YS3PL, ZC1AL, ZI2BE, 2FF, 2GX, 2JD, 3BV, 4FO. Also 33 VK's, including 5FL, 6MW, 7NC, 7TR; many rare W states; and dozens of Latins.

Many thanks also to the following for logs received: A. Baldwin, G193; A. E. Lincoln, G289; J. H. Endersby, GW703; J. H. Moody (Poole); R. W. Ainge, G219; P. Castle (Hitchin); L. Waine, (Yeovil); W. S. Savage (London); K. L. Bromyard (Brentford) and A. Goodfellow (E. Suffolk).

● Gossip and DX Worked

G6GH, Geoff. Hutson (Boston) continues his good DX work and latest snips are ZS3f (at 1800 on 14090 kcs.), CR6ai (1900, 14080), F8ex/FC (Corsica, 1840 on 14130 kcs.), TF3mb (14140), FQ3at (14100), VS6ac (1800, 14080 kcs.), KH6ij (14040), UL7bs (14130) and EA4em.

G5RF, (Holland-on-Sea, Essex), who is normally a "strictly 10-metre station" made a recent raid on 14 Mcs. in order to get his 100 countries. Within five days the following new countries were worked: VS9gt (Though the station is in Trucial Oman, the RAF station is administered by RAF, Iraq), UO5ad (Cishiniev, Moldavia), HP5q (Panama), OY5gs (Arsuk, Greenland. Call definitely OY and not OX. Has a ploppy note), UD6bm (Baku) and UJ8ad (Stalinabad). After this bout of DX-ing, G5RF is now back on ten for recuperation!

G3ATH/XZ, S/Ldr. H. Pain is having trouble in getting his official XZ call. The licence fee is a general one of 15/- and the conditions of power are much the same as over here. He has a 24 watt rig on 14072/14082 kcs. with a 6V6/807 line-up and a $\frac{1}{2}$ -wave doublet running NW-SE. Listeners reports are invited and the QRA is in the usual panel. No IRC need be enclosed with reports, by the way.

Our Correspondent in Hong Kong, R. W. A. McKichan, says there are now six licensed VS6's, but no sign of his own ticket yet. Hope to hear you on soon, OM.

YI2AT, otherwise LAC Albert Tungate, famous for his flea-powered station, is coming back to G soon. Though he only used 12 watts he was one of the best DX stations to be heard on 28 Mcs. Again it was the question of the radiator—Albert's aerial was suspended between two 90 ft. wooden lattice towers and consisted of 1250 feet of wire!!! Now Albert has been turned out of his shack and is reduced to listening only. Tough luck OM. Jack Leppard is also in Habbaniya, and a pal of 2AT. He says that YI2CA has now returned to G and that YI2JJ has also been ejected from his shack rather hastily by someone who doesn't like hams! However, 2JJ is now rebuilding and hopes to go on again soon. That's the spirit.

HA8S, Peter Somssich says that HA4EA has been jailed for operating his ham station. As Peter said, he asked for it by using 250 watts of 'phone in the middle of the city! The members of the Hungarian S.W. Society are all set for great activity once the peace treaty has been ratified.

G2LC Cyril Greenaway (Ruislip) is still knocking them off on 14 Mcs. CW, the latest being KP4do, CX4cz, OX3ge, UA0kqa, VP9k, ZC6sx (Haifa), SU2dg, CE2bc, CE4ad, CR6ai, UN1ao (Petrozavodsk), HP4q, VP4ta and PK2rk. Cyril has now received another card from CR4BQ who now says QSL via the Portuguese society. As the Portuguese hams have only recently been licensed, this would explain the whole thing.

● **Topical DX QRA's**

- C4CK**: Box 163, Kunming, China.
- EK1AS**: c/o R.C.A., Tangier Zone.
- EL5A**: Radio EL5A, Monrovia, Liberia.
- FQ3AT**: Base Aeriennne, Fort Lamy, Tchad, French Equatorial Africa.
- HH2ME**: Box 153 Port-au-Prince, Haiti.
- HH5E**: Pan American Airways, Port-au-Prince, Haiti.
- HZ4CU**: Box 73, Mecca, Arabia.
- JZCAL**: APO 500, c/o P.M., San Francisco.
- KA1AK**: HQ, 13th Air Force, APO 719, c/o P.M., San Francisco.
- KG6AV/VK9**: APO 246, Unit 2, c/o P.M. San Francisco.
- KZ5NB**: Submarine Base, U.S. Navy, Bilboa, Canal Zone.
- NY4FB**: Box 350, Naval Air Station, Navy 115, c/o F.P.O., New York.
- OX3GG**: Service Club, APO 858, P.M., New York.
- OY5GS**: George Sinclair, Postal Office, Arsuk, Box 55, Greenland.
- PK6AX**: Bert Krygsmen, Cantinelaan 10, Macassar, Celebes.
- PK2RK**: c/o P.T.T., Solo, Central Java.
- SHF1X**: Technical University, Gothenburg, Sweden.
- TF3MB**: Box 1080, Reykjavik, Iceland.
- TC9JK**: Box 118, Guatemala City, Guatemala.
- VP5PU**: APO 845, Miami, Florida.
- VP6JC**: c/o Telephone Company, Barbados.
- VQ5JTW**: Government Radio Station, Entebbe, Uganda.
- VS2BV**: Army Signals Corps, Kaiping, Northern Malaya.
- VU2CF**: 72nd Br. Gren. Signals Squadron, Hospital Town, West Begalore.
- VU2CJ**: Amateur Station VU2CJ, Northern Command Sigs., Rawalpindi.
- YS1JR**: J. Rodriguez, Cojutupeque, Salvador.
- ZK1AB**: G. H. Hitch, Raratonga, Cook Islands.
- Z33F**: Box 297, Windhoek, S.W. Africa.
- ZB1AE**: 501 Ames, R.A.F., Malta, G.C.
- ZC6AV**: c/o Box 360, Cairo.

● **Query Corner.**

Quite a few queries have been received about SHF1X, so here goes. The station is on the Swedish ship "Albatross" on an expedition around the world. QRA for reports is in the usual section and we hear, via J. H. Endersy, that reports will be answered on return to Sweden.

Martin Harrison queries AR8AB, DF3AA and CR5AB. Can anyone supply any definite data on this trio? Martin says that GXEK is an admitted pirate operating in Schleswig, Germany.

Writing on the subject of "Turkish delights," D. L. McLean mentions that Y13R, who was heard so well some time back, was in fact operating under cover at Adana, Turkey. D.L.M. has a QSL from this station and if anyone who heard this station wants a Turkish QSL then the QRA will willingly be supplied. D.L.M.'s QRA is 9 Cedar Grove, Yeovil.

Still on the subject of TA's, A. H. Onslow tells an interesting story. He was listening to TA1T last September and heard this station give his QRA as c/o Radio Station THA, Istanbul. "Being a rash boy," A.H.O. sent along a report. Nothing was heard until Xmas day, when a very impressive envelope arrived from the Turkish

● Readers' Reports Wanted

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

- G2ABK: 3.5, 7 and 14 Mcs. Any distance: 3 Council House, Hundleby, Spilsby, Lincs.
- G2AJ: 58.64 Mcs. Over 50 miles: 22 Beaufort Gardens, Hendon, London, N.W.
- G2DHF: 14, 7 and 3.5 Mcs. CW. Any distance: 63 Lewisham Hill, Lewisham, S.E.13.
- G2DRT: 1863.5 kcs. CW and 'phone: 10 South Parade, Spalding, Lincs.
- G2FAY: 7, 14 and particularly 1.8 Mcs.: 62 Chestnut Street, Chadderton, Oldham, Lancs.
- G2HFP: 194 Downham Street, Blackburn, Lancs.
- G2UK/G2ATV/G3AKA: 28, 14, 7 and 3.5 Mcs.: c/o "S.W.N."
- G3AJP: 3.5 Mcs. CW: J. D. Baker, 3 New Villas, Fritten, near Great Yarmouth, Norfolk.
- G3ATH/XZ: 14072, 14082 kcs: 53537 S/Ldr. H. Pain, Officer's Mess, R.A.F., Mingaladon, Burma.
- G3AYA: 7 and 3.5 Mcs. CW: 64 Cavendish Road, Kilburn, London, N.W.6.
- G3AZF: 181 Oakfield Road, Liverpool.
- G3BEC: B. S. Clark, c/o 77 Southville, Yeovil, Som.
- G3BGR: 7035.6 kcs. CW: "Hill Rise," Danemore, Welland, near Malvern, Worcs.
- G3BQG: 14034 kcs. CW: 20 Ingestre Road, Hall Green, Birmingham.
- G3BVT: 1935, 7050 and 7150 kcs. CW: 18 Hilton Street, Darwen, Lancs.
- G3HT: 59.68 Mcs. Over 25 miles: 4 Gainsborough Gardens, Edgware, Mddx.
- G4KD: 58,888 Mcs. Over 50 miles: 35 Gibbs Green, Edgware, Mddx.
- G5BS: 1823.5, 1755, 3510, 7050 and 7150 kcs. CW and 'phone: F/Lt. C. S. Bradley, The Old Vicarage, East Farleigh, Maidstone, Kent.
- G5KT: 7 Mcs. CW: c/o "S.W.N."
- G6MN: 59610 kcs.: "Castlemount," Worksp, Notts.
- GMBCL: 7150 kcs. CW: 87 Braemar Place, Aberdeen.
- VE1QL/VE1VB: 3511 and 3713 kcs.: R. J. Morrison, Coldbrook, N.B., Canada.
- VP9D: 14 and 28 Mcs. CW: J. A. Mann, R.N., W/T Station, Daniels Head, Somerset, Bermuda.
- VQ4RAW: 3.5, 7 and 14 Mcs. CW: S/Sgt. Whiting, R.A., 404 (EA) Command, Light W/S, EAEME, P.O. Box 1013, Nanzuki, Kenya.
- VU2XL: HQ Madras Signals Regt., Madras 9, India.
- WS5BM: 28 Mcs.: 7831 Nelson Street, New Orleans, La.

Radio Service. Inside was an Xmas card! No QSL, no writing.

A.H.O. asks about DF3AA, AR8AB and D5AA. (The D5's are supposed to be in the French Zone of Germany, but have no confirmation of this yet).

Now for an apology. Last month your scribe gave the new prefix of Australia as MD9. This should, of course, be MB9. Exit, in deep confusion! The latest prefix change is that of Libya from LI to MD1.

Reg Masters asks about F7RR (7 Mcs.), I2TM (28 Mcs.) and LF2K (14 Mcs.). The LF is genuine in Norway, O.M. Regarding Martin Harrison's query on SFNR, Reg says this was the call sign of the ship that EK1AN was going back to the States in. 'Nuff said!

J. H. Endersby asks about HB1fs (14115 kcs., 1500), YT7gb (14145 kcs., 1513), ZA1a and ZA7y (14 Mcs.). As far as we know all definitely questionable!

● Ham Spirit

It has been reported that VO2AF said over the air that all SWL reports he receives are immediately torn up and the IRC's, etc., go the same way. We would be pleased to hear from readers of other stations who definitely will not QSL, so that we can warn reporters in good time. To qualify for the "black list" the offending station MUST be DX, must have had return postage enclosed with the report, must have had reasonable time to answer and the report must have been of a comprehensive nature—at least equal to a full seven-entry report on our Reporting Pads.

● Consistency Poll

Popularity Polls and Public Opinion Polls seem to be much in favour these days, and so we are going to have a Poll of our own. Briefly we want to know the most consistent DX stations on the bands. We invite readers to submit their lists of "best received" stations and we will draw up the averages. The leading station for each country will be notified by us personally, and we feel that a valuable service to amateurs will thus be instituted.

We have selected Africa as the first target area. What we want is a list of the best CW and best 'phone transmissions heard from any country within the Continental boundaries. Naturally, the greater the support to this Poll, the greater will be the accuracy of the final verdicts. So we look to all of you to play your part in our researches, O.M.'s. The dead-line for lists is September 15th. Other continents will be catered for in following months. Here then is the summary:—

- (1) List the best CW station from each African country.
- (2) List of best 'phone station from each African country.
- (3) Deciding factors to be consistency of signal strength and quality.
- (4) Survey to be for signals on 14 and 28 Mcs.
- (5) Closing date for entries: September 15th.

Regarding (1) and (2), either or both may apply. If any difficulty arises of discriminating between two or more stations, list them both, or all. All lists to be addressed to "C.Q." c/o S.W.N. That's all, so go to it, O.M.'s!

S.W.N. AMATEUR MONITORING SCHEME

AS was to have been expected, one or two minor snags have been encountered with the scheme as outlined last month, on page 192. It has been pointed out that the operation of station G3CCA (see section 3) in the way indicated

would be very near to violation of the terms of the amateur transmitting licence, i.e., third party messages. However, this snag has been effectively overcome in the following way:

The Telecommunications Laboratory have installed all the necessary equipment at G3CCA, as follows:

- (i) Frequency sub-standard.
- (ii) Recording signal/noise meter and amplifiers.
- (iii) Steel-wire recorders.
- (iv) Panoramic Receiver.
- (v) Automatic sending equipment.

Apart from the above, all published arrangements will hold good. The monitored transmissions will be recorded on the steel-wire recorders and s/n recorders. These will be given a reference number and handed to the Laboratory for analyzing. The Laboratory will then issue the reports.

Please note the following very important points:—

G3CCA will NOT issue QSL cards for monitoring session contacts.

Only stations "on sked" for monitoring will be worked during monitoring periods.

G3CCA will only issue reports during these periods and stations are requested to keep the QSO's as brief as possible, so as not to hold up others waiting their turn.

No recordings will be made or issued at any times apart from the predetermined sessions, except in the case of Random Monitoring.

Random Monitoring

It has been decided that the Foreign Offices of the Laboratory in India, South Africa, Canada, New Zealand and U.S.A., will listen frequently for British amateur transmissions and make recordings. These will be sent to this country by air mail. Amateurs for whom we hold reports will be advised by us.

In addition to the above valuable service, there will be occasional random monitoring by the Laboratory at Leicester. These sessions will be mainly concerned with monitoring stations having poor quality or bad notes. We hope that this will do much to clean up the bands—they certainly need it!

Monitoring Sessions

Session 1: August 14th-August 15th.

Session 2: September 20th-September 21st

It must again be emphasised that only stations with a definite schedule will be monitored. For a laboratory report on your transmissions, write now to avoid disappointment. Skeds will be fixed in strict rotation.

DX PREDICTION FOR MID-AUGUST TO MID-SEPTEMBER

(7 and 14 Mcs. through courtesy of Geoff. Hutson, G6GH. 38 Mcs. with acknowledgement to Denis Heightman, G6DH).

7 Mcs. Conditions

0500—W1.
0600-0700—ZL.
2000-2100—VK, ZS.
2300-2400—W1.

14 Mcs. Conditions

0500—W6, W7, VE7.
0600—W6, W7, VE7, VK.
0700—VK.
1400—J, VK, KA, C.
1500—VK, VS1, VS6, C.
1600—VK, W6, W7, C.
1700—VK, PK, VU, VS1. Africans.
1800—KA, KG. Africans.
1900—Africans.
2000—PY, VP2, VP4.
2100—PY, VP2, VP4.
2200-2400—PY, LU, CE, OA.

28 Mcs. Conditions

Similar conditions to July but with DX improving somewhat, particularly towards the end of the month. Contact with Africa should be possible most of the day (peaking in the early evening) and with S. America from about 12 until 21 hrs., or later, with a peak rather late in the evening.

Conditions for other countries on or south of a Great Circle east (i.e. VU, VK6, etc.) and west (Central America, etc.) will be reasonably good though rather more "patchy." Best times are difficult to forecast but easterly signals generally peak in the early mornings and again in the afternoons while to the west the peaks occur correspondingly later.

On "peak" days, the band should be watched for VK and ZL signals coming in via the long path, WSW over S. America late at night from 21-24 hrs. Conditions to north of east and west will remain poor with possible occasional appearance of Russia and N. American signals, the latter chiefly in the late evening. There will be continued Sporadic E conditions for Europe at various unpredictable times of the day probably rather less frequently than in June and July.

PREMIER RADIO

MORRIS AND CO. (RADIO), LTD.

ALUMINIUM CHASSIS.—Substantially made of bright aluminium, with four sides, 10in. x 8in. x 2½in., 7/-; 12in. x 9in. x 2½in., 7/9; 16in. x 8in. x 2½in., 8/6; 20in. x 8in. x 2½in., 10/6; 22in. x 10in. x 2½in., 13/6.

SUPERSENSITIVE DOUBLE HEADPHONES.—Balanced armature with reed driven aluminium diaphragm. 60 ohms, 8/6.

ELECTROLYTIC CONDENSERS.—Miniature metal can type, 8 mfd. 500 v.w., 3/-; 16 mfd. 500 v.w., 4/-; 8x8 mfd. 500 v.w., 6/6; 22in. 12 v., 1/9.

2-VALVE, SHORT WAVE BATTERY KIT.—A complete Kit of Parts for a 2-valve receiver, covering 15-600 metres, including valves, coils, drilled chassis, H.T. and L.T. dry batteries, to last approximately 6 to 12 months. A pair of Double Headphones and full instructions. Price £3/10/-. An Extra Coil can be supplied, covering 600-1900 metres at 4/-.

ROTARY TRANSFORMERS.—Input 12 v., output 180 v. 30 mA., 4 v. 2-3 A. with 19 volts input, output is 50 per cent. higher. May be used on D.C. mains as L.T. Charger. With small conversion could operate as D.C. Motor. Original cost over £5. Employ powerful ring magnet. Price 10/- each.

OUTPUT TRANSFORMERS.—A super production. By means of ingenious series-parallel arrangement, all windings are used at all times. Match any tube, single or push-pull to any voice coil 2-30 ohms, 7 watts, 22/6; 15 watts, 30/-; 30 watts, 49/6; 60 watts, 59/6.

BATTERY CHARGER KITS.—All incorporate metal rectifiers, Input 200-250 v. A.C. 40/100 cycles.

| | |
|---|-------|
| To charge 2 v. accumulator at ½ amp. | Price |
| " 6 v. " 1 amp. | 15/- |
| " 12 v. " 1 amp. | 17/6 |
| " 6 or 12 v. " 4 amp. | 22/6 |

Complete with Variable resistance and meter £3/15/-
To charge 6 or 12 v. Accumulator at 6 amps.
ditto £5

H.T. ELIMINATOR AND TRICKLE CHARGER KIT.—Consists of a complete kit of parts to construct an H.T. Eliminator with an output of 120 v. at 20 mA. and provision for trickle charging a 2 v. accumulator. Two metal rectifiers are employed. With circuit, price 30/-.

RADIOGRAM CABINETS.—Dignified appearance and good workmanship. Size 34½in. high, 19 in. deep, 36in. wide. Send for illustration. Cabinet only, £26. With Electric Motor and Pick-up, £32/16/-.

ROTARY TRANSFORMERS.—Size only 7in. by 4½in. diameter. With 6 v. input; output 200 v. 50 mA. With 12 v. input; output 400 v. 80 mA. Price 20/-

ROTARY TRANSFORMERS.—With 12 v. input; output 600 v. 250 mA. With 6 v. input; output 280 v. 250 mA., Price £3.

OUR 1947 LIST IS NOW AVAILABLE. All enquiries must be accompanied by a 2½d. stamp.

ALL POST ORDERS TO: Jubilee Works, 167, Lower Clapton Road, London, E.S. (Amherst 4723.)
CALLERS TO: 169, Fleet Street, E.C.4. (Central 2833.)



FOR FREQUENCY SUB-STANDARDS
TYPE JCF/200, 100 KC/S
Available from stock adjusted to ±0.01%
Higher accuracies supplied to special order
PRICES ON APPLICATION

V WIRE MOUNTING
BRITISH PATENT NO 576230

The type JCF/200 unit illustrated above is representative of the wide range of vacuum type units available for low and medium frequencies.

G.E.C.

QUARTZ CRYSTAL UNITS

FOR STABLE FREQUENCY GENERATION

FEATURES

Low temperature coefficient—less than 2 in 10⁶ per °C.
Patented nodal suspension. Mounted in vacuum; performance independent of climatic conditions. Exceptionally high Q value. High stability. Small size, 3" x 5/8" overall excluding pins. Fits standard miniature deaifad valve socket.

These will be on show at our Stand No. 75 Radiolympia

SALFORD ELECTRICAL INSTRUMENTS LTD.
PEEL WORKS SALFORD 3
Phone: BLA. 6688 (6 lines) Grams & Cables "Sparkless, Manchester"

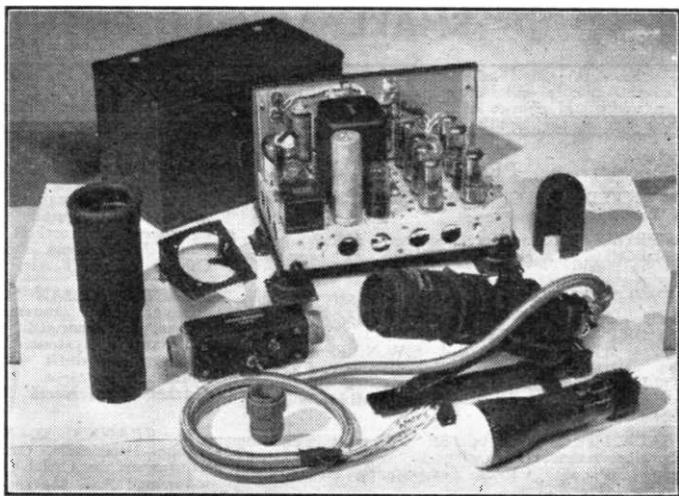
Proprietors, THE GENERAL ELECTRIC CO. LTD. England.

Component Review

◎

**CLYDESDALE
SUPPLY Co.**

◎



THE illustration at the heading of the page shows the series of units forming the AN/APA-1 Repeater Indicator equipment which is being offered by *Clydesdale Supply Co. Ltd.*, at the price of £4-19-6, plus carriage, 12/6.

This ex-U.S.A. remote indicator contains a lot of useful gear for the constructor. The amplifier and tube power supply, shown at the rear of the photograph, contains seven 6SN7GT tubes, one 6H6, one 6G6G, one 2X2/879 HV rectifier, and one 6X5GT. The mains transformer, unfortunately, is of no use except for rewinding, as it is designed to operate on 115 volts at 400 to 2400 cps. The chassis contains a host of small resistors and capacitors, six potentiometers, two relays, low-loss valve-

holders and stand-offs, two panel-mounting fuseholders, on-off switch, etc.

A 3BPI cathode ray tube is included, with several alternative mountings, one of which has a nice rubber eyepiece. Included with the tube is an 11-way screened connecting cable. The tube control unit contains a further supply of resistors, a three-position switch, three potentiometers, four ebonite stand-offs, and a couple of useful knobs. The amplifier case, to end this short description, has distinct possibilities as a screening case for a small amplifier or modulator. These units, by the way, are brand new, boxed. Readers are invited to contact *Messrs. Clydesdale Supply Co.*, at the address in their advertisement on the back cover for details of the other gear which they are offering at attractive prices.

Book Reviews

THE TRANSMITTING LICENCE. An R.S.G.B. Publication. Price 9d., from the R.S.G.B., New Ruskin House, Little Russell St., London, W.C.1. Within 32 pages will be found the answers to the questions which crop up when the radio enthusiast asks, "How do I go about getting a Transmitting Licence?" Full details are given of the conditions of the licence, the various exemptions granted, the course of study required, exam. papers, etc. The first of a series of booklets on Amateur Radio to be published by the R.S.G.B., this one gathers together very effectively all the information regarding transmitting licences required by the prospective radio amateur. All those who are thinking of going in for their ticket, must have a copy of this booklet.

SERVICE VALVE EQUIVALENTS. An R.S.G.B. Publication. Price 9d. Obtainable as above. A 32 page booklet containing lists of commercial equivalents to Service valve codes. The lists are arranged under the headings: Navy Valves, Army Valves, "C.V." Grouping, U.S. Signal Corp Valves, and Continental Valves. A most useful publication in view of the surplus service gear now appearing on the market.

TO ERR IS HUMAN DEPT.

Referring, of course, to the incorrect page numbers given under the heading of "Don't Miss These Items" below the Editorial last month!

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.

PRIVATE

WANTED: H.R.O. coil .965 to 1.7 Mcs. Offers to Box 1022.

EVRIZONE Superhet receiver, 10/160, power pack, £20. G. V. Haylock, G2DHF, 63 Lewisham Hill, S.E.13.

TWO-VALVE amplifier kit, with circuit: 35/- Lewis, 19 Cambria Avenue, Ellesmere, Salop.

SHORT WAVE NEWS from No. 1 to completion of Vol. 2, subscription paid, S.W.N. Report Pad, The Miracle of Radio, F.M. Broadcasting, S.W.L. Annual, Electronic Telesis: G. A. Evans, 87 Southwell Road, Linthorpe, Middlesborough, Yorks.

SALE. Tritet CO pp 807 100 watt TX—£10; 1.7 Mcs. transceiver with 12 volt rotary converter—£10; also valves, components, etc. S.A.E. for list. Box 1021.

TRADE

QSL CARDS. Send for free samples: G2DJA, 137 Randal Avenue, London, N.W.2.

G6MN for the "best" QSL's and approved log books, send for samples: G6MN, Bridge Street, Worksop, Notts.

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

BRITISH EUROPEAN AIRWAYS are requiring Radio Mechanics conversant with ex-R.A.F. Transport Command, Bomber Command, Signals and Radar equipment, for servicing airborne equipment at Northolt Airport. Basic pay 2/7 per hour. Applications should be made to Personnel Officer, Northolt Airport, Ruislip, Middx.

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.

H. FRANKS, 58, New Oxford Street, W.C.1. Phone—Mus. 9594. Offers the following ex-Govt. Equipment to **CALLERS ONLY.** Comprising the following: A.C. Mains driven Oscillators, Type 37; Receiving Units, Type 69; C. R. Units, Type P1246; C. R. Power Units, Type 526; A.C. Mains Receiving Units, Type 103a, less valves; Performance Meters, Type 53874; A.C. Mains Wavemeters, Type W1252; Battery Wavemeters, Type W1095; Receivers Type 1147; Receivers 3132; Receivers 3075; Indicator Modulators; Auto Transformers; C. R. Units, Type 198; Receivers Type 76a; Battery driven Amplifiers; Venner Time Switches; Large assortment of Volt, Amp. and Milliamp Meters, Neutralizing Units with R.F. Meters; Metal Rectifiers, Relays, Vibrators, Packs, etc., etc.

SHORT WAVE (HULL) RADIO

G5GX

RECEIVER KITS

2 Valve O.V.1. Bandsread tuning, plug in coils, 9-200 metres, Pentode output. Price less cabinet and batteries **£5 10s.**

4 Valve 1 (Tuned) V2 Bandsread tuning 9-200 metres, Black crackle steel cabinet. Price less batteries and speaker. **£12 12s.**

TRANSMITTER KITS

10 watt C.W. Tx with Xtal and coils for 160-80-40-20. **£11**

25/50 watt C.W. Tx with standard panel, meter, drilled chassis, Xtal and coils for one band, all components and valves. **£19 10s.**

Further particulars supplied on request.

SHORT WAVE (HULL) RADIO

30/32, PRINCE'S AVENUE, HULL

Telephone 7168

M.O.S. Communications Receivers

- **MINIATURE COMMUNICATIONS RECEIVER** Type No. 3/II complete with 4 valves (2 of 7R7 and 2 of 707) and pair L.R. phones, in transit case, less power supply. 79/6, carriage and packing 5/-. New and unused. Range 3-16 Mcs.
- **MINIATURE AC/DC POWER PACK.** Input voltages 140v.-250v. Output suitable for small superhet. As used on the MCR1. 60/- New and unused.
- **R1155 RECEIVERS** available either new and unused in models R1155A-N inclusive at £17 10s. Or in excellent almost new condition at £15 15s. (carriage and packing 10/-). Transit cases 10/- extra.
- **A FEW ONLY HALLICRAFTERS, NATIONAL, HAMMERLUND** receivers for disposal.

Sole Distributors of
The Burgoyne Aerial Co-Axial Connector

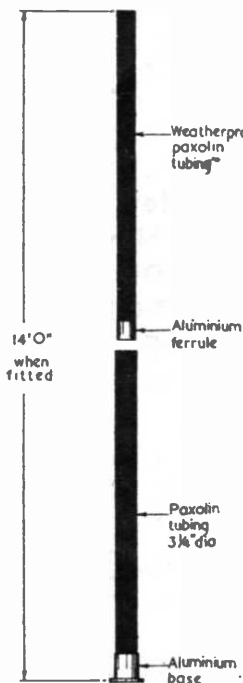
M.O.S.

MAIL ORDER SUPPLY

24 NEW ROAD,
LONDON, E.1.

Stepney Green 2760, 3906.

THIS MONTH'S BARGAIN!



Special offer: a two-sectioned aerial mast. Consists of two lengths of paxolin tubing 2 3/4 in. and 3 1/2 in. dia. respectively, with 3/16 in. wall. The smaller tube fits tightly into the larger one, both having metal ends. When fitted the aerial mast has an overall length of 14ft. Ideal for a transmitting or receiving aerial, but has many other uses also. May be fixed to the ground or to a fixture such as a chimney, wall, etc. Very sturdy. The price for the complete article is only 21/- carriage paid.

OTHER ATTRACTIONS

RECEIVERS:—

R3003 A.M. I.F.F. Receiver working on 12v. and 24v. £1 10s. (packing and carriage 5/-)

Type C.P.R.-43AAO U.S.A. equivalent of the R3003 £2 (packing and carriage 5/-)

R3132 A.M. 1 1/2 metre receiver. Easily convertible for television sound and vision reception. This receiver is intended for use with the A.M. Indicator Type 6A, which is just right for converting to a television indicator £3 (packing and carriage 10/-)

Type 69 A.M. I.F. amplifier containing a 24v.-250v. and 12.6v. rotary converter £2 (packing and carriage 7/6)

R1147. There is hardly need to describe this now well-known receiver in detail. Just say that it is a 2 1/2 metre receiver, again easily converted to the 5 metre band for television. £2 5s. (packing and carriage 7/6)

Type 3 Mk. 2 covering 3.1-15.5 Mcs. Runs off a power pack from 90v.-250 v. AC or 6v. DC £6 complete (packing and carriage 10/-)

INDICATORS:—

Type 6A. Can be used as television indicator with the R3132 as a receiver £5 (packing and carriage 10/-)

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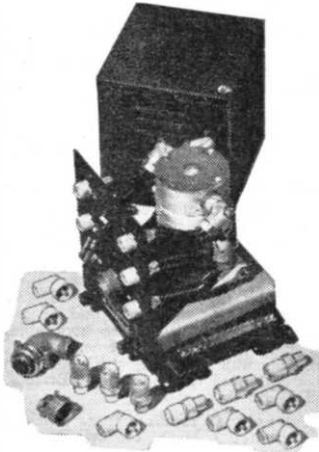
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