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No. 3

MAY, 1974

25p

THE
**SHORT
WAVE**
MAGAZINE



**WORLD WIDE
COMMUNICATION**

For the Radio Amateur and Amateur Radio

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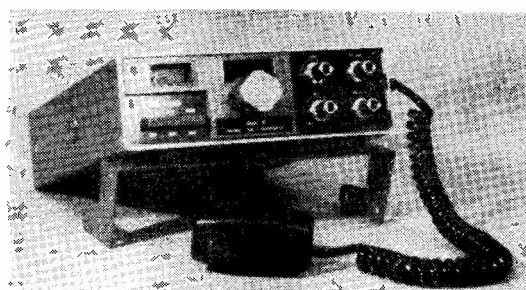
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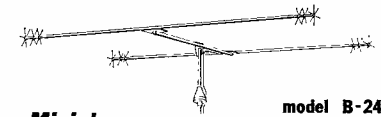
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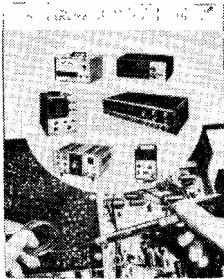
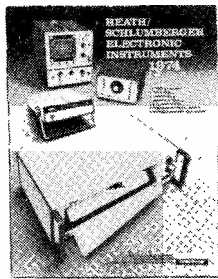

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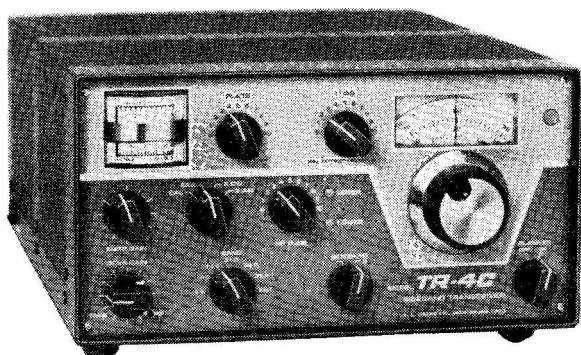
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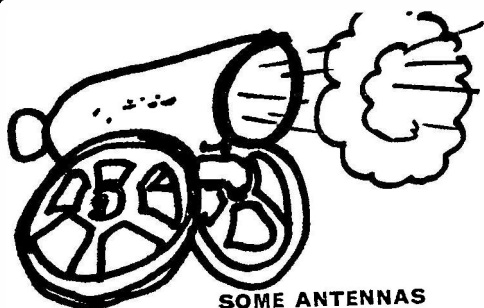
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TRIC EQUIPMENT. Receivers: TR7200, £129.50 (£1.00); TR2200,

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JR 599, £160.00 (£1.50); Transmitter TX-599, £160.00 (3.00); Trans-

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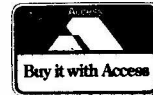
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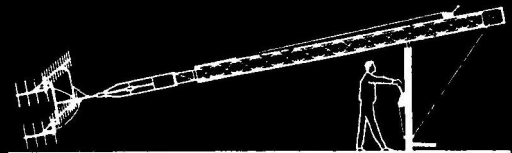
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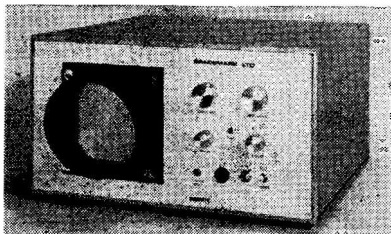
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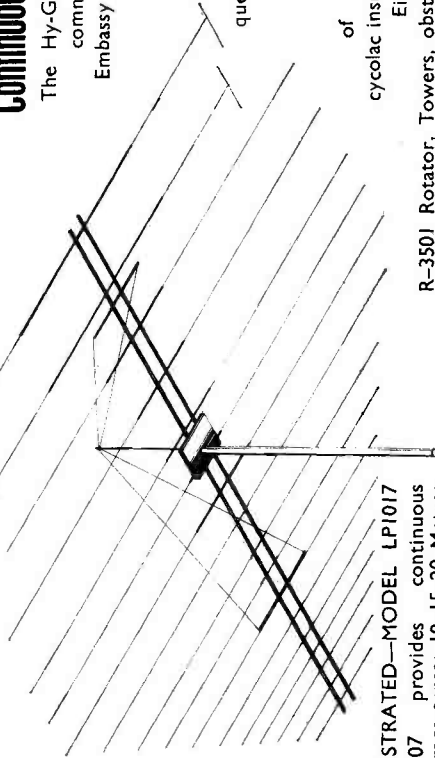
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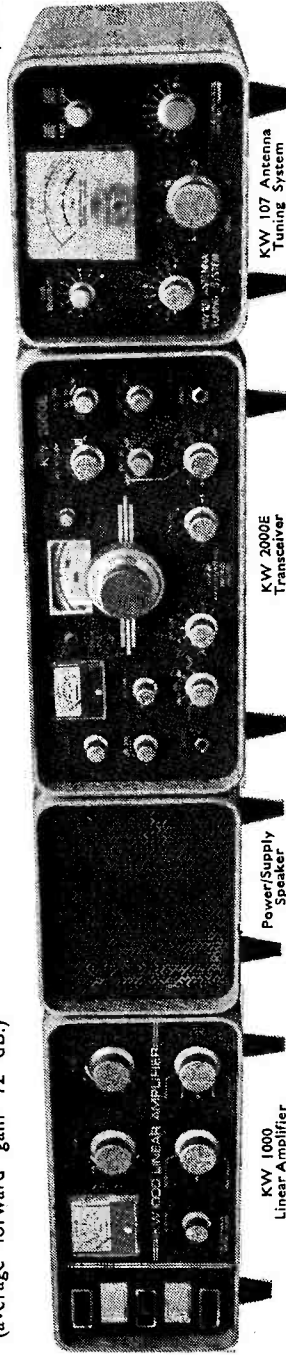
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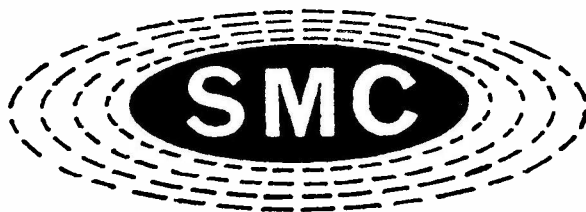
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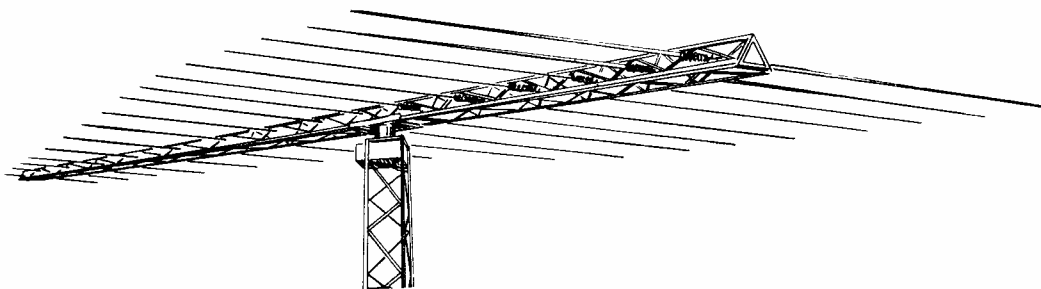


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SHORT WAVE MAGAZINE

(GB3SWM)

Vol. XXXII

MAY, 1974

No. 367

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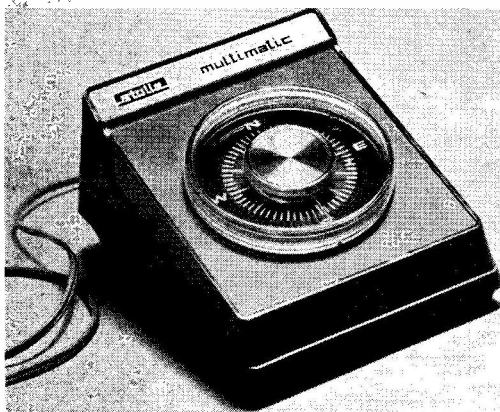
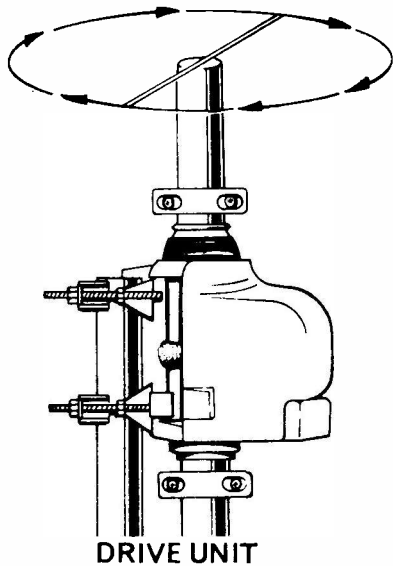
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The SHORT-WAVE Magazine

EDITORIAL

MinPosTel ABOLISHED

It was announced in the House on March 28 that the Ministry of Posts & Telecommunications is to be abolished and that the Secretary for Industry, Mr. Wedgwood Benn, would become responsible for the Post Office. On the other hand, functions relating to the Wireless Telegraphy Acts (by which we as licensed amateurs are governed) would be transferred to the Home Office, under Mr. Roy Jenkins.

So far as Amateur Radio in the U.K. is concerned, apparently the effect could be to separate the technical side (GPO) from the administrative (Home Office)—unless of course the latter Ministry is to assume responsibility for both. It will be remembered that Mr. Benn was P.M.G. under a previous Labour Government. The new apportioning of responsibilities obviously has very wide ramifications.

* * *

BOX 88, MOSCOW

An article in the current issue of G2BVN's *Region I News* gives some interesting details about Amateur Radio in the USSR. The Hq. office for the Central Radio Club, the governing body, is just outside Moscow and has a full-time staff of 18 (under UW3ID as chief executive), a large library, reading room, lecture theatre, laboratory and workshop, and further out an Hq. station running a kilowatt on the HF bands. The QSL bureau itself, the famous "Box 88," is run by four women who handle about 2½ million cards a year (what a job!). Other statistics noted by ZL1HL in his article are that there are 46,000 licensed amateurs in the Soviet Union, and some 4,500 "Klubs" with 17,000 members. The maximum power allowed to Russian amateurs is 200 watts (Class I licensees).

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It is of course well known that in the United States they have an "11-metre band," consisting nominally of 23 narrow channels around 27 MHz (just LF of our 10-metre band), allotted regionally across the country, for private low-power local communication using approved equipment under a simple licensing system. (You pay your \$20, declare you are over 18, are given a callsign, and away you go with a licence limiting you to five watts maximum on your regional channels). On the latest count, there are one million licensed C.B. operators in the U.S.—and about twice that number who have not paid their \$20.

The whole situation has become chaotic and quite beyond the control of the F.C.C. (the U.S. licensing authority). Abuses are widespread, with gross over-use of power, highly sophisticated equipment far beyond what was originally intended, and generally a total disregard of the law affecting C.B. radio.

* * *

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Articles and photographs on any aspect of the Amateur Radio theme, for possible publication in SHORT WAVE MAGAZINE. Material should be set out as outlined under "Authors' Mss." on the Contents page of any issue. Anything we can use is paid for, immediately on publication. Photographs should be described on a *separate* sheet and lightly identified on the back in pencil—colour prints, miniature film strip and negatives should not be sent.

* * *

FIVE YEARS TO GO

The next World Administrative Radio Conference will take place in 1979, when the whole radio spectrum 10 kHz to 275 GHz will come under review for re-allocation and parcelling-out among the various interests. All amateur bands will be vulnerable, especially because of pressure by what are known as the Third World powers.

Austin Forsyth
G6FO

COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

RATHER as one would expect at the time of year—most G stations fully occupied decorating or lawn-moving! The bands have been closing later as twilight got later day by day; the spring lift has seen some activity on all bands Ten to Top, Ten of course by way of VHF-style and occasional DX openings to the South, through to Top Band which is not as yet so afflicted with noise as it will become in high summer.

No matter what the non-contest types may say, there is no doubt that the advent of a major world-wide contest is as good as a dose of sunspots, proving that activity is a lot to do with "conditions." And, sure enough, there were the non-contest chaps, calling "CQ no contest" and having more ragchews on one night than they would normally do in a week, with any particular batch of QRM never lasting for more than a contest over so that they could pull their QSO through it all more successfully than usual.

Twenty

This as always is where the action is. Most evenings have seen the band open at times when those of us with a salt-mine to see to can get on, sometimes remaining active till quite late, well after dark. On the debit side, however, one must comment that the palm for the loudest signal has well and truly left the Iron Curtain and passed to Italy, from which country hardly a single *clean* SSB signal has been heard during the period. One quite fails to understand how a bit of first-class tackle—Drake, Collins, Heath, KW or whatever—which sounds fine in anyone else's hands, emits a splurge which spreads twenty or more kHz and is almost unreadable into the bargain when used by an Italian station. Of course it must be admitted for 20m. the Italians are just at the right distance for us to catch the worst of it, but surely that does not account for the whole effect.

For your scribe, Twenty was, in the main, a play for a few hours in

the *CQ WW WPX* contest, from which he emerged with lots of W's from most call areas, quite a few Europeans and three new countries added to the score.

GM3CFS (Eday Is.) was active during both legs of the ARRL contest and also during BERU, for which last conditions were very poor. Jim offers CW contacts with VK2BPN, VK3MR, VK5NO, VS5MC, VP2MJ, FR7ZW, VU7GV, ZE8JJ, 3D6AX, 5Z4LW, 9J2BO and 46 of the 48 States, plus VE1-8. Incidentally, GM3CFS is to QRT around mid-May in preparation for a return to the mainland.

His ZL skeds have now faded out, says G2HKU (Sheppey), with conditions a lot worse than they were this time last year, and, of course, the inevitable II's with linears, Quads and horrible signals (and your scribe might remark that his own comments on the Italian signals were written *before* he read G2HKU's letter). As befits an expert, Ted still managed to communicate, CW giving UD6DFY and UK8BAJ, while the SSB yielded JA8ZO, UA9BR, VK7IL, ZL1VN, ZL3SE and 9H1BX.

A letter from G4BNH, on behalf of VP8NP, says that the latter will be coming on at 2100z, Fridays, Saturdays and Sundays, frequency being 14186 kHz. The point to remember is that VP3NP has Antarctic Survey duties to do, so for five minutes in every fifteen he will be QRT. This means that, should he be raised and contact lost, the precise frequency should be monitored for a bit more than five minutes before giving up hope. On the QSL front, these should be sent to G4BNH, *QTHR*.

Quite a surprise packet next, in the form of a letter from G3UOL (Coventry), who has not written for these many moons. Bill has a Viceroy Mk. IIIA (as nice a Tx as K.W. ever produced) and on the receiving side a Geloso G209R, with a trap dipole as the aerial. SSB yielded 3A0FY/M, 5U7AZ, VE6CBJ/SU, VO9R, CR4BC, HK0BKX, KZ5BC, TU2DA, ZP5JX, YS's, 7X3OM,

CX2AX, CP1FE/6, FP0BG, HP1XIS, HR3JJR, KZ5NG, VP5CW, CX1JM, LU8AJG, PS4KL and HV3SJ. Incidentally, the PS prefix was used by a few PY stations during the contest.

G3UZ struck tragedy during the previous period, when his aerial was brought down by the gales, but all is mended now, so CW was used to raise 9V1RS, XW8BP, DU6RH, JA2ES, YV4DEK, ZS6ME, ZP3CA, 4X4RW, EL0W, UJ8AQ, UH8DR, UA0HRH, 9H1BB, VX1KZ and I4FGM. This last was a station set up to celebrate Marconi's centenary.

GM3ZXL (Glasgow) has been a regular reader for fourteen years; but, of course, as his call indicates, Andy has not been fully licensed for that long. His list is all on 14 MHz SSB, with XU1AA, ZS6NH, 7Q7BC, VP8FL, YS1GMV, HL9WI, TJ1AF, ZL2AFT, various VK's, 9M2IR, VS9MB, CR3AH, TU2AE, K2IRT/KG6, HS1WR, DU1EN, HK0AB, WA6TXT / KC4, KL7HNO, KX6BU, KC6VE, ZK1DX, UW0IE, C21DC, VR4BS and KW6HF. A nice crop for a first entry into our lists.

G3VGU (Grays) reckons it is quite a while since he last reported in; John is now using a TS-510 and a TA32 aerial, with CW and SS/TV the preferred modes. As he says, it is a change to hear the band open in the evenings, although his own contacts were mostly North and South Americans, PY7AJB, LU1E1Y, LU1DSE, PY1DWU, and PY5AEJ/1. In the slow-scan mode, more time has been spent copying, pictures having been received from I8, IT9, IS0, EA, CT1, W, PY, YV and VQ9.

G4CXM (Paignton) used CW to work VE4TC, UA0BBC, UW9AT, OX3CS, UL7EAA, KZ5EK, 9H5D and W1GWM (who was RST 559 with just two watts). On the SSB side, contacts were rung up with 9L1JM, ZS6BLO, 9M2DQ, 9M2AT, 9M2TR, VK5VX, EP2VJ, JA7SSB, VP7NN, VP7BK, YV4WT, OJ0AM, ZC4AK, PJ2CW, VK3CR, UA9HM,

VP2EEA (Anguilla), VE6CBJ/SU (three times) TF3SV, XW8GP, 6W8FU, HS4AKF, A4XFD, VP9DC, VE8RCS and VE8DL/8. Another good crop!

Right at the last moment a letter from G3NOF (Yeovil) turned up with his usual analysis of the bands. Twenty was not much good to VK/ZL in the early mornings, and the only Pacific station heard was ZK1DX; in the early evenings Africa was all but missing, but there were some short-path VU, 9M2 and 4S7's. The W's were in-and-out all the time from noon to as late as 2200, but not much was noted from W6, W7 or VE7. G3NOF particularly singles out his SSB contacts with HKØAB (Serrana Bank), HS4AKF, HV3SJ, JA1GNU, PJ9JR, SV1GA/5B4, VE8DC, VE8ML, VE6CBJ/SU, VK2AHH, VK3LJ, VK5MS, VK7TR, VP2VAP, VP7NN, VP9AD, VS5LH (at 0735) W7HQC, ZL2BIS, 8Q2AC, 9M2DQ and 9M2GR.

A second letter from G3FYR came in right as this piece was being wrapped up; Europeans plus UA9CAM, UA9CBB, VE1BAS, WB2ZVU, WB2MDR, VE2BBP and UA6DHK. On a completely different tack, Bill is quite justifiably amazed to find that *all* the DX he worked on September 10, 1972, including JH6, VK and ZL, has come up with a QSL card!

Fifteen Metres

G3FYR (Petts Wood) reckons he prefers CW because SSB not only calls for a linear but can also cause TVI. His 12AVQ aerial seems to have been used exclusively on 21 MHz this time, on which band Bill worked WB5DTX, WB4SGV, W3AXW, WA3NCQ, WIKOK, WN3UUM, WA4DLY/4 and JE1OBR, plus a ground-wave contact with G4CWB in Reading. This little lot, in G3FYR's opinion, is an improvement over the previous month, indicating for him the expected up-turn in conditions.

GM3CFS found 15m. generally poor in the East-West direction, save for March 16 on which date it was open till as late as 2000; the following days there were very few W's, but Africans were still at reasonable strength.

G3UOL had a gotaway in the shape of 9V1RR, but made up for it



One of the leading U.K. SS/TV operators must be Richard Thurlow, North House, Church Street, Wimblington, Cambs., who was licensed as G3WW in 1938. Since December '72, some 45 countries have been "seen" in the slow-scan mode, using mainly a Collins 32S-3 Tx, 75S-3B receiver, Heathkit SB-220 linear and a Hy-Gain TH-6DXX beam, with a Lazy-H for 40-80m. A Robot camera, fast/slow scan monitors and tape recorders complete the rig.

by working some PY's, CR6OZ and CX1JM.

March 14, 15 and 16 were noted as good days by G3YRR (Grimsby) who therefore excited his mini-beam to good effect, three new countries going into the book, namely CX, HZ1 and A6. A later letter from Charles indicates that the DX was still rolling on Fifteen. G3YRR has been looking at his QSL situation, finding that the best QSL'ers are the Italians, Finns and Swedes; and out of 1750 cards out, only 530 have come in. The defaulters include *everyone* who asked for IRC's and/or stamped addressed envelope!

G3NOF describes conditions on Fifteen as patchy, with some Africans heard in the mornings, and a few W's in the afternoons. His SSB contacts added up to CN8BO, CQ6LF, PY, SV1GA/5B4, SVØWGG, TR8SS, TU4AH, VP5CW (Caiicos Is.), VU2DK, YV, ZB2WPX, XX6CC, ZD7FT, ZS6BIG, 4X4NJ, 5N2ESH, 5U7AZ, 5Z4OY/A, 9G1DY, 9H5D and 9J2FD.

G3FYR also offers some more signals worked on the band, like CW with UA9CBB, EA8CG, 9J2BO, WB4WHQ, WB5FOO, K4OLQ, K4IGA, WIKTU, WN1RAR, WIKOK, WB5DTX, WB4SGV,

W3AXW, WA3NCQ, WN3UUM, JE1OBR and WA4DLY/4.

Ten Metres

At the time this was being written only one of the letters had made any mention of this band. GW4BLE (Newport, Mon.) found Ten open during the days around March 20, from 1730 to 1900, with W2, W3, W4, G, GI, DL, F, I, ET3 and PY's all audible. An interesting observation was that the W2/W3 stations were working into Europe with their beams headed South, and not on the direct path heading. One new country was garnered in the shape of ZB2CJ

This being said, along comes the postman with two more mentions about Ten. G3NOF describes it as "an unreliable band" which seems a bit of an understatement! On March 14 it opened around 1800 to give KP4, OA, YV, LU, ZP, EA8, PY and W4, while on March 17 and 31st openings were noted to Africa both in the morning and the afternoon. However, Don made his number with CQ6LF, CQ6OR, CR7AF, 5T5FP, 5Z4OW, 9X5PT, 9J2DT, 9J2LP and VP8LP.

The other reporter on Ten is G4CXM, who only heard Africa and the Mediterranean area, and worked 5B4LR, and 4X4QG.

Comments on This and That

GW4BLE wonders whether the rising prices of the Japanese gear will work in favour of the British and American made stuff; as he says, the current price of the Yaesu FR-DX400S receiver is £210, which puts it almost into the price range of the Drake R-4C. A good point, but one feels that in many cases it will mean that a change of station equipment will be deferred awhile.

G3YRR (Grimsby) is still puzzling over his inability to work the DX on Twenty. He has written to the suppliers about his Mini-Beam, and their recommendation is in favour of more height; but it is, to be fair to the beam, true to say that with the beam Charles is getting into more places than he did with the vertical, and G3YRR comes to the conclusion that there is something to do with the site which is upsetting things. Could be, at that.

G2NJ (Peterborough) wonders if anyone else heard G9BAL, testing on SSB on 3514 kHz at 1115z on March 26. This one was understood to be genuine, with excellent quality, and to be a commercial station licensed specially for some propagation tests. A pity he had to come up in the CW portion of the band, though.

Many readers will recall GW3UUZ and his prodigious signal on Top Band from Nash Point Lighthouse. Since then Andy has been to various places in the line of duty, the latest being to Bishop Rock lighthouse, and based on the Isles of Scilly. G3UUZ will have a month on the light and a month off, with, this time, an HW-12A with DC and AC PSU's on the light and the usual FT-250 rig at home.

One of the effects which have only been noticed of late years is the considerable reduction in noise on the bands which occurs at this time of year; the writer is inclined to think this is, at least in part, to the switching back of central-heating systems as the weather gets warmer.

Forty Metres

GM3CFS first, and Jim used CW as his mode, to work all the W7 states and W6's during the ARRL Test, but does not report any other QSO's.

Just one contact, on the key, was enough for H2HKU—Ted's offering is PY7PO.

During the CQ WW WPX Contest, GW4BLE stuck entirely to the 40m. band, with the result that he was able to raise his band-countries total to 100, the new ones being HK0AB, VP9G, VP2SG and VP2GGG. Stephen reckons at a rough guesstimate he will have a final score of around 100,000 points which should put him well among the leaders. His SSB contacts included CN8BO, CQ6LF, CR4BC, CT2AK, CT2BL, HC2TV, KZ5JM, KZ5PW, M1C, OA4ANV, OA4OS, OD5BA, PJ9JR, PY1RO, PY2CAB, PS4AKL, PS7NS, TG8IA, TU4AH, TI2RT, U5ARTEK, VP5CW, VP9G, VK2AVA, VK2WC, VK5NS, VK7GK, YV1TO, YV4OW/7, YV4AGP, YV5MO, ZL1AMO, ZL2BT, ZL2DO, ZL4BO, ZB2WPX, ZS6DW, 4X4NJ, SV1GA/5B4, 5Z4OY/A, 9H1CD and 9Y4VU.

Eighty

Mainly ignored by the reporters. Your conductor notes that G3UUZ is taking an HW-12A out to Bishop Rock, and so will be activating a very rare WAB area from there; his home QTH on the Scillies is also a pretty rare 'un, which should be

good for business *chez* G3UUZ. Arising from this, your scribe made some attempts to load up his Top Band wire to Eighty, and did in fact get to the point of a very tentative CQ Test call over the Easter holiday—however, while the field-strength meter said we were radiating, and nothing blew up, nothing came of it in terms of actual contact—oh, well, press on.

G2HKU notes just one contact on the band, with OZ1LO/CT3, on Phone.

G2NJ continues to look out for /MM stations and QRP'ers. On the first front, YO3RH/MM was worked on April 5, bound for Copenhagen from New York, naturally using CW. Two days later, Nick ran across G3BRS/P, out near Heywood, Lancs. with an input of two watts and a 579 signal report. No doubt about it, the QRPI results G2NJ reports from so many places should be noticed by the authorities when countries are allowing more and more high-power stuff to create more and more QRM on the bands.

GM3CFS also used the key; Jim mentions UL7MH, UL7PN, UV9PO, UW9DA, UI8LAG, 5Z4LW, VX1KE, VX2AW and W5GEW as being worked.



Trevor Bowen, G4AAU, 126 Westfield Lane, Kippax, Leeds is ex-GW4AAU and now runs a KW-2000B into a "5RV"-type aerial draped round the garden, with Z-match unit and SWR meter. He also has a 20m. dipole and is building a mini-beam for that band. With CW a prime interest he has a home-built keyer unit, lower right in picture.

Top Band

Time was when your scribe would beef that far too much of the activity was on this allocation, but of late years it has fallen away considerably. This month, the only reporter for Top Band is G2HKU, who spoke to PAØPN, and keyed with DL1TL, OK1FBW, OK1FCW and PAØRCH.

Elsewhere, we mentioned VP8NP; he proposes to operate Top Band, using either a "ring" (does he mean DRRR?) aerial or a dipole. He will call at 2300z each Friday, Saturday and Sunday, on 1805 kHz, and listening in the "DX-window" area around 1825 kHz. As already mentioned, the incidence of duties means he will be away from the rig for five minutes in fifteen, so if contact appears to be lost, stick around for at least that time before giving up. This one should give the DX lads something to bite on.

Here and There

By now there will, all being well, have been some activity from South Orkney, by VP8MS, or South Shetland by LU1ZC, or both, with possibly some from South Georgia to follow.

Bi-centennial commemorative calls for the W's are being looked into by the FCC, we understand; a system which will allow for all the existing prefixes and will not require office action is desired, and we are told something will come to a head soon—so, if you hear a rash of funny prefixes, or suffixes, hailing from Stateside, you will know what it's all about. They are determined to celebrate the 200 years somehow!

One hears that VR1AR is a slow operator, sending very carefully at about five w.p.m. and only being able to receive at a lower speed still—but we reckon that if he sticks to his last for long he will become a dab hand on the key from sheer force of circumstance. The effort must be terrific with a pile-up waiting!

The China effort mentioned before is still, at the time of writing on the cards, although it is understood FCC disapproves on the grounds that China has never signed the ITU treaty—there's always something.

In mid-May, we are told, there may be some more Mount Athos



Station of D. G. Simmons, 5Z4NR, Kenya, now G4AVB, 37 Berry Road, Stafford. Gear shown here includes FT-400 Tx, FR-SDX400 receiver with various home-built ancillaries and a two-metre 50w. Tx. Aerials out there were a TA-33Jr. rotatable, a "G5RV" type and a dipole cut for 40m. While in Kenya G4AVB/5Z4NR was one of the radio-link stations for the famous East African Safari Rally.

operation, by some of the OH chaps.

Albania is proverbially the home of Fred Phoney, at least as far as Amateur Radio goes. However, there is a buzz on the grapevine that there *may* be a *genuine* station on from ZA later this year for a *short* burst—perhaps the best thing to do is to work all ZA's encountered until one turns up with a QSL card!

Bad News

Readers will doubtless recall reading about the US Embassy p.r.o. who was kidnapped from his home near Cordoba, Argentina, and found later seriously wounded, leftist guerillas having done the deed. Having so badly wounded him, they apparently had a guerilla surgeon perform an operation and then dumped him, with a blood plasma bottle strapped to his arm and wrapped in a blanket, in a riverbed, from which he was taken to hospital in an extremely critical condition. The official in question was in fact Fred Laun, LU5HF1, well known indeed on the bands. At the time of writing we have no further information on his condition.

We hear that CR9AK is back in

Macao; but this will not bring much joy to anyone wanting a QSO with him, for the simple reason that he is sitting at the time of writing with a dud trap in his tri-band beam.

XV5AC will be leaving Saigon ere long; Chester is not particularly pleased at the prospect of having to pack all the gear up for shipping, and he reckons he will be having real problems getting the big twenty-metre beam down to the ground and taken apart.

Observant types will have noticed that VE8RA has not been so often heard of late. It appears he has been out of the Yukon since early March; having had an operation, he was at the time of writing back home, but not feeling too pleased with life, as there is some more surgery to come later in the summer. Our best wishes go to him, as indeed to LU5HF1 also.

Aerials for DX

Always a bone of contention at the lower levels at which most amateurs in this country can cope. What between planning permissions, cost and the difficulty of raising them within the confines of the small

gardens most of us have, the question of a beam or a Quad is neither here nor there—we can't dream of either! However what *is* of interest is the relationship between, say, a trap vertical at ground level, as against a dipole, or a W3DZZ-type trap dipole, at the heights which can be achieved without running into planning or neighbour-reaction problems; or between a loaded-whip vertical in the loft for, say, Twenty, as against a bent dipole in the roof-space for the same band.

From his own experience, your conductor would be inclined, in the absence of facilities for a beam of any sort, to go for some sort of vertical aerial, if possible. His own vertical is set on a stub mast which places its feedpoint about eight feet above the ridge of a normal house, the radials being made of very thin wire, and held by transparent nylon monofilament fishing line. In this situation, with the 14-AVQ, it seems of little moment whether you have the two

radials per band the makers recommend, or just one for each band, cut to the correct lengths of course. Both the VSWR, and the results in practice, seem to bear this contention out at a time when the sunspot situation is not exactly happy. In this form, the aerial also does not seem to have developed any directional effects which were not present when the full set of radials were in use. As to neighbour relations, the most that has been noted is the occasional curious glance at the "thing" standing high in the air. On the other hand, trials with loft aerials, such as bent dipoles or zig-zag wires do not seem to give such consistent results over a period, although there are quite definitely times when they will, on a specific path, out-perform the vertical. These trials have all been run using the KW-2000B "barefoot" under which conditions one has to expect that one will receive poorer reports than one gives to the chap

with beam and full-power linear. However, it has to be admitted that, once one gets up on the roof at the level of the feed-point of the vertical, at this QTH one realises that the take-off is pretty good all round with no serious obstructions.

QRT Time

That's it for this time. The deadline for next month is **May 11**, first post, addressed as always to "CDXN," SHORT WAVE MAGAZINE, BUCKINGHAM, MK18-1RQ. *Till next time, 73.*

As we get back to normality as regards production, we can give the following closing dates for CDXN, for the next few months—all Fridays, so that the work can be started over the ensuing weekend: **June 7, July 5 and August 9**. Please note them and write in accordingly, allowing an extra day for mail delays—in other words, post on the Wednesday.—*Editor.*

* * * THE MOBILE SCENE * * *

REPORTS AND THE CALENDAR

By all accounts, the first Mobile Rally of the season, put on by the White Rose Radio Society in Leeds on March 31, was an unqualified success. In fine weather, the total attendance was estimated at no less than 3,000 and the trade stands reported excellent business. Indeed, by lunch-time the numbers present had dispelled any doubts about the future of such Rallies, in the prevailing circumstances.

Talk-in was worked by G4CPD/A (Top Band) and by G3XEP/A on two metres. It was noticeable that there was an increase in SSB/M.

The North Midlands Mobile Rally will be in the past by the time this appears but we hope to have some notes on it by next time.

THE RALLY CALENDAR

May 5: Spalding Tulip-Time Rally at Surfleet, 4 miles north of Spalding on the A.16. This is a pleasant riverside venue, with overnight camping and caravan facilities available. There will be trade stands, bring-and-buy stall, a raffle, refreshments on site, and tulips and vegetables for sale. Talk-in by G3VPR/P on 1980 kHz, G8HZF/P on 145.0 MHz and G3XBS on 70.26 MHz—R. Harrison, G3VPR, *QTHR*, is the contact man.

May 12: South Leicestershire Mobile Rally at Westfield Activity Centre, Westfield Road, Hinckley, Leics., with trade stands and displays, free car park, and talk-in on 2m./160m.—M. B. Farr, G4CAJ, 33 Waterfall Way, Barwell, Leics.

May 19: Northern Mobile Rally at Victoria Park Hall, Keighley, Yorkshire.—J. E. Annakin, G8DFZ, 25 Ilkley Road, Otley, Yorkshire.

May 25: (Saturday) The Royal Naval Amateur Radio Society rally event at *H.M.S. Mercury*, Leydene, Petersfield, Hants., off the A.3 Petersfield-Portsmouth. (Turn right to Clanfield, and right again at the "Rising Sun".) There will be talk-in on 2m./4m./160m. using the special call GB3RN, also trade stands and displays, and a raffle. Entry will be charged by a bottle (full) of any sort, or 15p per car for those without bottles!—D. Thomas, G3BZU, *QTHR*.

May 26: Hull & District Amateur Radio Society rally at the East Riding College of Agriculture, Bishop Burton, on the A.1079 York-Beverley. Talk-in by G3AMW/A on Top Band (1980 kHz AM) and G8GBY/A on two metres (144.3 MHz SSB and 145 MHz AM), operating from 10.30 a.m. Attractions will include trade stands, bring-and-buy stall, a raffle, also special attractions for the YL's and juniors. Refreshments obtainable on site and ten acres of ground available for picnics. This Rally is organised to be essentially a family affair.—L. D. Colley, G3AGX, *QTHR*.

June 9: Located near Derby, the fifth Elvaston Castle Rally, at this 200-acre country park, with weekend caravan and camping facilities. Approach by the B.5010, just off the A.6 Derby-Loughborough, with easy access to Junc. 24 on the M.1. There will be talk-in by G3EEO and G3ZBI (bands/frequencies not stated), a good range of trade stands, bring-and-buy stall, and Army demonstration teams.—K. W. Clamp, Nunsfield House Amateur Radio Group, 11 Cavendish

Court, Shardlow, Derbyshire, DE7 2HJ. (Tel: Derby 792374).

June 16: East Kent Radio Society event at Westgate Hall, Canterbury, opening at 12 noon, with trade stands ("junk" and "shiny box" varieties) and talk-in on 1980 kHz AM and 145 MHz FM (station call signs not stated). Canterbury is about 1½ hours from London down the M.1 and is in a holiday resort area.—P. S. Nicholson, G3VJF, *QTHR*.

June 30: Upton Mobile Rally, Worcester. Information from B. A. Jones, G8ASO, *QTHR*.

July 7: West of England Mobile Rally at Longleat, Wilts., as in previous years. Details: Brian Croker, G3ULJ, *QTHR*.

July 21: Cornish Club Rally, at venue yet to be arranged. Information from M. C. Locke, G3NKE, *QTHR*.

July 21: Wessex Amateur Radio Group Rally at Braemore House, Nr. Fordingbridge, Hants., with talk-in on 2-4-160m.—A. G. Emery, G3YWG, 7 Brunel Drive, Weymouth, Dorset.

August 11: Torbay Amateur Radio Society annual Mobile Rally at Newton Abbot Rugby Club ground, as last year—L. H. Webber, G3GDW, *QTHR*.

We shall be glad to have organisers' reports on these Rallies as soon as possible after the event, stating attendance, trade stands present, number of /M's worked by talk-in stations (by bands), Wx conditions and any other relevant information thought to be of interest. Address to: "The Mobile Scene," *SHORT WAVE MAGAZINE*, BUCKINGHAM, MK18 1RQ.

SPECIALLY ON THE AIR

Following are some of the special-activity stations to be on the air during the next few weeks. For appearance in this space, notices should be set out as explained on p.84 of the April issue of *SHORT WAVE MAGAZINE*. It is important that these *criteria* be observed, in order that a clear and fully informative notice can be published.

EI0DMF, May 24-26: Operated by Dundalk Amateur Radio Society, for the local Maytime Festival, on all bands 10-80m.—W. Scully, EI2I, *QTHR*.

GB3BB, May 25-26: For the Boys Brigade West Lowland Hike, first from the camp site at Spango Bridge, Dumfries-shire and then on Sunday from Muirkirk, Ayrshire.—R. Dixon, GM3ZDH, *QTHR*.

GB2FES, June 8: For the Leyland (Lancs.) Festival, operation to be AM on 2m. and 160m., other bands CW/SSB, with a special card to confirm QSO's and reports.—R. Banister, G4BEE, *QTHR*.

G3SAD, June 8-9: Operated by Stevenage & District Amateur Radio Society to mark the grant of local borough status, exhibition station on the HF bands, also running VHF and RTTY.—C. Barber, G4BGP, *QTHR*.

GB3KCW, June 10-13: For the Kilbirnia (Ayrshire) Civic Week, 1800-2100 BST, with SSB on all bands 15-80m. QSL's via R. J. English, GM3YKE, *QTHR*.

GB2NTF, June 13-16: For the Trades Fair at Newton Abbot, on the 15-80m. bands.—L. H. Webber, G3GDW, *QTHR*.

GB3NS, June 15: For the Nottingham Scout Event, operating all bands 160m. to two metres, from Wollaton Park.—P. Carey, G3UXH, 1 Coach Drive, Eastwood, Notts.

GB2DHC, July 6: Run by the Torbay Amateur Radio Society at Buckfastleigh for the Devonport Home for Children Fête.—L. H. Webber, G3GDW, *QTHR*.

Notices for this feature should be set out in the form shown here and addressed as a separate item to: "Specially on The Air," *SHORT WAVE MAGAZINE*, BUCKINGHAM, MK18 1RQ.



Seen at the White Rose Rally, Leeds, above G3MCN and G3LRB, of the well-known firm of Stephen-James, Ltd., Liverpool, dealers in Amateur Radio equipment and accessories. Below are, left to right, G3HCW, G8IHH and G8IQH, who were also at the White Rose event.

TRAPS FOR A DIPOLE

TO GIVE MULTI-BAND WORKING

F. G. RAYER, T.Eng. (CEI)
A.I.E.R.E. (G3OGR)

IF a half-wavelength of wire is used as a transmitting aerial, voltage is high at each end and low at the middle, while current is negligible at each end, and high in the middle. The relationship between voltage and current results in the centre impedance being about 75 ohms, so the wire can be cut here and a 75-ohm feeder can be attached, as in Fig. 1. The 75-ohm feeder will pass power into the aerial without any mismatch or losses (except of course for small resistive and dielectric losses, which can be disregarded).

This is the popular "half-wave dipole," in which the top length is cut for the wanted band. Unfortunately difficulties arise when such an aerial is wanted for more than one band. At A in Fig. 2, the next higher band is required. The wire is now two half-waves long, and the feed points X-X have changed to high impedance—possibly some thousands of ohms. As a result, the 75-ohm feeder is so badly matched as to be impracticable. At B, operation is contemplated on the 3rd harmonic. Three half-waves are present, so the feed points X-X are once again at a low impedance point, and the system is practical.

As the amateur bands are 3.5, 7, 14, 21 and 28 MHz, the relationship at B in Fig. 2 can exist for only two bands—7 MHz and 21 MHz. These are the only bands in which the harmonic relationship is an *odd* number.

The harmonic relationship in all other cases is an even number. If 3.5 MHz is taken as the lowest frequency band, the other bands are respectively 2nd, 4th, 6th and 8th harmonics. Thus a situation similar to A in Fig. 2 exists. As a result, the dipole configuration in Fig. 1 can never be used for more than one band (except for the special case 7/21 MHz, as mentioned). However, a solution to using an aerial similar to that in Fig. 1 on more than one band is found in the use of traps, or resonant tuned circuits, installed in the aerial.

Trap Aerial

Fig. 3 is a typical trap aerial, in which a 75-ohm feeder is to be attached at points X-X and the system is to be used on several bands. This does, in fact, illustrate the use of the KW traps in a multi-band aerial.

Each trap is a parallel tuned circuit, and thus has very high impedance at the resonant frequency. This frequency is in the 7 MHz band. For this band, the traps thus isolate the outer sections Z-Z, leaving only the inner sections Y-Y effective. These inner sections are of suitable length for 7 MHz, giving an aerial system like that in Fig. 1.

For the 3.5 MHz band, the traps no longer isolate sections Z-Z but act as loading coils. The total top length is thus in use, again giving an aerial similar to that in Fig. 1. Due to the loading of the traps, the top length is somewhat reduced—about 108ft., compared with about 126ft. for an ordinary 80m. dipole.

For the higher frequency bands, the top lengths combined with the loading of the traps is intended to give

effective lengths of three half-waves, five half-waves and seven half-waves for the 14, 21 and 28 MHz bands, so that the feed situation resembles that for an aerial with an odd number of half-waves—case B Fig. 2. The aerial is thus intended to use a 75-ohm feeder on all bands.

The convenience of being able to operate on several bands with the same aerial is obvious. In other cases, the reduced length may allow such an aerial to be put up where the full 126ft. could not be accommodated. This could allow working on 3.5 MHz when otherwise impracticable. In fact, even further shortening of the overall span is possible, as described later.

KW Traps

The picture herewith shows the two used, and also a T-insulator or dipole centre-piece, which with 14g. enamelled wire is available from the same supplier. The traps are protected by plastic against all conditions, including insects, and can withstand a pull of 350 lbs. (a 25-stone man swinging on the halyard is unlikely to be tolerated by other parts of the system such as a pole, and is in any case not required!). The original design work was done by G8KW in 1942/43 while in the Royal Signals.

The instructions for using these traps call for lengths of 32ft. 6in. for each section Y, and 21ft. 6in. for each section Z, Fig. 3. These are most easily cut out of doors. A small peg can be pushed in, and 21½ft. measured from it. A peg is inserted and a further 11ft. is measured, for another peg. The wire can then be looped round the first peg, and round the 32½ft. peg, and cut, leaving at least 3in. extra each end for twisting. In the same way make a further 32½ft. piece, and two 21½ft. pieces, again with some carried round the pegs for terminations.

Assembly

Place an insulator on each 21½ft. piece, and twist securely. If this is to be soldered, scrape the wire first. Scrape the wire for the trap connection, twisting a loop to match the terminal. Solder the twist—a large iron will be necessary. Place the loop between the washers, and tighten securely. Fit the 32½ft. sections in the same way.

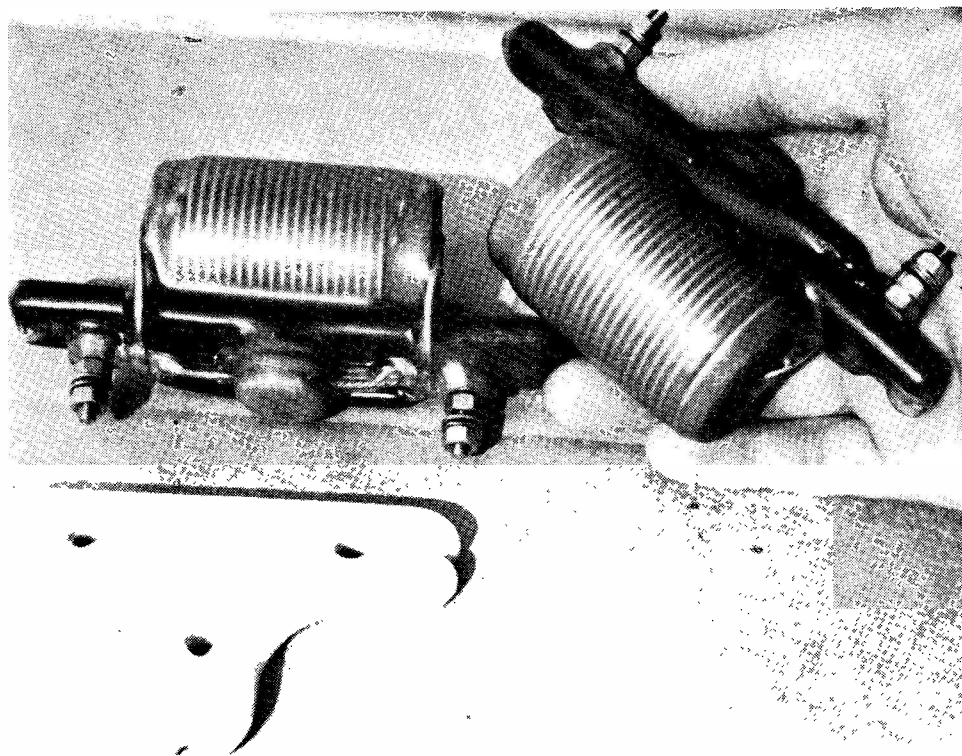
The 32½ft. wires are then taken through the T-piece holes, and are twisted and soldered. Several inches of the co-axial cable or twin-lead are bared. The feeder is bound to the lower part of the T-piece and one conductor is wrapped round each end of the aerial and soldered.

It is essential to keep moisture out of a co-axial cable, and this can be done with *Bostik*' *Seelastik* or similar compounds. Also bind the T-piece with vinyl tape.

The traps are rated for one kilowatt p.e.p. but it is understood that they have been used with twice this power, quite safely. The power rating of the actual feeder line, and its type, will to some extent depend on the user.

Co-Ax or Twin Lead

Twin lead gives a balanced system, costs less, but may be more influenced by rain. Co-axial cable is indeed often used on a dipole, and is favoured in the writer's case. There are other possibilities, such as using a 1:1 balun (also available from the maker) between aerial top and feeder.



The aerial trap devices discussed in the article

A co-axial cable is appropriately plugged directly into a transmitter or SWR indicator. The twin lead is possibly more appropriate when an aerial coupler or ATU is used, so that the balance of the system is preserved. However, it is often possible to use the twin lead as if it were a co-axial cable, grounding one conductor.

Receiving

Reception comparisons between an end-connected wire and a dipole will often show that with a dipole there is much less general noise accompanying the signal. An aerial of the kind described here is, of course, very satisfactory for amateur-band reception. Or it might be put up for this purpose by the SWL who is in due course also expecting to use it for transmitting.

(It ought also to be noted that the aerial is available completely made up with feeder, and this might be preferred in some circumstances).

When used for reception, the simplest method is to plug the feeder directly into the receiver; most communication receivers will have an input circuit intended for about 75 ohms.

When used for transmission, the effect of standing waves should be kept in mind.

Standing Waves

A co-axial cable or other transmission line has a characteristic impedance depending on the conductor

size, spacing of conductors, and other features. Typical cable for the present purpose would be 75 ohm coax, or 75-ohm twin. Where the line terminates in an aerial (or other load) having an impedance the same as that of the line, matching is perfect. All the power that is supplied flows along the line into the load, where it is dissipated, *i.e.*, radiated. This is the ideal operating condition.

Where the impedance of the aerial does not match that of the line, there is some degree of mismatch. The impedance, or voltage/current ratio of the load does not equal that of the line. Some of the power supplied by the line is absorbed or taken by the aerial, and this can be called the forward or incident power. The remaining power is reflected, passing back along the line. The worse the mismatch, the greater the proportion of reflected power. With an infinite mismatch (open or shorted line) all the power would be reflected (discounting losses).

With a matched line, voltage and current are the same at any point along the line. With a mismatched line, forward and reflected components combine to produce standing waves on the line. These are points of maximum voltage and minimum current, or minimum voltage and maximum current. The amplitude of the standing waves grows larger, as the mismatch becomes more severe.

The ratio of the maximum to the minimum voltage along the line is the SWR or standing wave ratio. This is

1 : 1 with a perfectly matched line (*i.e.*, voltages at different points are the same). With an open or shorted line, the ratio is infinity. Between these extremes a range of ratios will be found. The SWR is generally read by some form of standing wave indicator placed in the line.

In the ideal situation, with a perfect match, all power from the transmitter would flow along the line to the aerial, and be radiated (except for the small amount wasted in resistance and other losses). But in other cases there will be some reflected power passing back along the line, which in turn introduces other factors which have to be considered.

Line Loss: As the SWR worsens, losses in the line increase. However, losses are likely to be much less than expected, with practicable SWR ratios. As example, assume a small co-axial cable with a loss of 1.3 dB per 100ft. at 14 MHz when matched. Total loss rises to only 1.55 dB with 2 : 1 SWR, or to 1.9 dB with 3 : 1 SWR, and to 2.3 dB with 4 : 1 SWR. The loss of 1 dB (*e.g.*, 4 : 1 SWR) could just be detected with a receiver in average conditions. A typical signal strength meter would have 6 dB per S-point. Thus low SWR ratios do not much increase losses. However, losses are significant with high SWR ratios—in this case 3 dB for 10 : 1 SWR.

Line Power Handling: This falls as the SWR rises. Current or voltage will rise to approximately 1.4 the original figure with 2 : 1 SWR; to twice the original figure with 4 : 1 SWR, or 3 times with 9 : 1 SWR. A cable rated for 800 watts at 21 MHz with 1 : 1 SWR would thus be reduced to 400 watts with 2 : 1 SWR ($V \times I = W$). In view of the high power rating, for amateur purposes, of other than small co-axial cables, this is unlikely to be important unless the SWR is bad.

Transmitter: A bad SWR increases the voltage and current excursions in the PA components. In severe cases this could cause breakdown. Otherwise, so much reactance might be present that the line can no longer load the PA. If so, no possible adjustment of the PA controls allows the PA to be correctly loaded, and such a situation should be at once corrected.

The SWR a transmitter will tolerate depends on its design. Low power home-built equipment with generous components can easily operate with an extremely high SWR, but with much compact high-power modern equipment the SWR ought probably to be under 2 : 1. If the SWR of the line is too high for the equipment, and the SWR is nevertheless low enough for losses in the line to be unimportant, then a matching unit between line and Tx is the solution. Apart from this, it should be seen that from the point of view of efficiency or radiated signal strength, 1 : 1 is ideal, 1.5 : 1 or so is excellent, and 2 : 1 or so is nothing to worry about, with lines of average length.

Getting It Aloft

Ideally, two high, strong supports would allow the aerial to be raised as at A in Fig. 4. Something approaching this should often be possible. The weight of the feeder and aerial tends to make the middle sag, so that height

is lost unless it is very taut. If possible, a light pole or other support may be able to relieve the aerial of at least part of the weight of the feeder.

Another arrangement is shown at B. A single high point supports the centre of the aerial and the feeder. The aerial slopes down each side at some angle dictated by the height of the central support and other factors. The ends may be quite low. The pole or other support need not be exceptionally strong and the aerial wires help to function as guys.

Another method is shown at C. Here, the major portion of the aerial is horizontal, and equal amounts each end drop down, so that a much shorter span is required.

D is another arrangement which was used. Here, supports Y and Z were of equal height to the middle X-X, so that the wires were about horizontal, but at an angle to each other. This needs only a shorter dimension than A.

Other configurations would be possible. In all cases an insulator is fitted at each supporting point, with a cord to some convenient fixing. This may be a pole, chimney, tree, or other point, as can be arranged. For best efficiency, as with any aerial, advantage should be taken of any height which can be provided. While it is a fact that one can work VK and ZL with a dipole fixed as high as one can reach up a favourite plum tree, a pole on the house chimney will bring better reports from the same aerial.

Inverted-Vee

It was decided to use this, B in Fig. 4, as one pole was available giving a support 30ft. high. From here the ends dropped to 5ft. high, as they were in positions not likely to be touched by anyone. As ordinary single band dipoles had been used in the same situation, experiments with them had suggested that the overall length might need modification, which would be easy with the ends in reach. The feeder was 45ft. of 75 ohm co-ax, but its length ought not to matter if the SWR was to be low.

With this arrangement the SWR was 1 : 1 at 3.75 MHz, and within about 2 : 1 for most of 3.6-3.8 MHz, but rose to nearly 10 : 1 at 3.5 MHz. It was well under 2 : 1 for the whole of 40m. It was around 2 : 1 for most of the 20m. band, rising to 4 : 1 at 14.0 MHz. It was unfortunately nearly 10 : 1 throughout the 15m. band.

As occasional sallies on 15m. were wanted it was decided as a starting point that there would be no harm in shifting the best 80m. band frequency about 150 kHz LF, so 2ft. were added at the outermost ends of each wire. This gave a 1 : 1 SWR at 3.6, with under 3 : 1 from 3.5 to 3.7 MHz. The 40m. band (on inner section) remained as before. On 20m., the SWR was under 3 : 1 from 14.0 to 14.2 MHz, thence rising to 4 : 1, while on 15m. the SWR was 1.5 : 1 at 21.4 MHz, worsening insignificantly to 2 : 1 at 21.3 MHz, but not worse than 4 : 1 anywhere in the band. It was thus decided to leave the aerial like this, as satisfactory.

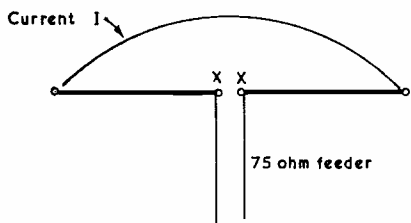


Fig. 1 Distribution of current in half wave aerial

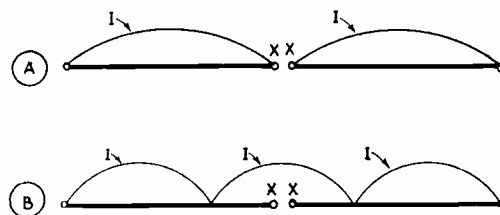


Fig. 2 Current distribution with 2 and 3 half waves

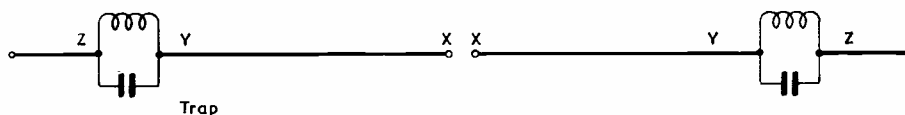


Fig. 3 The KW Trap dipole

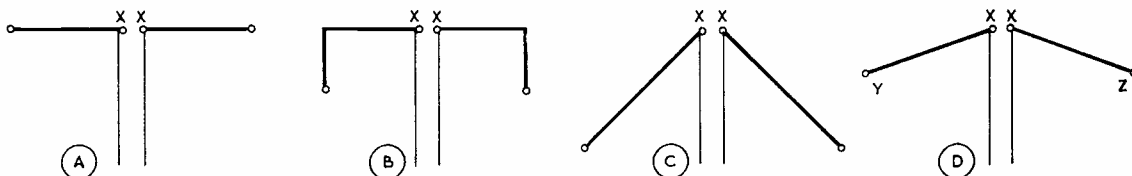


Fig. 4 Some ways of fitting the aerial

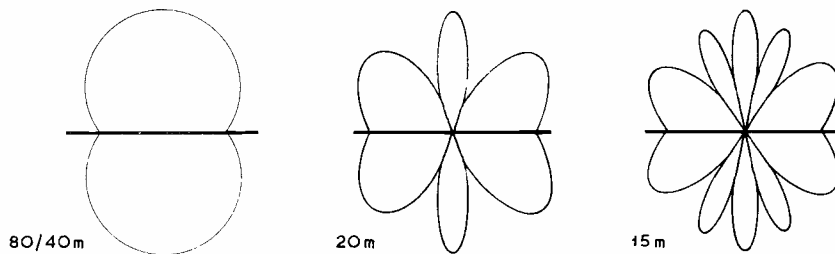


Fig. 5 Directive patterns associated with fundamental and harmonic operation.

A
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It will be noted that the 10m. band has not been mentioned. Here, the best SWR was 10:1, at 29 MHz. With the manufacturer's aerial, a particular length of feeder is used. Effects of changing the feeder length were not investigated, as there was no wish to use the aerial for this band anyway.

Directivity

With the aerial extended in a straight line, expected directivity is shown in Fig. 5. On 80 and 40 metres the system acts as a 1/2-wave aerial, with maximum radiation at right angles to the wire axis. On 20m. the top is three half-waves and major lobes appear at about 40°. These

move to about 30° on 15m., where the top is five half-waves. Minor lobes fill up between.

Such patterns give an idea of what *may be expected*, but it must be remembered that they do not exist only in a horizontal plane, so the actual bearing of radiation varies as the angle relative to ground is changed. As the harmonic rises, the major lobes begin to exhibit some gain, relative to a half-wave dipole.

When circumstances permit, the aerial can be erected with the best orientation for particular directions, but otherwise it is often a case of making use of the most convenient available supports and relying on good general all-round coverage.

FABRICATING B7A VALVE HOLDERS

J. E. FOGG (G3TZN)

B7a valve holders are not too easy to obtain, are somewhat expensive and can introduce losses at UHF if not of good design or quality.

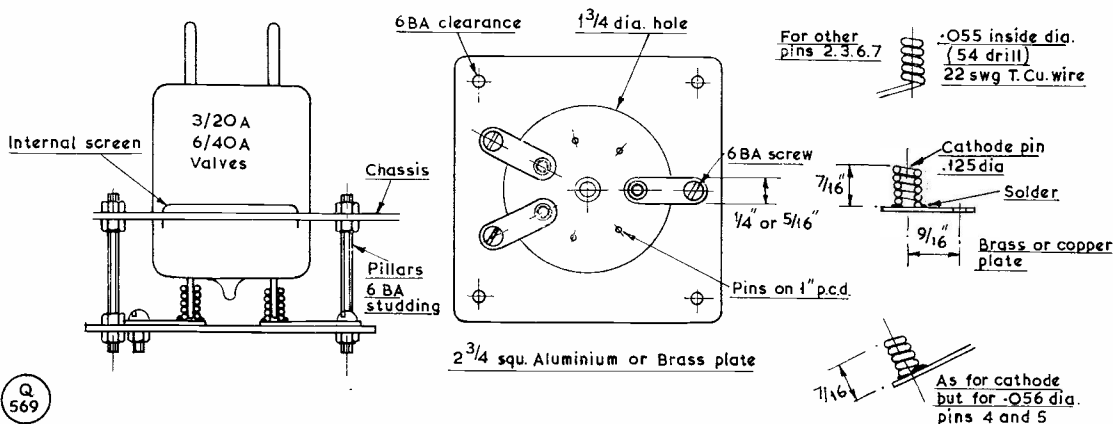
If one is using QQVO3-20A or QQVO6-40A valves with the heaters in parallel, *i.e.* 6-3v., then three of the pins are earthed (No. 1 Cathode, Nos. 4 and 5 heaters). These three pins are evenly spaced and can be used to form a tripod support from the chassis or sub-chassis holding the valve, leaving the other pins free for connecting to various components without the need to use long leads. A 2 3/4-inch square of say 20g. aluminium with four 6BA holes at the corners and a 1 3/4-inch diam. hole in the centre is mounted under corresponding holes in

the chassis.

Wind a length of 22g. tinned copper wire round a No. 54 drill to form a close wound coil and snip off about 7/16 inch long (for the cathode pin use a 31 drill). File one end flat to stand square. Solder these on one end of a brass or copper strip about 7/8-inch long and 1/4 inch or so wide, with a 6BA clearance hole at the other end. These are bolted to the square plate to form three legs into which the valve can be fitted.

The coils can be wound on the valve pins instead if drills are not available, but in this case leave tails so as to twist the coils a little more after removal to close the bore slightly in order to make them a push fit on the pins. The tails are then cut off.

The attached diagram should be self explanatory. The writer has used these valve bases for some years in a two-metre PA and a 70 cm. tripler-and-PA where the latter valves are mounted horizontally, without any trouble.



TRANSISTOR TEST UNIT

AND ALPHA-BETA CALCULATIONS

G. R. THOMAS (G4AWJ)

A piece of equipment found useful on many occasions is a transistor tester, originally constructed to sort out some unmarked transistors.

Transistors come in two forms, namely *p.n.p.* and *n.p.n.* and collector-voltage polarities have to be observed, *p.n.p.* requiring a negative collector potential, the *n.p.n.* positive.

In the circuits Fig. 1 and Fig. 2 the actual direction of currents is shown. The arrowhead in the transistor symbol is useful as describing the direction of the emitter current.

A summation of currents entering the transistor yields a very important relationship describing the magnitudes of the terminal currents equation, this equation applying to either conductivity type.

$$I_e = I_c + I_b$$

An understanding of the terms *Alpha* and *Beta* will also be helpful. *Alpha* α is the "short circuit" current amplification factor of a transistor in the common base configuration and a usual value is an average of 0.95.

For a transistor in the common-emitter configuration the "short circuit" current amplification factor is *Beta* β .

Amplification factors are related to each other and apply to either the DC condition or small-signal parameters.

$$\beta = \frac{\alpha}{1 - \alpha} \quad \text{and} \quad \alpha = \frac{\beta}{\beta + 1}$$

Turning now to the practical circuit of the tester and using the equation $I_e = I_c + I_b$, either a transistor of the *p.n.p.* or *n.p.n.* mode set for an emitter current of 1 mA will have an I_c current of 0.98 mA and a base current of 0.02, therefore an 0.1 mA meter in the collector circuit will indicate 0.98 mA at a certain setting of V_{ce} voltage, Fig. 3.

Before the collector current will flow the transistor must be switched "on," this is done by connecting an 820K resistor between supply and base, as in Fig. 4 and Fig. 5.

To set up required V_{ce} Fig. 3, a voltmeter is required. By the use of a 10K multiplier the 1 mA meter (1000 ohm/volt) can read 10 volts f.s.d., Fig. 6.

All that is now required is to combine these circuits into one and insert an On/Off switch plus a polarity change switch to cater for *p.n.p.* or *n.p.n.*

The complete circuit is shown in Fig. 7. The 3-pole 4-bank change-over switch is marked *n.p.n.* and *p.n.p.* by the "set" position in the centre. In set position this connects the milliammeter as a voltmeter and the potentiometer is adjusted for desired V_{ce} .

The transistor under test is connected and the switch operated to required mode of *n.p.n.* or *p.n.p.*, the meter now reading I_c or Alpha of the transistor, from which Beta may be found by using equation

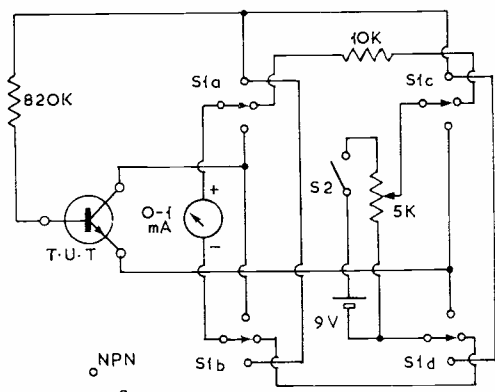
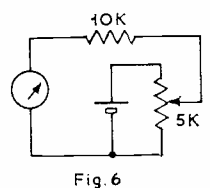
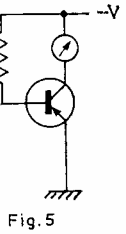
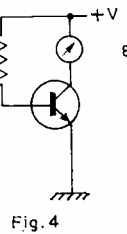
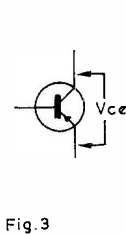
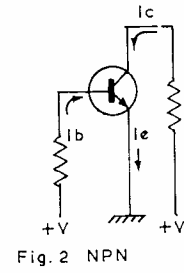
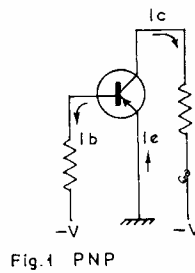
$$\beta = \frac{\alpha}{1-\alpha}$$

Apart from the tester being used to find alpha and beta for a particular V_{ce} it will also give Alpha and Beta for any other V_{ce} and under these conditions once I_c and Alpha are known for a given V_{ce} then I_b may be found for that V_{ce} by the equation $I_b = I_c/\alpha$ and correct value resistors can be calculated for proper biasing conditions.

Reproduced here is an Alpha-Beta table which in the writer's case is stuck to the back of the tester and saves time in calculations.

ALPHA-BETA TABLE

α	$1-\alpha$	β
0.995	0.005	199
0.993	0.007	142
0.990	0.010	99
0.985	0.015	66
0.980	0.020	49
0.970	0.030	32
0.960	0.040	24
0.950	0.050	19
0.90	0.10	9
0.50	0.50	1



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"Short Wave Magazine" covers the whole field of Amateur Radio and should be obtainable to order through any newsagent.



SHORT WAVE LISTENER FEATURE

By Justin Cooper

R.A.E. POINTS—ATTENUATORS—IONOSPHERE AND THE TREND OF CONDITIONS—MATTERS OF INTEREST—READERS' NEWS AND COMMENTS

AS this is being written, weather conditions are showing definite signs of the spring lift, as indeed do the bands—for which Heaven be thanked! By the time it comes to be read, summer will almost be on us, and this year's crop of hopefuls for R.A.E. will be sweating out the last run-up to May 16.

Perhaps it would be as well if we were to consider the technique of the examination; you are in there to expose yourself to the maximum chance of gaining marks towards the total needed to secure a pass. This means that it is no good doing a perfect answer to one question and taking all of the three hours about it! No, you must attempt all the questions you are required to tackle, the corollary to which proposition is that you *must* ration your time out on each individual question. Twenty minutes each, and not a minute longer, is the form—and in that brief period take time to *think* before you write, so what you put down on the paper makes sense to the reader. Some questions will be easier for you than others—tackle one of the easy ones first, to give yourself confidence and get your brain into the swing of things. Don't forget to have a spare pen or *Biro*, or a bottle of ink, to make sure you don't waste time scrounging for a refill. You will want pencils to draw with, and don't forget they get blunt with use, so take a knife or sharpener along. A straight-edge of some sort and a set-square are useful, too. Get in there a bit early, sit back and relax and watch the late-comers flapping about—they are good for a chuckle if you are already well set. N.B. And reference the note in the April issue Editorial, remember that you are *not* allowed to use a pocket calculator. This cancels that paragraph on the Editorial page for March.

In conclusion, best of luck to you all in your efforts.

The Mail

It's a thinner clip than usual this time, thanks to the general dislocation of work during recent months. However, there is still much on which to comment.

First we should mention *M. Drewe (Weybridge)* who has put in a list of callsigns heard for the HPX Ladder; however, Michael has, as so often people do, mistaken stations for prefixes. Let us explain, for the benefit of all, what is meant by a *prefix*. Consider that old reprobate G3KFE; for him the prefix is G3, and if you hear one G3, that is the only G3 who can count (unless there is a special *suffix*, such as /MM and such-like). Thus one G3, one G4, one G5, one G8 and one G2 count, as do one GW2, one GW3, one GW4, one GW5, one GW6, one GW8 also and so on. The only other part of a callsign we take any special notice of is,

on occasion, that bit after the main callsign which indicates it to be from somewhere else, *e.g.* G3KFE/4X, which would score as a 4X3, quite arbitrarily—there isn't a *real* callsign "4X3 something." What you *really* need is a copy of our Prefix List to tell you where all these prefixes hail from, and, particularly for the back page, wherein you get a complete guide to the origin of most of the weird variations that are let loose on us at times. Incidentally, a good way to pile up lots of prefixes quickly is to listen round when one of the major phone or CW contests is going full blast.

M. Wickstead (Taplow) writes a brief note this time, as he has just had a "change of salt-mine" within the organisation for which he works, and he is finding it a bit restrictive on his operating time. On the bands, Maurice has mainly stuck to Eighty, where his "crystal-filter ears," added to the filter in the receiver, are between them paying good dividends in the way of DX.

H. A. Mead (Long Eaton) uses an HAC one-valver—a long time now since we heard from someone using one of this once ubiquitous breed! He is finding BC stations but at the moment is in some difficulty locating the amateur bands on the general coverage coils—this is always a bit of a problem, exacerbated by the swing to SSB on the phone bands. The best way to do it is to work with the set *just* oscillating, as for CW—not too much, or you will block the Rx—and tune very slowly over the SSB signal until it resolves. However, one would expect this method may be quite tricky until you have the knack of it, especially on the big boys.

* * *

The making of an attenuator is the interest for *K. Kyezor (Perivale)*; a suitable one can be found in the 1973 *ARRL Handbook*, at pages 263-264, with pictures which make the layout pretty obvious. For the U.K. use the DEF-5115 standard resistors, such as the *Electrosil* TR4 type, and instead of UHF connectors, for general receiving ordinary Belling-Lee type TV connectors are good. Carbon composition resistors are usually too noisy and not stable enough with age as to their values to be much use in a good attenuator design.

Another little hiccup in the interpretation of the HPX rules comes to light in the letter from *J. Blake (Aylesbury)* who thought the 200 starting score was a *credit* of 200, to which he could add his own hearings! *Cor!* No, sir, you have to hear 200 prefixes in order to qualify for a beginning in the stable. This again is not by any means the first time this mistake has come to light, so reader Blake is in good company!

W. Davies (Caernarvon) has not been listening long, but already the bug has bitten him, through his CR-100. So far, he complains, W's have been few and far between, and not very strong—that is partly at least a matter of getting on twenty metres at the right time, and of having

a suitable aerial system. The VK/ZL stations are often best in the mornings, from around 0730 GMT onwards, with W's coming in from about noon-ish and on through the rest of the day.

S. W. Osborne (Nottingham) has a *Sharps Multi-Band* receiver, coupled to a coax-fed aerial, drawing of which is enclosed in his letter. We would feel this aerial is not doing the receiver justice, and so we have advised him on a possible alternative way of attacking the problem, and suggested, as we suggest to every lone hand, that joining a Club will help to solve all sorts of similar problems, as well as giving a social interest to the hobby.

G. Richards (Aberdeen) is in fact licensed, but spends his time listening to the CW end of the band—maybe a TVI victim?—and his FR-50B came up with a pretty collection of keyed signals for the Ladder. Odd that he failed to mention his callsign!

From Birmingham, we have the *Sharred* brothers, David and Stanley. To take David first, he has been an SWL for several months and the rig is CR-100 into a Vee fed at the centre. The alternative receiver is a CR-150, for whichever brother has been dispossessed of the Marconi Rx. Stanley echoes the comments of G8HSZ and reckons the two receivers cost them a total of twelve pounds, plus a mains-driven Class-D wavemeter for a fiver, which between them have given him many hours of pleasure.

Improving conditions on 28 and 21 MHz are noted by S. Eldridge (Crawley) who has a folded dipole for this part of the spectrum—it can be adjusted to whichever band is wanted by removing the end sections and changing the position of the shorting links at the ends of the fold. A good idea this, even though old J.C. only goes out into the garden when the aerial has actually fallen down, and then only to supervise the members of the family deputed to effect repairs!

B. Thomas (Pontefract) writes to send in a score, and in addition keeps father, L. Thomas (Ferryfyston) in the lists with a *nil* report for this time.

Although G. George (Woodmancote) has heard most of his DX on Twenty, he does not neglect the other bands—indeed he now has a converter for two metres and a six-element beam to feed it. Incidentally Gareth is the youngest lad in for R.A.E. at the North Gloucester Tech, just 14 years old.

The bands are bucking up a bit now, says seasoned DX hound A. Glass (Plymouth). Bert recently went in for a bit of variety in the shack, by way of a change of receiver to the JR-599, which he rates as being quite an impressive Rx.

* * *

Although he is still awaiting his radar certificate result, J. Cowan (Rochford) has been trying round for a sea-going job. Cunard wouldn't take him without the radar result in his pocket; he then went to another company and was failed on his medical, but, praise be, he stuck at it, and was passed fit and accepted by Marconi Marine; so by the time this comes to be read John will be listening to a different kind of DX and earning a living thereby.

The usual long and interesting account of his doings comes in from H. M. Graham (Harefield) who always

HPX LADDER

(All-Time Post War)

SWL	PREFIXES	SWL	PREFIXES
PHONE ONLY		PHONE ONLY	
W. Bingham (Carrickfergus)	1463	J. Gravell (Burry Port)	748
R. Shilcock (Lye)	1428	R. H. McVey	(Weston-super-Mare) 745
T. Rootsey (Ilford)	1405	C. K. Verstage (Old Basing)	709
S. Foster (Lincoln)	1345	L. Thomas (Castleford)	674
K. Kyezor (Perivale)	1253	H. A. Londesborough	(Swanland) 660
J. Fitzgerald	(Gt. Missenden) 1169	Mrs. J. Jane (East Looe)	604
A. W. Nielson (Glasgow)	1139	S. Eldridge (Crawley)	591
R. Carter (Blackburn)	1110	J. R. Cowan (Rochford)	591
L. A. S. Poole	(London, N.21) 1090	P. Barker (Sunderland)	587
H. Alford	(Burnham-on-Sea) 1045	C. L. Lee (Ilford)	580
B. Hughes (Worcester)	973	K. A. Whiteley	(Castleford) 576
M. J. Quintin	(Wotton-u-Edge) 948	L. Craven (Alvechurch)	553
G. W. Raven	(London, S.E.13) 921	M. Kitchener (Hitchin)	533
J. H. Sparkes (Trowbridge)	918	G. Lucas (Kennoway, Fife)	528
C. Henderson (Beckenham)	873	R. Smye (Shrewsbury)	526
A. West (Herne Hill)	870	M. Smith (Matamata)	503
N. Henbrey (Northiam)	856	CW ONLY	
N. Askew (Coventry)	841	A. Glass (Plymouth)	977
A. R. Holland (Malvern)	818	T. Rootsey (Ilford)	723
P. C. Jane (East Looe)	806	G. Proud (Letterston)	693
W. B. Taunton (Meopham)	796	W. B. Taunton (Meopham)	656
H. M. Graham (Harefield)	791	C. Henderson (Beckenham)	617
E. W. Robinson	(Bury St. Edmunds) 780	H. A. Londesborough	(Swanland) 519
A. Judge (Bishops Cleeve)	770	W. Hutchinson	(Hornchurch) 276
B. Thomas (Pontefract)	758	S. Sharred (Birmingham)	263
E. Parker (Hove)	756	G. Richards (Aberdeen)	262
M. Cuckoo (Herne Bay)	752	A. W. McNeill (Oswestry)	218
		S. J. Proud (Letterston)	201

Starting score 500 for Phone, 200 for CW. Listings include only recent claims. Rules for HPX—see p.43, March issue.

For HPX Rules, see p.43, March

ANNUAL HPX LADDER

First Listing for 1974

SWL	PREFIXES	SWL	PREFIXES
PHONE ONLY		PHONE ONLY	
D. Sharred (Birmingham)	356	S. Sharred (Birmingham)	231
J. Bell (Hampstead)	327	R. C. Woolley (Ashbourne)	225
G. F. Gullis	(Ogbourne St. George) 300	S. Lawrence	(Market Harborough) 222
B. F. Hughes (Worcester)	291	W. McFaul (Londonderry)	211
M. Rodgers (Harwood)	263	G. George (Woodmancote)	203

Starting score 200, in accordance with HPX Rules. All prefixes on this list to be heard in 1974. When a score of 500 is reached transfer to the All-Time Table will follow.

analyses the bands over the preceding period. For this time, Maurice notes three openings on Ten, only one of which was of a really DX'y nature, and the latter were North/South and lasted about a quarter of an hour—as is often the case when ten metres is in the doldrums. Things have been better on Fifteen, although even here the majority of the signals such as Africa and South America, have been on the North-South axis. Most of the DX was found, as one would expect, on Twenty, although that band has usually been well-filled with Italians who have to be peeled off like orange-skin

before one comes to the interesting stuff beneath. Not much was heard on Forty, a band which one suspects Maurice is not really keen on, but on Eighty DX was found both late at night and in early-morning sessions.

Effects of Sunspots

Since H. M. Graham's results bring it out so, this is perhaps a good time to look into the question of directional effect due to ionisation in the ionosphere. Most readers will be aware that the ionospheric ionisation is in some way connected with sunspots, and that at a sunspot minimum the ionisation is *less*, and maximum usable frequencies *lower*. However, when one considers a band which by chance is near to but below the MUF (Maximum Usable Frequency) then that band will normally be open to places where the path is all in daylight; clearly this means that as far as East-West signals are concerned, whether a path is in daylight or not is largely a function of the time and changes minute by minute; however over a North-South route all the path is in daylight or all in darkness, so propagation would be expected for most of the day. Why then does the band usually open up first in a North-South direction as MUF rises above it? The answer will be found in the charts of MUF over given paths, when it will be found that the MUF is higher in a North-South direction and thus it is possible that a band can be open in that direction but not in others where the frequency is still above the MUF for that particular direction. Grossly oversimplifying things, one could say that, basically, the sun's emanations are hitting the ionosphere at a steeper angle near the equator than at our sort of latitude, and so cause heavier ionisation, although the response of the F-Layer particularly is often obscured by other effects. One of the more interesting is the tendency for signals to peak on any band that is open, at the time of twilight or dawn at one end of the path, an effect for which this writer has not seen a firm explanation as yet. At the present time, sunspot activity is relatively low and is not expected to peak again till the 1980's—when again the 10-metre band should be open consistently for world-wide DX.

* * *

Returning to our muttons, a letter comes in from *R. H. McVey (Weston-super-Mare)* who has been doing a bit of analysis of his first year of listening and finds that in that period he heard a total of no less than 716 prefixes, which sounds pretty good. Of course, for any individual the possible score in a year is very much a personal thing, depending on how many hours can be spent at the receiver, and how one's operating times are spread out over the day at times when different paths are open—*not* least, of course, it will depend on just how the individual defines "hearing a signal," whether this is considered to be just a matter of picking out the call in a welter of QRM or whether, as does the writer, logging a station is regarded as being the ability to copy full QSO details from him, as an absolute minimum.

A long list with 576 prefixes from *K. A. Whiteley (Castleford)*, very nicely set out for an entry into the All-Time, but with no comments whatever to accompany his list! We must therefore just imagine what K.A.W. uses to collect such a good starting score.

The HF bands were still behaving pretty poorly. says *H. Alford (Burnham-on-Sea)* with the result that his new prefixes turned out to be all from the Americas, with the lone exception of VQ9/D.

W. Hutchinson (Hornchurch) scrounged around and built up from junk a power supply for his BC-221 frequency meter—the transformer actually came from a rubbish tip and was covered in rust, but proved to be, after a preliminary warming-through in the domestic oven, a good one. On a different tack, a spot of bother with the receiver was completely cured by the changing of the frequency-changer valve.

Quite a set-up has *P. Barker (Sunderland)* who runs a Sommerkamp FR-DX500, a Trio JR-310, a Sony TFM-1600 and a home-brew Slow-Scan TV Monitor, around which most of the interest currently revolves. As a new project, there is another SS/TV Monitor being thought about, this one to be entirely solid-state apart from the CRT.

R. Andrews (Barry) wonders who or what the prefix CQ6 is, in the person of CQ6LF heard during the CQ WW WPX contest. A moments look at the Prefix List indicates this to be from CR6, Angola.

'Way back last year, *P. Davies* queried the ZM prefix, and now *M. Smith (Matamata, New Zealand)* rushes to their defence—the ZM prefix was used during the Commonwealth Games by the ZL stations.

Some oddball ones are noted by *R. C. Woolley (Ashbourne, Derbyshire)*, the first being a thing which signed "C2A5DB," heard calling CQ on 14-22 MHz. Heaven only knows what significance this had—the only sure thing would seem to be its piratical nature! K4DI /Portable PYQ raises an interesting problem; it is all but certain that this was a misreading of the *suffix*, K4DI being a genuine call as such—could it have been K4DI/PY2 in fact, one wonders? Anyway, neither of these can stay in the list without clarification, and another, W2NUT/Portable 1, comes out as a duplication of W1, leaving 225 to go into the Table.

S. Lawrence (Market Harborough) has his entry for the Table, at a claimed score of 222 since January 1.

J. Bell (Hampstead) sent in two letters; in the later one John comments that 14 and 21 MHz are both picking up a little, but, in the earlier letter, he has to admit to only ever having heard four stations on Ten! Not to worry, this is a pretty normal state of things for Ten at this period in the cycle unless you can listen daily around the optimum times and also at others to pick up the openings both to DX and by VHF propagation modes. Anyway, a signal generator will soon prove the receiver out!

For *J. H. Sparkes (Trowbridge)* by far the most interesting item during the period was the emergence of XV5AC, at enormous strength and at a time when other signals from the Far East were notable by their absence.

An entry of 300 prefixes, put in by *G. F. Gullis (Ogbourne St. George)*, was collected on an FR-50B connected to 150 feet of wire at a height of twenty feet.

We almost thought we had lost *A. W. Nielson (Glasgow)* but he surfaced again this time. The move of QTH has only taken him a couple of hundred yards, but it has brought the shack down to the ground level, so the rudimentary aerial which did so well at the old

place has proven a broken reed at the new—and the pre-occupations involved with moving home have, for the moment at least, prevented anything being done about it. However, A.W.N. is the only survivor from the original first-ever HPX list, and we have no doubt that he will not, after fourteen years, drop out for want of a bit of wire! (Read that again and you will realise it is quite a record).

B. F. Hughes (Worcester) is one of those who wanted to stay in the Annual Table after reaching 500; his 1973 final total was in fact 521 prefixes. The point here is that the Annual Table was intended for the “new boys” to compete on something like level terms—by the time a chap reaches the 500-prefixes mark we reckon he is able to compete technically on more even terms in the All-Time list, against the experts with totals of 1000 or more in the log. It seems a bit unreasonable to ask a chap who is already well up the All-Time to compete on level terms in the Annual Table against those who are tyros at the art-and-craft of listening and who may not have the better equipment to which the experts have graduated.

Those garbled call-signs again! This time it is *G. Thompson (Birmingham)* who raises the eternal moan on this score; and George adds a new dimension to it by pointing out that some operators, apart from gabbling the call, in their haste then go over to receive before they have finished speaking the call! True enough, a nuisance to transmitting stations as well as SWL's. On a different tack, a recent opening on Two Metres gave G.T. himself a lift—he was listening round when he heard someone say “the band is opening up,” so he tuned across Two and found an HB9, followed by an assortment of F's, DL/DK stations and even an OE, then hearing that someone had also collected an EA. Perhaps this is the biggest thrill in VHF—stumbling across, by sheer good fortune, a major opening and hearing several new countries, particularly from a QTH so well into the Midlands.

W. McFaul (Londonderry) has been away from the receiver, reason being his constructional task of the moment which is a digital frequency counter—a project which was bedevilled by minor snags such as a dud IC holder, and a bad indicator tube, not to mention the inevitable long waits for components to arrive. Incidentally, to put this to use on the receiver, one has to take samples of the first, second (if there is one) and so on mixer oscillators and the BFO, and mix these to give a signal out on the receiver frequency which can be fed to the counter to give direct readout as one swings over a band.

Although *R. Holland (Malvern)* does not spend a great time on the air he does set himself “targets” to add to his listening pleasure, and one which he achieved during 1973 was to hear one hundred countries. The next one will be to achieve the thousand prefixes. To do this, the rig will be the same old favourite Trio JR-310 with a sloping 7 MHz dipole N-S. As for 1974, so far it had been mainly the delights of 144 MHz, which of course as yet has meant a shortage of prefixes.

Odd Points

One of the odder uses of a BC-221 or Class D wavemeter is as a retriever of lost stations. If you net the

wavemeter on to the incoming signal and then flip it to “off,” and then one loses the wanted station under a load of QRM, it is but instinctive to twiddle the tuning a bit to see if the chap has QSY'ed out of the rumpus. The chances are that he hasn't, and if one then switches the wavemeter back on, one can net the receiver to the meter and so be sure of coming back *precisely* to the frequency where the wanted station was first heard. Another use is as a BFO for resolving SSB on a receiver with no BFO—just net the wavemeter on to the wanted signal and then slowly adjust the wavemeter until the wanted signal resolves; the coupling between the wavemeter and the receiver should be set to give best reception by moving them nearer or further apart. A similar trick can be worked by using the local oscillator of another receiver to enable a couple of transistor portables to function as a SSB receiver.

On the vexed question of QSL's and the reporting on amateurs some remarks are possibly in order. In general, working through the QSL Bureau system, given time, one can expect a return of around 66% if the SWL reports are useful. If one QSL's direct, with s.a.e.'s or IRC's, the report should still be made a useful one as far as possible. In this context an s.a.e., to be useful must have enough stamps of the local (*not* the British) currency to enable the DX station to pop your card straight into the post. It cannot be sufficiently emphasised that to send, say, a VK, an s.a.e. bearing British stamps is a complete waste of time, as the stamps are meaningless in the country where the letter is being posted, VK in our example. If you do decide to use the Bureau system, yet your card off as quickly as you can after its completion—it's not fair to blame the QSL Bureau for poor service if you sit on the cards for months before giving the Bureau a chance to operate!

Perhaps we can conclude on a slightly more personal note. Your old J.C. gets quite a lot of letters, as will be realised. In general all the correspondence is answered through this piece. We do *not* undertake to correspond with readers individually—if we did, there would be no time to write “SWL”!

Conclusion

We have come to the end of our allotted space, so it remains just to say that all the entries for the Ladders have been taken in if they arrived before this copy went to post; we should perhaps be back to normal by the next “SWL,” in July issue, for which the deadline will be May 23, addressed as always to “SWL,” SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ.

Good luck to all who will be taking the R.A.E. on May 16. Remember, if you know the stuff, it is a straightforward Exam., so don't let yourself get flustered. Write tidily, and draw your diagrams clearly—don't try to be too clever by writing more than the Examiner wants to know, which is that you understand the question and can answer it.

Publications for the SWL, obtainable from us, on matters touched upon in this month's article, are: *Sun, Earth and Radio* (92p); the *DX Zone Map*, with the complete *Prefix List* (£1.20); and *Guide to Amateur Radio* (90p). Prices quoted are post free, obtainable from stock, of our Publications Dept., Short Wave Magazine, Ltd., 55 Victoria Street, London, SW1H 0HF.

Aurora

THE auroral activity on March 16 seems to have been quite widespread in the Midlands and the North, but the effect was short-lived and weak in the South for most of the time. Starting time seems to have been around 1630z until about 1930z with no repeat phase. An interesting fact about this particular manifestation was that optimum beam headings varied from roughly Northeast at the start right round to Northwest at the end. There also appeared to be area-to-area working in that DL7 in Berlin were heard working OH and little else. It has been reported that auroral effects were observed on 432 MHz—a most unusual occurrence. Here are a few extracts from reports.

From GM8FFX (Aberdeen): Worked SM, DL, PA, G and GW. No second phase observed. Scottish stations active were: GM8GHV, GM3ZXE, GM3ZBE and himself, all on SSB, with GM3EOJ, GM3ZWO and GM3UAG on CW. *From G3OHH (Mow Cop, Staffs.):* Worked SM, OZ, DJ, GM and GW. Beam heading veered from North-east to NNE. After 1800z only G/GM stations were heard. He noted that GB3SU on 4m. was also auroral.

From GW3ZTH (Bridgend, Glam.): Alerted to the possibility of an aurora by GW3NJW, who had it on the phone from DL7QY, and passed the info on to several other GW's. (There's co-operation for you!) First signs of *Ar* activity appeared at 1630z and disappeared at 1900z. Beam heading was NNE, but GW3NNF found that optimum towards the end of the phase was due West. (This also reported by G3LTF.) Surprisingly though, Joe worked more, and better, DX on SSB than CW, and noted that both GM8FFX and GM8DMZ sounded nearly T9 on this mode. He worked G, GM, GI and GW but heard no Continentals at all.

From GW8FOL (Anglesey): Worked mostly into GM with a few Northern G stations. Unexpected contact was with GC8AAZ (Jersey). Not often that an aurora affects two-metre propagation as far South as that. Beam heading again varied from NE to nearly due West at the end. *From GW3NNF (Anglesey):* Worked

VHF BANDS

A. H. DORMER—G3DAH

a string of G, GM, SM and PA. Good DX was G8AGU at 5 & 6A on SSB. His beam heading went round as far as 230°!

From G3NHE (Sheffield): Worked SM, OZ, GM, GI and GW between 1737z and 1904z. G13SJ still being copied at 1920z. Optimum beam heading slightly East of North all the time. Signals from GW and GM very strong from the first hour or so, but tailed off rapidly towards the end.

From G8GXE (Stoke Poges, Bucks.): Beam heading NNE and noted *Ar* signals from several U.K. stations as echoes after receipt of the direct path signal.

Contests

Results: The January 70 MHz Fixed station contest was won, one almost said as usual, by G3OHH in Mow Cop, who had a short lead over G3NHE of Sheffield. In spite of bad weather and poorish propagation, the February 144 MHz CW Contest attracted over 30 entries, and was won by G3HCW/A, operated from 8 km South of Leeds, with G3MOT in Oxford as the runner-up.

Conditions for the January 342 MHz SSB event were good and most entrants were able to include Continental contacts with their claimed scores, the GW8DAD/P-DL6LM QSO of over 1,200 kms being of particular merit. Paul Widger, G8AGU/P, operating in Devon,

was a worthy winner of this event, scoring as he did nearly half as many points again as the runner-up, GW3UCB/P in Denbigh. Comments by readers, both directly over the air and by letter, favoured the inclusion of another such contest in the annual calendar, and with the steady growth in the number of operators using this transmission mode, there seems every justification for doing so.

The 1973/74 70 MHz Cumulatives were dogged by poor conditions for many of the sessions, but GW3BUC/P in Caernarvon, who must have wondered at times whether it was all worth the effort, took the lead comfortably, followed by G3VPF/P in Dorset. The deafening silence (if you will pardon the oxymoron) during many sessions would have deterred fainter hearts.

Popular as ever, perhaps even more popular with the increasing numbers of SSB and VFO operators, was the December 144 MHz Fixed station event which brought victory to G8FOT in Leicester with G8HBN in Surrey as runner-up. With 90 entries, this is surely one of the best supported contests, VHF/NFD excepted of course.

Reports: Down in the South-East corner, one wondered where all the activity was during the 432 MHz Open over March 30/31. Conditions perked up during the Saturday evening when ON and PA were available at good strength, but had dropped on Sunday morning with only G8AGU/P in Devon a consistently good signal. Things were obviously much better in the Midlands and the North, as witness the FB QSO's between GM3ZBE (Aberdeen) and ON, PA and F. Top scores heard were those of G3JQA/P (Staffs.) and G4CCC/P in Berkshire, both of whom were passing over 100 at the close. Someone *must* have been about!

Forthcoming Events: *May 4/5*, 144 MHz Open and SWL; *May 25*, 1296 MHz Open; and *May 26*, 432 MHz Open. The Region 1 VHF Contest (still organised by the Ainsdale Club) is scheduled for June 23, and the rules have been revised to give the single-operator station a better chance, to include a bonus for inter-Region contacts and offer an award for the best entry from outside the

Region. Full details from Norman Horrocks, G2CUZ, QTHR.

Twickenham Convention

The 20th International VHF Convention was held at Twickenham again this year with considerable success. The idea of having trade stands in one room and the lectures in the local school worked out very well for both visitors and exhibitors, giving as it did at least elbow room for both. Attendance was once again up, with some 700 present on the Saturday, of whom 200+ stayed on for the Dinner. The idea of extending the Convention over two days received mixed support, least coming from those from far afield, but there was still a fair gathering for the Sunday lectures.

As usual, Geoff Stone, G3FZL, reviewed the current VHF situation and was able to break the news that the proposal for the South Wales repeater had received official blessing and that the licence had been granted for the Crystal Palace repeater, although there were a few points to be cleared up before operation could commence. The "How to win Contests" talk by Peter Blair, G3LTF, and Willy McClintock, G3VPK, was full of practical advice from a pair who should know, and the amusing presentation by Graham Knight (GM8FFX) on /P working, profusely illustrated by tape recordings and personal paraphernalia, not only gave his listeners an insight into the meticulous preparations necessary for a successful portable operation, but stressed again a point which it behoves all of us to observe, the sad misuse of the calling channels for general nattering, at times using modulation modes for which such channels were never intended.

Two other lectures of general interest were those by Ron Ham, who outlined the portents which precede a tropo. opening, or an Aurora, on VHF and suggested ways of making use of them, and that of Paul Widger, G8AGU, who described in detail, with a useful hand-out, his award-winning 70 cm. SSB equipment.

The Fraser Shepherd Prize for microwave operation was awarded to Peter Blair, G3LTF, and the 1962 VHF Committee Cup to Chris Saveker, G8AMU, for a truly

splendid receiver with built-in converters for all the VHF bands. The Mitchell-Milling Trophy for 1973 went to the winners of the 144 MHz Portable contest, G3BA *et al*,

who operated from the Mull of Galloway for this event.

All told, another successful gathering, to be repeated next year at the same venue on April 12/13.

(over)

THREE BAND ANNUAL VHF TABLE

January to December, 1974

Station	FOUR METRES		TWO METRES		70 CENTIMETRES		TOTAL Points
	Counties	Countries	Counties	Countries	Counties	Countries	
G3NHE	20	2	46	15	35	9	127
G3DAH	19	2	39	13	25	7	105
G5DF	22	1	33	12	21	4	93
G3OHH	22	3	27	6	11	2	71
GD2HDZ	1	1	29	9	16	4	60
G8GHZ	—	—	43	7	7	1	58
G3FIJ	14	1	21	7	11	3	57
G4AEZ	2	1	33	6	11	2	55
G3XDY	—	—	43	8	1	2	54
G8ECO	—	—	35	6	10	2	53
G8FUI	—	—	35	8	5	2	50
G8GNE	—	—	30	8	7	2	47
GW3KGD	—	—	35	12	—	—	47
GW8FOL	—	—	35	11	—	—	46
GW8BXQ	—	—	32	11	1	1	45
G8FWB	—	—	39	6	—	—	45
G8DGR	—	—	31	3	1	1	36
GM3ZBE	—	—	19	5	3	6	33
G8FMK	—	—	—	—	29	2	31
G3FPK	—	—	29	2	—	—	31
G8GXE	—	—	24	4	1	1	30
G8HHI	—	—	24	4	—	—	28
G3XSK	—	—	21	6	—	—	27
G8HQQ	—	—	24	2	—	—	26
G8BBP	—	—	22	4	—	—	26
G8GPR	—	—	22	3	—	—	25
G8GGP	—	—	20	5	—	—	25
GW3XJQ	—	—	16	7	—	—	23
G18EWM	—	—	15	8	—	—	23
GW4BXE	—	—	14	9	—	—	23
G8BPJ	—	—	14	2	1	2	19
G8HQA	—	—	14	2	—	—	16

Note

Please refer to text for information about County scoring under the new Local Government re-organisation. The Table shows claims to date from January 1, 1974 and will close on December 31, 1974. Claims should be sent to "VHF Bands," SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ at monthly intervals.

GM3JFG/G8AGU EXPEDITION			
Two Metres	Mode	QRG	Time-BST
Mornings (except Sunday)	CW	144-05 MHz	0700-0715
Evenings	SSB	144-17 MHz	0715-0730
	SSB	144-17 MHz	1900-1930
	CW	144-05 MHz	1930-2000
	SSB	144-17 MHz	2000-2030
	CW	144-05 MHz	2030-2100
70 Centimetres			
Mornings (except Sunday)	CW/SSB	432-15 MHz	0730-0745
Evenings	CW/SSB/AM	432-15 MHz	2100-2300

Expeditions and Portable Operations

The Cambridge Wireless Society trip to the Channel Islands—they operated from Guernsey under the call GC6UW at the beginning of April—seems to have enjoyed mixed success. The best signals from them appeared to be on 4m., which were more easily copied than their 2m. transmissions. Very little was heard of them on 70 cm., although they were to have taken part in the 432 MHz contest at that time.

Bearing in mind previous exploits, a DX-expedition to GM which will be worth noting in the diary, is that organised by GM3JFG and G8AGU for the period (provisionally) of June 3-14. Actual dates will be confirmed in good time. They will have 2m. and 70 cm. gear with CW and SSB on both bands, and will operate both morning and evening sessions. Skeds, on 70 cm. particularly, can be arranged with Paul Widger, G8AGU, *QTHR*. Irrespective of the dates finally selected, and it looks as if the ones given above will be firm, the operating schedule is as tabulated above.

The Havering and District Amateur Radio Club operated GB3RUT/P from near Oakham in the now extinct county of Rutland at the end of March, and were putting out fine signals on all the VHF bands and on 23 cm. They took some fairly sophisticated gear with them.

On Four Metres: FT200, transverter and 4CX250B PA with a six-ele. wide spaced Yagi.

For Two Metres: FT-101 with the Europa transverter running 100 watts p.e.p. output to 8-ele. horizontal and vertical Yagis. They also had FM equipment for GB3PI working.

On Seventy Cms.: FT-200 with transverter and 4CX250B PA running 400 watts p.e.p. output to a 46-ele. Multibeam.

For 23 cms: Varactor tripler with 5 watts output, VXO controlled over the range 1296-1298 MHz. Reception was with a hybrid ring mixer and mosfet IF amplifier, and the antenna a 4ft. dish with "beer can" launcher. **Power Supplies:** Two 3 kW, one 850w. and one 250w. generators plus six 12v. batteries.

Final results showed 50 QSO's on 4m., with best DX into GM and GD, and 356 contacts on 2m., of which 320 were on SSB (which shows which way the oriental wind is blowing) including GM, GD, GW, ON, F and PA. On 70 cm., 40 contacts were made including GM, GD, GW, ON, F and PA, and on 23 cm. there were four 2-way contacts and one 1-way, with best DX as G4BYV in Norfolk at 75 miles, during which time signals peaked to 5 & 9 both ways.

Apart from the sunburn during the day and the frostbite during the night, it was an enjoyable time for all, both the members of the expedition and the many who logged Rutland thereby, for possibly the first, and certainly the last, time. Here was a venture carefully planned, with adequate preparation and first-class gear and operators, which was obviously going to get off the ground from the word "go," and the thanks of all those who worked them go to G4ALN, and his helpers.

Another successful /P operation was that mounted by the North Liverpool Radio Club, who operated as G3JQA/P from Leek in Staffordshire during the 432 MHz Open in March. The SSB gear was only finished 18 hours before the start of the contest and initially ran 10 watts, but an after-burner subsequently increased this to 50 watts. The two Multibeams at 1,600ft. on Meriton Low spread this signal over quite a distance, giving the 114 contacts, with the best DX as ON5EB. They will be operating from good sites on VHF/UHF during all

future contests.

From May onwards, GW8BXQ will be going portable in Cardiganshire at a 1,000ft. a.s.l. site. He will have 2m. SSB only, and will operate from Monday to Thursday evenings only. He is also willing to set up skeds at weekends for two metres and 70 cms. from the home QTH in Pembroke Dock; s.a.e. to him, *QTHR*.

G8HQA of 3, Cruckton Close, Shrewsbury, SY3 8KE, offers SSB skeds on 2m. from Llanberis in Caernarvonshire in the summer. He runs a "Liner 2" and a 5 ele. Yagi.

VHFCC Awards

Quite a few claims seem to have been held up during the disruption of the rail and power services recently and, following the odd spell of good conditions on the VHF bands, we now have eight to deal with this month. To reiterate the answer to a question which keeps cropping up in spite of repeated publication in this Column, if you change your callsign, for example from G8/3 to G4/3, you need *not* start collecting cards all over again. Simply note the two callsigns when submitting your claim. This also applies when forwarding entries for the Three-Band Annual VHF Tables. OK?

First claimant this month is Alan Scott, G4BYP (Liverpool) who gains Award No. 209—he has been on 2m. for about one year and has 103 cards from the 383 stations worked, exclusively on NBFM. He runs an IC-21 with external VFO, which is followed by a *Heathkit* HA-202 amplifier feeding an 8/8 slot at 30ft. Best DX to date was with F9NL during the January lift, who gave Alan 5 & 9 from the Pyrenees. Nice going!

Richard Phipps, G8HSX (Northampton) for Award No. 210, has been active on 2m. since August, 1973 with a Pye Vanguard running about 8 watts to the 8-ele. Yagi at 30ft. To this he had added a "Liner-2" and most of his DX was worked with this gear in conjunction with the EA-12 Rx. He is moving QTH to Hinckley, Leicestershire shortly and hopes to be active with the call G4DIC from there.

G2HDT is Ted Crouch of Burton-on-Trent, and Award No. 211 goes

to him. He has obviously been on Two for some considerable time since he runs a BC-625A Tx modified to the standard set by G2AO in the July, 1951, issue of SHORT WAVE MAGAZINE. This gives him 15 watts input to an 832. The Rx is now an SX-130, although this does not behave quite as well as an IF strip as the older S.640. The home-constructed converter uses a 6BZ7 cascade in the front end; aerial is a 4-ele. Quad which gives superior results compared with the 4/4 slot which was used for many years. The QTH is badly screened to the South, but Ted does much of his operating on the key, and this gives him a better chance when there is a bit of a lift about.

From Lamberhurst in Kent, Mervyn Stanton, G4CCQ, puts in a claim for 2m. working since August, 1972 (when his call was G8GNH) and gains thereby Award No. 212. His station is mostly home-built, with an AM/CW Tx running 17 watts to a QQV03-20A. The Nuvistor converter feeds an IF signal of 2-4 MHz into the IF strip which is equipped with a product detector and FM discriminator. When the occasion demands, a QQV06-40A PA is available at 60 watts of CW to feed the 6-ele. beam, and SM has been worked as the best DX from a poorish site using this combination.

Award No. 213 goes to Reg Vincent, G8GXA (Hoddesdon, Herts.). He runs 35 watts of AM/FM, VFO or xtal controlled, to a 4-ele. beam at 35ft. The Rx is a Telford TC7 with built-in converter. The QTH in the Lea Valley is surrounded by higher ground and Reg hopes that the 10-ele. to be installed shortly on the new mast will help. If enthusiasm has anything to do with it, he will press on, poor QTH or no, since he has been listening on 2m. since 1948, and doesn't seem to have got bored with it yet. He notes that many of the callsigns which he logged in those early days are still to be heard on the band. It's a curious thing that VHF activity seems to have a cyclic character. One misses a particular callsign and then it suddenly pops up again on the band, in some cases after an interval of years.

The Galaxy-5 and Europa transmitter, plus a "Liner-2" have got Stephen Purser, G8GHZ (Northamp-

ton) most of the contacts for Award No. 214, although he also runs AM using an FR-50B, a Wier converter and a Vanguard. The antenna is an 8-ele. at 22ft., supplemented by a turnstile at 25ft.

The callsign G3NFA must be familiar to many on 2m. It belongs to David Johnston (Carshalton, Surrey) and his Award No. 215 confirms a claim which contains many well-known calls from all over the country, and that without the use of high power, the QQV03-20A plate-and-screen modulated at 10-15 watts (according to the available power supplies) having done the trick. The xtal controlled converter feeds an R.1475 and is itself fed from a 5-ele. Yagi in the loft. Dave is also QRV on 4m., is working towards VHFCC on that band, has just completed the converter for 70 cm. and is busy on the construction of the Tx. We'll have you on the Annual Tables yet!

Finally, we come to David Richardson, G8GED (West Ealing) who receives Award No. 216. He started operation on 2m. in May, 1973 using home-built gear, Tx being 12 watts to a '320A operating as a push-push doubler/PA, an FET converter, the Lafayette HA-230 and a halo at 60ft. a.g.l. and 95ft. a.s.l. The halo seems to perform very well and has yielded contacts as far afield as GW, ON and PA. The rig has changed but little over the months, the major alterations being the addition of a VXO which gives frequency agility and an NBFM facility, and a 6-ele. Yagi at 55ft. A varactor has been built for 70 cm., and this feeds a half-wave dipole at 60ft. and with just one watt output David has contacted Wiltshire.

That's the lot for this month. There are a few more claims in, but these will be dealt with next time.

Three-Band Tables

The Local Government reorganisation, which has resulted in the creation of some new counties and the disappearance of others, presents a new situation *vis-à-vis* the Three-Band Annual VHF Tables. The choice is threefold. Ignore the new arrangements for the remainder of this year and start afresh in 1975, or recognise the new counties and accept claims for them in addition to any contacts already made within

TWENTY-THREE CENTIMETRES

ALL-TIME TABLE

Station	Counties	Countries	Total
G8ARM	20	2	22
G3EHM	14	2	16
G4ALN	10	3	13
G8AOD	11	1	12
G8FMK	4	1	5
G5DF	3	1	4

the old framework, or make the adjustment retrospective and say that contacts with entities which have disappeared under the new arrangement are no longer acceptable for the Tables—this, it is recognised, would unfairly penalise some operators.

An added complication is that, until the new *Call Book* appears and till maps showing the new county boundaries become generally available, there may be difficulty in determining where a contact is located, particularly during contests when time is an important factor. It has been decided, therefore, that the Tables should continue to be used on claims under the *old* county organisation until December 31 this year and on the new from Jan. 1, 1975.

While the purists may object to this approach, from a practical point of view it is a transitory and uncomplicated solution which, it is hoped, will meet with general approval.

News Items

23 Centimetres

The most recent entrant for the 23 cm. All Time Table is G3EHM (Stoke-on-Trent). A 4CX250B on 70 cm. drives a 3CX100A5 tripler, which in turn drives a pair of 3CX100A5's in grounded-grid to 150 watts output on 1296 MHz. Ken normally runs AM with this set-up, but can also key it when required. The main antenna is a 4ft. dish at 50ft. but he has also constructed a Quad helix, consisting of four 12-turn helices in phase, for comparison purposes. The Rx consists of a BFR90 RF amplifier feeding a hybrid ring mixer using Hewlett-Packard Schottky barrier diodes into a transistor IF amplifier with a nominal IF of 25 MHz. Ken is on 70 cm. most evenings, 2200-2330 BST and would always

welcome a try-out on 23 cm.

70 Centimetres

This band has been productive of some good DX recently, particularly on April 9, when GM, ON, PA and DK were worked within 30 minutes at G3DAH. Although the strength of the Sutton Coldfield beacon should have indicated favourable propagation conditions, very few stations appeared on the band to take advantage of them.

GW8FOL has been off the band for a while, the very high winds having prevented him from getting the antennae back up after their annual overhaul. However, all is now well again, and he is offering 70 cm. contacts from Anglesey.

GW3ZTH (Bridgend) reports an increase in 70 cm. operation in South Wales, mostly AM/FM. He will shortly have 200 watts of SSB into a 4CX250B. He also reports that the recently established Glamorgan VHF/UHF Group is well off the ground and is even attracting visitors from Pembroke and Monmouth. Drop him a line, *QTHR*, if you are interested.

G3NHE (Sheffield) now has SSB on 70 cm.—low power at present, but enough to have raised PAØFWS. A linear amplifier is under construction. Martin runs a weekly sked on Mondays at 2100 BST on 432.33 MHz with G8FMK (Thame, Oxon.) and invites anyone interested to join in. One would like to see more of these skeds going. They help to stimulate activity and we can certainly do with a bit more of that! Another sked which operates on 432.15 MHz SSB on Fridays, Saturdays and Sundays at 2030z is that between G8AGU in South Molton, Devon, and GW8BXQ (Pembroke Dock). They usually contact initially on 144.23 MHz—give or take a bit to allow for QRM—and they QSY to 70 cm.

GM3ZBE in Aberdeen is now active with SSB on 70 cm. (with SSB on 4m. also) and with GM8DMZ and GM8BKE also using the mode, it should be possible to get a few more QSO's with GM from the South.

GD2HDZ now has 10-15 watts of SSB available, G3XDY of Grimsby has added a QQV03-20A linear to his set-up and G3BHW of Margate is now on with SSB and

a '320A—to be followed by a 4CX250B linear in due course.

Two Metres

The good tropo. opening to EU on March 22 has been commented upon by many. In the South, the favourable conditions persisted for most of the week and several fine G/GM contacts were made. G3OUF (Amersham) noted the presence of ducting at this time; he was receiving 5 & 9 reports from the Continent while more easterly stations were passing and getting 5 & 5 reports. Good to hear him back on the air again and running 200 watts p.e.p. to a 10-ele. at 70ft. to boot! Incidentally, David was able to observe the temperature inversion which produced such good propagation on March 31. He was flying to Dublin and noticed the fluctuation of the outside temperature gauge with increasing height. A quick look out of the window showed the haze nicely buttoned down at about 5,000ft. Now do you believe that you need good low angle radiation to work the DX?

Increased activity in the I.o.M. is reported by GD2HDX. The Club station, GD3FLH/P, and GD8EXI are both up on SSB in company with GD3FOC. GD4BIG is on 4m. CW.

Activity in EI seems to have dropped off a bit, but EI8EWM continues to fly the flag, and a newcomer, EI8BZ, near Dublin is radiating a good SSB signal.

At Carnforth, Lancs., April 8-10 was recorded by G4CZP (*ex-G8GPR*) as a period producing some excellent EU/DX. He was able to work into PA and DK and had a particularly pleasing QSO with PAØBCA/M in CN65e, who was running 10 watts to crossed dipoles on the car.

GW3ZTH (Bridgend) continues with his meteor-shower experiments. On March 10, he ran skeds with DL7QY in Berlin and was surprised to find a rate of 50 per hour, which is quite high for the *Bootids* shower. Some of the bursts were as long as seven seconds, and signal strengths peaked to S8. It will be interesting to see what he has made of the skeds with SM7AED on March 31 and April 6 and what he will make with the SM7 during the shower due over May 23-26.

In a recent issue of the *Magazine*

it was noted that G8HSZ had passed the R.A.E. at the age of 51. We now learn that G8HVS of Leigh-on-Sea, Essex was 60 when he passed it and is active on Two with an IC-21XT with external VFO. He recommends other "senior citizens" to have a go!

G8ECO (Camberley, Surrey) runs a weekly sked on 145.30 MHz at 1100 BST on Sundays with GW8BXQ, Pembroke, and listening for this activity could provide a good pointer to East/West conditions. They both run "Liner-2" and have achieved a success rate of about 60% over this 300 km path.

Four Metres

Both G3OHH (Mow Cop) and G3VPK (Witham, Essex) now have SSB on 4m. Up in Scotland, GM3WOJ continues to be well received in the South and he has been joined by GM3IVZ, Kirkcaldy.

The use of 70.2 MHz as the SSB calling channel now seems to have been generally accepted, and the activity on Sunday mornings is pleasingly high. The comments made from time to time about the use, or misuse, of a specific frequency for calling purposes on 2m. are equally applicable to this band.

Technical: Reference the article "SSB/Transverter for Four Metres" in the April issue, the split-stator capacitor VC2, for Fig. 2. (p.76) can be obtained from *Burns Electronics*. The ferrite ring type FX1597 referred to in the Table of Values for Fig. 1 (p.75) is in the *Henry's Radio* list for these items, address *Edgware Road, London, W.C.2*.

Stop Press: It is announced by the R.E.F. that another VHF transponding balloon, *Anjou IV*, is to be launched from Tours around 0700z on May 12. No other details available but it is assumed that the operating procedure would be as before.

Deadline

With things just about back to normal again after the recent industrial troubles, the closing dates for readers' letters can also be more realistic. **May 11** then is the deadline for the June issue, and your claims, views and news will be welcome at "VHF Bands," *SHORT WAVE MAGAZINE*, BUCKINGHAM, MK18 1RQ. 73 de G3DAH.

THE MONTH WITH THE CLUBS

By "Club Secretary"

(Deadline for June issue: May 10)

Address all reports for this feature to "Club Secretary", Short Wave Magazine, Buckingham, MK18 1RQ

NO doubt about it, Spring is in the mail as well as the air this time—talk of Field Days, Mobile Rallies, D/F Hunts and all the other outdoor activity peppers the News Letters and other mail. This is good; an extra activity of the Club to help attracting and holding the flow of new members is always needed. However, one must beware of overdoing it, one feels. There are some of us who have to "get our leave-chit signed" even to creep up into the shack, let alone slip out for a full evening meeting above the normal, particularly when, as at this time of year, wifely eyes are turned to thoughts of wallpaper, paint, or, worse, the weeds in the garden! However, if one can invent an excuse for taking the XYL and family along—a mobile picnic event for instance—the situation for the henpecked ones may be alleviated somewhat. This may raise a smile, but the writer has seen a student give up R.A.E. for no better reason than that his wife wanted him to go shopping with her at a time when he should be on his way to classes!

Changing gear to deal with the matter of the Club reports this time we will split the mail into one lot from the South, and another from the Midlands, North and Scotland, plus the usual small group who have no territorial affiliations. Let us look at the latter first.

Top of this pile is the latest issue of the R.A.I.B.C. *Radial*. This group, for twenty years, has looked after the interests of the blind and invalid folk who listen or transmit on the amateur bands. Apart from the full members, there are the "supporters" who are just that, and the "representatives" who take an active part in their local area, as and when the needs arise. And, of course, all classes of members get to read the admirable newsletter *Fadial* each month.

Next we have the newsletter of the **British Rail** group, whose members are all connected with the railway organisation or its ancillary parts; the group itself is associated with an international group of railwayman amateurs in many countries.

A.R.M.S. look after the mobileers; they have *Mobile News* at regular specified intervals, and such awards as WAC/Mobile and the Mobile Certainty Award (MCA) for confirmed contact with 100 countries or more using just the mobile rig. The latest one is in memory of the late Maurice Margolis, G3NMR, and is awarded annually to the amateur producing the three longest-distance

mobile-to-mobile contacts. These all seem to be tough enough to be worth going after, unlike so many of the "awards" one hears of these days.

If you play your Amateur Radio with the help of a teleprinter, B.A.R.T.G. is your scene. The Convention this year is again to be at Meopham Village Hall, on May 18—details p.727, February issue—with all sorts of interesting things going on. In addition, members receive the *Newsletter*, containing details on RTTY contests, technical material both at beginner and advanced level, and advertisements of direct interest to the RTTY types. One would feel that any RTTY buff should be a member.

North and West

Our first port of call is **Hereford**, where the venue is County Control, Civil Defence Headquarters, Gaol Street. For May 3, we see that the speaker is G4CNY, his topic being the Design and Construction of Aerials, while on May 11 there is a possible skittles match against Worcester club, at Hereford—you will need to ask the Secretary (*see* Panel) about this one; and on May 17 there is a club get-together, details of which are not, at the time of writing, finalised.

Every Friday evening at Sale Moor Community Centre, the **South Manchester** crowd have their formal meeting. May 3 is down for Radio Theory, Parts 9 and 10, with a D/F warm-up on the 10th. Please get there early for the AGM on May 17, they ask; and on May 17 you will be able to natter as much as you like. This leaves May 31, when the winner of the home-construction contest pays the penalty by being made the evening's sneaker. In addition to all this, the VHF chaps have regular sessions every Monday evening, at the Club shack, "Greeba," Shady Lane, Manchester 23. The gang are proposing to run several D/F events during the summer, and would care to meet any interested party—contact G3WFT, as Panel, over this point.

Thursdays at the British Legion club, 61 Micklegate, York is the place to find the **York** chaps. Although they assemble every Thursday, we understand their talks will be on May 9 and 23. In both cases, G3XFM is to be the speaker, his subjects being respectively the Workshop Practice and the Construction aspects of model engineering.

(over)

At **Cheltenham**, the RSGB group have May 2, at the Royal Crescent Hotel, Clarence Street, for a "unique and most interesting" lecture—"so much has never appeared in print; it's all his own work!" After such a build-up by the hon. secretary, what more can we add?

Although the main meeting at **Bury & Rossendale** is the second Tuesday in each month, the lads get together on an informal basis every Tuesday, at the Mosses Community Centre, Cecil Street, Bury. On May 14, they have what must be a major attraction for the members in the form of a lecture by Microwave Modules Ltd., entitled "Some Design Considerations at VHF-UHF." This letter from G8HQW updates the details given here in March, which we are given to understand were incorrect; he wishes us to apologise to anyone who may have been misled.

The **Mid-Warwickshire** group is based at 28 Hamilton Terrace, Leamington Spa, where they can be found on any Monday evening. An interesting outing occurs on May 6, when the lads will be visiting Rugby BR Power Signal Box; details on this one particularly from the Secretary—see Panel.

The Alford Hall, Manchester Road, is the Hq. for **Warrington** group. In addition to the regular weekly Tuesday-evening sessions, the Club will be putting on

GB3WF at the Warrington Festival on May 11, and on May 19 they will be involved with co-ordination with the Festival Sports Gala. During the next few months several visits are planned, mention being made in particular of Decca Navigator station and Calder Hall Nuclear power-station. The new session of the Club started on May 1.

For **Wirral** an interesting talk is down for May 1, when the subject will be "What to Listen For on the Amateur Bands and When." May 15, on the other hand will see a Surplus Gear Sale. Both are at the Club Hq., the Sports Centre, Grange Road West, Birkenhead.

Baden-Powell House, St. Nicholas Street, Radford Road is the home of the **Coventry** lads. On May 3 they have a slide show, while May 17 is a VHF Night and May 30 a Treasure Hunt. In between these we see that May 10 and 24 are down for Nights-on-the-Air.

A new Secretary writes in to let us know about the activities of the **Stowmarket** group. They assemble at the Adult Centre, Stowmarket High School, Gainsborough Road, on the first Monday in each month; for the May evening they have a tape-and-slide lecture.

A talk with possibilities appears in the **Solihull** syllabus on May 21, when the meeting will be shown how Copper Laminates are made, with a discussion on its

Names and Addresses of Club Secretaries reporting in this Issue :

ACTON, BRENTFORD & CHISWICK: W. G. Dyer, G3GEH, 188 Gunnersbury Avenue, Acton, London, W.3.
 A.R.M.S.: N. A. S. Fitch, G3FPK, 40 Eskdale Gardens, Purley, Surrey, CR2-1EZ.
 BRACKNELL: D. W. Sergeant, G3YMC, Solva, Tilehurst Lane, Binfield, Bracknell (26178), Berks., RG12-5JS.
 B.A.R.T.G.: D. Beattie, G3QZF, Mayerin, Churchway, Stone, Aylesbury, Bucks. (0296-74 354).
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 BURY & ROSSENDALE: C. Kirby, G8HQW, 2 St. Peter's Place, Haslingden, Rossendale (4915), Lancs.
 CHELTENHAM (RSGB): G. D. Lively, G3KII, 131 Mandaring Way, Wymans Brook, Cheltenham (34785), Glos.
 CHILTERN: F. S. G. Rose, G2DRT, 84 Cock Lane, High Wycombe, Bucks. (Penn 4240).
 CORNISH: H. Webster, G3XTF, Crandale, Gillyfields, Redruth (6905), Cornwall.
 COVENTRY: G. A. Whenham, G3TFA, 33 Chapel Street, Bishops Itchington, Warwickshire.
 CRAY VALLEY: P. F. Vella, G3WVP, 78 Hurst Road, Sidcup, Kent.
 CRYSTAL PALACE: G. M. C. Stone, G3FZL, 11 Liphook Crescent, London, SE23-3BN. (01-699 6940).
 DOVER: P. J. Pennington, G8DRS, 146 Elmsvale Road, Dover (20300), Kent, CT17-9PN.
 DUNSTABLE DOWNS: C. G. Powell, G8BPK, 1 Wenwell Close, Buckland Wharf, Aston Clinton, Aylesbury, Bucks.
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 ECHELFORD: A. J. M. Wenham, G3ZXA, 28 Pinewood, Sunbury-on-Thames, Middx. TW16-6SG.
 EDGWARE: A. J. Masson, G3PSP, 62 Coldharbour Lane, Bushey, Herts., WD2-3NY. (01-950 6827).
 FARNBOROUGH: R. C. Bagwell, G8ECO, 33 Frimley Green Road, Frimley, Camberley, Surrey.
 HEREFORD: S. Jesson, G4CNY, 181 Kings Acre Road, Hereford.
 HINCKLEY: M. Farr, G4CAJ, 23 Waterfall Way, Barwell, Leics., LE9-8EH.
 KENT COAST: L. Randall, G4ACQ, 5 Linden Road, Westgate, Kent. (Thanet 32789).
 MIDLAND: A. L. Walton, G3ZKQ, 243 Barnes Hill, Birmingham, B29-54J.
 MID-SUSSEX: J. Brooker, G3JMB, 20 Farnham Avenue, Hassocks, Sussex.

MID-WARWICKSHIRE: A. C. Outhwaite, G8GDY, 2 St. Annes Close, Leamington Spa, Warks.
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 NORTH DEVON: H. G. Hughes, G4CG, Crinnis, High Wall, Sticklepath, Barnstaple, Devon.
 NORTH KENT: R. Wells, G4ARQ, 12 Bullbank Road, Belvedere, Kent.
 OXFORD UNIVERSITY: D. D. Price, G4BIX, St. Edmunds Hall, Oxford.
 PLYMOUTH: C. Mitchell, G3UYS, Keechil Rumah, Green Lane, Yelverton (2986), Devon. PL20-6BW.
 R.A.I.B.C.: Mrs. F. Woolley, G3LWY, Woodclose, Penselwood, Wincanton, Somerset, BA9-8LT.
 REIGATE: F. H. Mundy, G3XSZ, 2 Conifer Close, Reigate (43130), Surrey.
 SILVERTHORN: C. J. Hoare, G4AJA, 41 Lynton Road, South Chingford, London, E4-9EA. (01-529 2282).
 SOLIHULL: L. G. Boswell, G4AEJ, 170 Kestrel Avenue, Yardley, Birmingham, B25-8QX.
 SOUTHGATE: J. Batchelor, G3XMV, 22 Faversham Avenue, Bush Hill Park, Enfield, Middx. (01-360 6537).
 SOUTH MANCHESTER: D. Holland, G3WFT, 7 Alcester Road, Sale, Cheshire, M33-3GW.
 STEVENAGE: C. Barber, G4BGP, 473 Canterbury Way, Stevenage, Herts., SG1-4EQ.
 STOWMARKET: K. J. Bertrand, 35 Curwen Road, Stowmarket, IP14-1JX, Suffolk.
 SUTTON & CHEAM: A. Keech, G4BOX, 26 St. Albans Road, Cheam, Sutton, Surrey.
 TORBAY: M. Yates, G3UIQ, Top Flat, 23 Waverley Road, Newton Abbot (3025), Devon.
 VERULAM: H. Young, G3YHY, 93 Leaford Crescent, Watford, Herts., WD2-5JQ.
 WARRINGTON: G. S. Reed, 4 Princess Avenue, Great Sankey, Warrington, Lancs.
 WEST KENT: S. E. Jones, G4BKG, 36A London Road, Southborough, Kent.
 WHITE ROSE: K. R. Robson, G3VTY, Flat 7, 34 Saint James Drive, Horsforth, Leeds.
 WIRRAL: F. Smith, G3YGL, 72 Church Road, Bebington.
 YEOVIL: D. L. McLean, G3NOF, 9 Cedar Grove, Yeovil, Somerset.
 YORK: K. R. Cass, G3WVO, 4 Heworth Village, York.

Top Table at the Lowestoft & District Amateur Radio Club annual dinner. Left to right, G8IJJ (treasurer), G4AJQ (secretary), G8DYO (chairman), Mrs. G8DYO and daughters, one of whom is working for the R.A.E.



use in Amateur Radio, including of course Printed Circuits. As usual, the venue is at the Manor House, High Street, Solihull.

Alternative Wednesdays are reserved in their diaries by the **Hinckley** members. For May, the dates are the 8th, for a discussion on the Mobile Rally; 12th, when the Rally itself takes place at Westfield Activity Centre, Westfield Road; and the 22nd. The Hq. address is not given, so those interested in visiting the Club should first contact G4CAJ (*see* Panel) for the details.

Midlands, South and West

Dover refer to themselves as a reformed group, and get together on the first and third Wednesday of each month, at Dover YMCA. Details of the programme can be found in Dover, Folkestone or Deal public libraries, or obtained by contact with G8DRS at the address and phone number given in the Address Panel.

One of our several contest-minded Clubs is **Cray Valley**—your conductor could hear them on Twenty in the *CQ WW WWPX* contest on March 31, registering far higher serial numbers than his own. This practical activity, using G3RCV, the Club call, is quite a feature, in addition to the usual sessions (at Eltham United Reformed Church Hall, Court Road, London, S.E.9) on May 2, when G3GVV will talk about the past and future of Amateur Radio, and May 16, which is a Natter Nite.

Torbay recently had as many as 136 people to sit down at their annual dinner—quite a number! Visitors are welcomed on Tuesday evenings at the Hq., Bath Lane (rear of 94 Belgrave Road), Torquay, and on Saturday May 25, when the formal meeting will be devoted to preparing for NFD and a Junk Sale.

May 7 and 21 are the dates for the **Plymouth** crowd, at their place in Virginia House Settlement, Palace Street, St. Andrews Cross. The former date will be a Film Night, and the latter an Open Evening.

Milton Keynes have a talk on Printed Circuit Boards

slated for their monthly meeting on May 13, at Wolverton Youth Club. They make a point of saying that visitors will be welcome.

All the details on the **West Kent** meetings on May 10 and May 24 are available from secretary, G4BKG, save the Hq. address, which is given as The Adult Education Centre, Monson Road, Tunbridge Wells.

Unfortunately, the **Echelford** newsletter we have on hand does not look as far forward as May, but nonetheless we can say that they get together on the second Monday and the last Thursday of each month, the venue being St. Martins Court, Kingston Crescent, Ashford, Middx.

For **North Devon** the big news is that they have succeeded in fixing up an R.A.E. class (numbers permitting of course) for next season at the North Devon College at Barnstaple. For the details, contact G4CG, who will be pleased at the same time to give you the dope on the group itself and its activities. As the meetings are all *chez* G4CG, *see* Panel, it would be only courteous to let him know if you purpose a visit to the Club, on May 8 or 22, on both of which evenings there will be a ragchew session.

* * *

One of the things the **Southgate** newsletter does *not* give us is the date of the next, May, meeting, nor yet the venue; however, our spies tell us they have Hq. at the Scout Hut, Wilson Street, and that the May meeting will in fact be a visit to the Transmitting station at Ongar. For the rest, we must refer you to G3XMV, as Panel.

The weekly meetings for **Dunstable Downs** are on Fridays, at Chews House, 77 High Street South, Dunstable. May 3, 17, and 31 are "between weeks" with W0NFMU talking about Amateur Radio in the U.S.A., on May 10; May 24, a Hints and Tips evening; and, for good measure, a D/F Hunt on May 12—quite a crowded month.

Pressing on, we come next to **Mid-Sussex**, whose

members can be found at Marle Place Further Education Centre, Leylands Road, Burgess Hill. May 9 is down for an informal, with no other sessions during May specifically noted in the Newsletter, albeit your scribe has it in his mind that they gather on alternate Thursdays.

It should be quite easy to locate the **Bracknell Hq.**, for it is at Coopers Hill Centre, next to Bracknell Railway station. Here they can be found on every Monday, with alternate weeks being devoted to Morse, both slow for the beginners and quicker for the dab-hands, the idea in view being to form a Contest Group.

Meetings are now resumed for the **Chiltern** chaps, at the Ernest Turner works at High Wycombe, and May 14 is down for the informal while the final details of the May 29 date are yet to be worked out at the time of writing.

It is May 9 and 23 for **Edgware**, the first one being set apart for G3TDR to talk about "Varicap Diodes in Practice," and the second devoted to NFD preparations. Both are at Watling Community Association, 145 Orange Hill Road, Edgware.

"A Lifetime of Radio," is what G3DIR looks back on for the benefit of the **Verulam** boys on May 15. This one is at the Market Hall, St. Albans, with visitors very welcome.

For May 2 a talk on Slow Scan TV by G3LPB should interest the **Cornish** group, at the SWEB Clubroom, Pool, Camborne. The RAEN members have in addition a separate meeting on May 5, at the Cornwall County Ambulance Training School, Gloweth, Truro, when a representative of that Service will explain the overall picture of requirements in a major disaster.

* * *

May 21 is just after the R.A.E., so the members of **Acton, Brentford & Chiswick** will use it to fill an evening by having a discussion about the questions in the paper. One wonders whether this is really tactful, as there will no doubt be members who will, after hearing the discussion, be *sure* they have put the wrong thing on their own answer-paper, and accordingly be depressed. If there are such, take heart—you never know what the result may be till you actually get the result through the letterbox; many a one who was sure he had done well has failed, and at least equal number who thought they had failed have in fact passed! The date for this discussion is May 21, and the Hq. is, as always, Chiswick Trades and Social Club, 66 High Road, Chiswick.

Crystal Palace members of or intending visitors to this grand old London Club, for many years now under the *aegis* of Geoff Stone, G3FZL, take note! The May meeting is down for May 11, one week earlier than usual, and on that date G3IIR will be talking about Loudspeakers and their application to public address systems. The Hq. is at Emmanuel Church Hall, Barry Road, London, S.E.22.

The second and fourth Thursdays in each month are the ones for **North Kent**, at the Congregational Church Hall, at Bexleyheath clocktower, the entrance being in Chapel Road. May 9 is the vital AGM date, and on the 23rd there will be a Junk Sale.

May 11 will see the annual dinner at **Farnborough**; in addition there are the usual sessions at the 8th Air Scouts Hut, Rectory Road, Farnborough; May 14 is

struck out in the list, and on May 22 G3OQB will talk about Network Analysis.

For **Stevenage** the dates are, May 2, when G8CAC will demonstrate his **Liner-2**, and May 19, when G4BGP will be talking about Transmission Lines, VHF aeriels, and decibels. Looking forward a little, the lads have been asked to put on a show at the Stevenage Festival.

Although we are told the Hq. address is at the Library in Cheam, we have no other details of the May doings of the **Sutton & Cheam** group at the time of writing, so we have to advise you to get in touch with G4BOX, Panel.

Changes to be noted in the dates for **Reigate**. The Natter Night is on the normal May 7, at the "Marquis of Granby," Hooley Lane, Redhill, but the formal meeting (which is a Surplus Equipment Sale) is on *Thursday* May 23, not the usual Tuesday. Incidentally, the secretary claims the sale is of Surplus Equipment because there is "no junk in Reigate!" Oh, well!

At **Silverthorn**, for various good reasons it has not been possible to cross the t's and dot the i's on the detailed programme at the time of their letter; however, they will be at Friday Hill House, Simmons Lane, on every Friday evening nonetheless, and waiting for visitors to show up.

The first Thursday of each month sees the **East Kent** lads foregather at the Westgate Hall, Canterbury; May 2 is an informal, plus NFD planning session. Then on May 10 they have a visit lined up to North Foreland Radio, GNF.

If you are at **Oxford University** you should be at least in touch with the University club. They get down to it by way of lectures and such every week, and in addition have an operational station available. Details should be obtained from G4BIX *see* Panel.

Every Thursday at the Youth Centre, 31 The Park, the **Yeovil** clan are in session. May 2 is the AGM; May 16 sees G3XFW talking about "RF Indicators and Wavemeters," and on May 23, the QRA Locator is worked over by G8AFA. Incidentally, the R.A.E. tutor is G3XFW, before each meeting starts.

Ramsgate is the centre from which the **Kent Coast** formation draws its membership, their meeting place being the R.A.F.A. Club, 19 Camden Road, Camden Square, Ramsgate. Here you can find them on May 7, bidding hard no doubt, at the club Junk Sale. Further details from G4ACQ, at the address in the Panel.

In Conclusion

With any degree of luck we should be back to near normal in time for the deadline of **May 10**. Letters should contain the details of the *June* goings-on, and be addressed, as usual, to Club Secretary, SHORT WAVE MAGAZINE, BUCKINGHAM, MK18 1RQ. 73.

Dates forward as deadlines for this feature can be taken as **June 7**, **July 5** and **August 9**, or earlier if possible, for issues dated the month following. We cannot guarantee that all material received by, or after, these dates can be taken in, though any such reports are always held over for the next issue.

Club reports received too late for this issue include Glenrothes East Lancs., Axe Vale and Wolverhampton. *Editor.*

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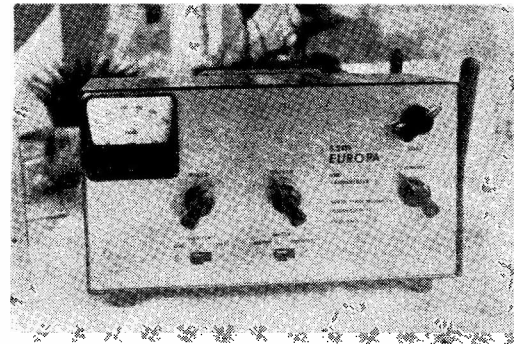
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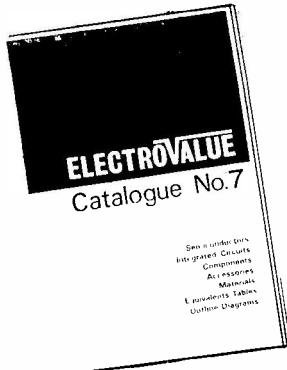


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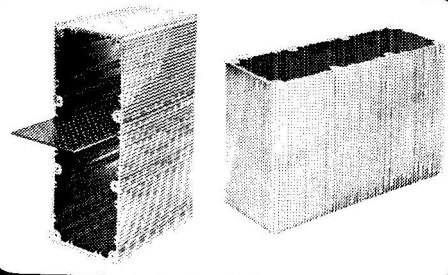
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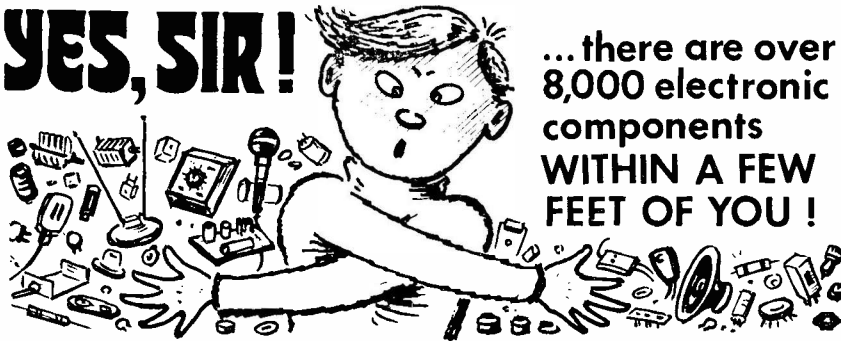
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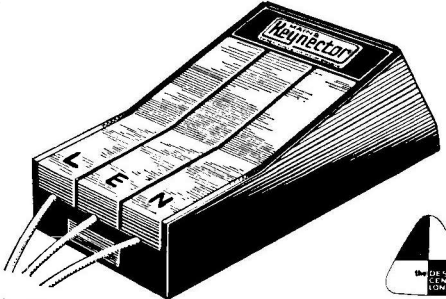
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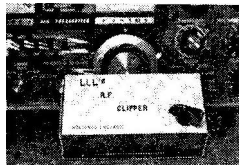
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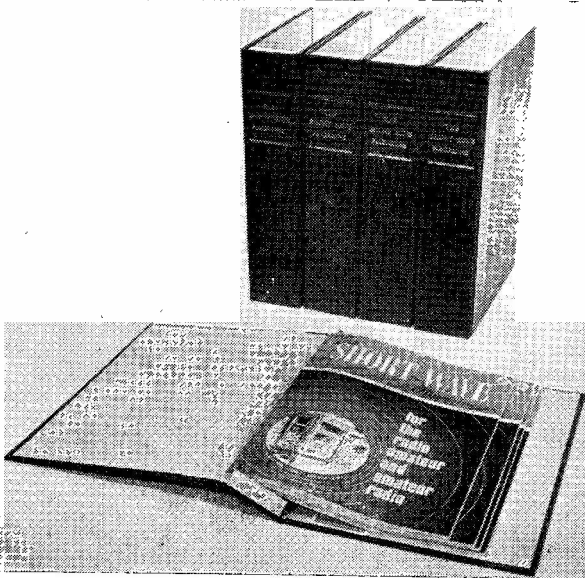
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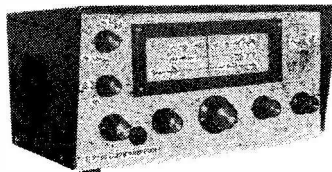
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