G3 FPK reviews the Microwave Modules MMC 50/28-S Six-Metre Converter

G3 ROO builds a Base Station Unit for the FT-29ØR
£245.00

A compact and lightweight 144MHz band power amp for FM/SSB handie.
Freq. band: 144MHz amateur band, Mode: FM, SSB, (CW), Supply voltage: DC 13.8V (neg. ground), 4A max, Output: 25W (10-30W), RF input: 1W (0.5-3W), In/Out connector: SO-239 (50 ohm), Built-in circuitry: COX, FM/SSB MODE select SW, Reverse polarity protection, Dimension: 100(W) x 30 (H) x 158(D)mm, Weight: 520g

£69.95

144MHz band power amp for FM hand-held with GaAsFET receive preamp. (FM/SSB select SW available on request)
Freq. band: 144MHz amateur band, Mode: FM, Output: 30W (16-35W), RF input: 3W (0.5-5W), Supply voltage: DC 13.8V (neg. ground), 4.5A max, Built-in circuitry: GaAsFET receive preamp, OUTPUT LEVEL LED indicator, Reverse DC power polarity protection, Dimension: 100(W) x 35(H) x 158(D)mm, Weight: 530g (Approx.)

£204.99

144MHz band all mode power amp with a low noise receive preamp. Dual RF drive of either 2W or 10W.
Freq. band: 144MHz amateur band, Mode: FM, SSB (CW & AM), Supply voltage: DC 13.8V (neg. ground), 18A max, Output: 110W (120W max), RF input: 2W/10W selectable, In/Out connector: M type (50 ohm), Built-in circuitry: COX, Mode switch, Receive preamp, Power meter, Reverse polarity protection, Dimension: 172(W) x 50(H) x 263(D)mm, Weight: 2.5Kg (Approx.)

£82.90

A compact and lightweight 430MHz band for 70cm portable transceiver.
Freq. band: 430-439.995MHz band, Mode: FM, SSB (CW & AM), Supply voltage: DC 13.8V (neg. ground), 5A max, Output: 20W (15-22W), RF input: 2W (0.5-3W), In/Out connector: M type (SO-239) (50 ohm), Built-in circuitry: COX, Output power select, Reverse polarity protection, Dimension: 100(W) x 30(H) x 158(D)mm, Weight: 540g

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T.B.A.

A compact 430MHz band linear amp for handle and portable radio with GaAsFET receive preamp.
Freq. band: 430MHz band, Mode: FM, SSB, CW, Supply voltage: DC 13.8V (neg. ground), RF input: 2W, Output: 30W, Built-in circuitry: GaAsFET receive preamp, OUTPUT LEVEL indicator, Reverse DC power polarity protection, Dimension: 100(W) x 35(H) x 170(D)mm

All prices including VAT & carriage

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Birmingham B8 1B6
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**APRIL, 1985**

**No. 498**

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THE SHORT WAVE MAGAZINE

51

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<td>Large ceramic Egg Insulators</td>
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<td>750ohm Twin Feeder - Light duty per metre</td>
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<td>300 ohm Twin Feeder</td>
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<td>550-800 ohm coax</td>
<td>£0.65 (20p)</td>
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<tr>
<td>750Ohm coax - Dia 5mm</td>
<td>£0.25 (10p)</td>
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<tr>
<td>750 ohm coax</td>
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<tr>
<td>4mm Polyester Guy Rope</td>
<td>£0.16 (10p)</td>
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<tr>
<td>50Mtrs 16 swg Hard drawn Copper Wire</td>
<td>£6.90 (10p)</td>
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### COAXIAL SWITCHES

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<tr>
<th>2 Way Welz N plug 19001AHz 1MHz</th>
<th>£10.20</th>
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<td>2 Way Welz 50239 1903MHz</td>
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<tr>
<td>2 Way Diecast S0239 1503N1Hz</td>
<td>£10.75</td>
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### GOODS NORMALLY DESPATCHED WITHIN 24 HRS. — PRICES CORRECT AT TIME OF GOING TO PRESS — E&OE
Why own a 1st Class Radio with a 2nd Class Sound?

May we suggest an answer?

Now for the first time, a new ingenious compact sound system allows you to hear weak signals like never before, sort out the rare ones and listen to quality like you have never heard from your receiver, handle talkie or scanner. Usually, accessory speakers are no more than 50 pence speakers in fifty pound boxes. Their efficiency, frequency response and distortion levels are minimal and since most of all of the new transceivers have less than one watt of audio, our ability to understand becomes very difficult.

The new SS-2 Heil Sound System contains two five watt amplifiers, a 3.5" woofer with a half pound magnet a 1.5" tweeter with a 12 dB per octave passive crossover network. The tweeter is crossed over at 1500 Hz, right where the response of the human ear starts to fall off and the huge woofer fills out the mid-range and low frequency response. No single cheap speaker can begin to give you this type of response.

The second five watt amplifier can be used to drive a second speaker enclosure and will be used in a dual diversity system using the Heil parametric equalization system which will be introduced very soon.

When most receivers are running at a comfortable listening level, their little one half watt amplifiers are being pushed into extreme distortion levels. The extended response, the added efficiency and additional output power of the SS2 will lower your noise floor, reduce noise and allow you to copy signals that formerly were impossible to hear.

Mobile optional with the new Heil Sound System is unbelievable. The 5 watts of output and the tweeter system really adds to the articulation factor making signals so much easier to copy. The system makes Hand Held receivers come alive!

The SS-2 measures 3 1/4" x 5" x 3 1/4". It weighs 2 lbs. and is housed in a high impact silver beige case. Power requirements are 12-13.8 volts D.C. at 400 M.A. A red L.E.D. is mounted on the front panel for power up indication. All input/output connections to the amplifier is made through a 5 pin DIN plug.

You can own this great new addition to your station for only £65.00 inclusive of VAT and carriage. We suggest that you hurry as there is probably someone calling you right now that your present speaker isn’t truly reproducing. Discover the world of high quality audio today!

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CM. HOWES COMMUNICATIONS

FUN TO BUILD KITS BY MAIL ORDER

Get more fun out of amateur radio with one of our easy to build kits. How about building yourself a station around our CTX transmitter and DcRx receiver kits for portable and holiday use during the summer?

AMATEURS kits come equipped with a good quality printed circuit board that is drilled and tinned and has the component locations screen printed on it for easy assembly. All board mounted components are included, as are full, clear, instructions. The kits are also available ready assembled. This is an important part of our quality control. Because we assemble the kit for sale ourselves, we are continually checking that there are no design or component problems with the kits. You can be confident that our designs will prove a success in your station.

CTX80 QRP CW TRANSMITTER FOR 80 METRES.
The CTX80 is proving to be very popular indeed. Read the review by G3VTT in the March issue of Shortwave Magazine. This straightforward CW transmitter will run up to about 15W RF output (the power is adjustable) and features key-click suppression and a five element low-pass output filter. The CTX80 is crystal controlled (one crystal supplied), but can be driven by our CVF80VFO for full band coverage. Easy to build and fun to use. There are hundreds of stations equipped for SRF CW on 80 Metres, there is no lack of contacts to be had! We will be producing versions of the CTX for other bands when time permits. The CTX80 works on 12 to 14V DC.

In the August issue of The Short Wave Magazine we reviewed the CTX80 and the DcRx (a SSB receiver) kit combination and said: "...a simple, single band receiver, of surprisingly good performance...". The complete CTX kit and DcRx require a total of nine SMD components, and can be assembled ready to work in about two hours. The CTX kit costs £12.95; the assembled CTX kit costs £18.95. The DcRx kit costs £9.30; the assembled DcRx kit costs £14.80.

This is a fully featured VFO for use with our CTX80 transmitter or other homebrew equipment. Stable FET oscillator, dual independent buffered outputs, onboard voltage regulator, IRT (clarifier) control, etc. The circuit includes nine transistors and can drive both a CTX80 and DcRx80 receiver for transceive operation. Requires a 3.74V battery or when using a battery pack, a form of battery protection circuitry (see the short-wave circuit from the Summer issue of The Short Wave Magazine) is needed. The unit can be used as a VFO by itself, or remotely keyed by a foot or gear stick switch if required. The CM2 has a built-in speaker and can be driven by our CVF80VFO for full band coverage. Easy to use and build.

CM2 QUALITY DESK/MOBILE MICROPHONE.
The CM2 is a good quality microphone kit that consists of an electret condenser microphone capsule and a small electronics module that incorporates a Plessey "VQAGD" chip to give automatic control of modulation levels. The unit produces a nice clear audio signal for your transmitter, no matter whether you talk loudly or quietly, near or further away from the mic, the modulation level is maintained correctly for you. Ideal for a desk microphone or for use in the car as a "hands free" unit. The CM2 can be remotely keyed by a foot or gear stick switch if required. The unit will work on an 8 to 14V DC supply, drawing only about 3mA from a 9V battery, and then only in transmit mode. The electronics turn off automatically when switching back to receive, no separate on/off switch is required. The CM2 builds into a clean sounding microphone that you will be proud to use on the air. It is always nice to receive complimentary audio reports, especially when you can have the satisfaction of saying "I built it myself".


PA2/30 Kit £18.90. Assembled PCB module £23.90.

see us at NEC
Of Laws and Standards

A press release from the British Standards Institution refers to the new British Standard for sound and TV receivers: electromagnetic compatibility. It is stated that BS905 will help radio and TV manufacturers by aligning the recommended limits of interference caused by radio and TV with international standards. It also specifies limits of interference for TV games. In Part 2 it looks into the problem of interference to radio and TV and specifies limits of immunity of sound radio, TV broadcast receivers, and associated audio and video equipment — in the frequency band 26-30 MHz! It also specifies limits of immunity of TV receivers to ghosting. We hope to have a review copy soon and will then comment at greater length.

The Merriman Report was published in July 1983. The government has at long last attempted to define its position in respect to the recommendations contained therein, and in a speech on March 5 The Minister of State for Industry and Information Technology specified what was being done about it — as usual, precious little beyond talk.

A recent press notice from the DTI details the action taken against 'Radio Jackie' in south-west London. It is interesting to notice that in 1984 the Radio Interference Service took action against illegal broadcasting stations on over 120 occasions. Between 1972 and today, 24 people have been prosecuted in connection with 'Radio Jackie' alone.

Yet again this wearisome business of a novice licence is being trawled around; this time by G4ZBD. At least this time the scope is a little wider: G4ZBD would include novice operation as an extension to the CB licence (didn’t we imply that just this sort of thing could arise after the announcement of CW-without-a-test by variation of licence conditions?) and would insist on such licensees using “type approved” amateur radio equipment — but, of course, no examination. The one saving grace is that it does attempt to introduce a graded structure, i.e. incentive licensing. The cheeky bit is the statement that there are people who “are prepared to risk fines or imprisonment for wanting to pursue their hobby”. That attitude could be said to apply to thieves. By the same logic, one might suggest that theft laws be relaxed to accommodate their wishes!

Finally, the Dayton Hamvention is over April 26-27-28 so there is still just time to fly to Ohio and join in the fun! Details from WA8ONQ, 311 N. Marshall Road, Middleton, Ohio 45042.
COMMUNICATION and DX NEWS

E. P. Essery, G3KFE

There are, we know, devotees of The Short Wave Magazine who also read other amateur radio magazines, and some of them encourage us no end. The sharp-eyed among them will have noted G3XSE taking the mickey out of your old conductor over a "fault" in his VHF rig which in fact turned out to nothing more than being tuned to the wrong frequency. Thus he spake in Amateur Radio.

However, such things can happen to others, too. Imagine G3XSE stuck on the roadside after an exercise mending fuses; there is much wailing and gnashing of teeth, indeed veritable swear-words (of which, we testify, G3XSE knows most!), simply because it is getting dark, and no headlights will descend to light up. Eventually, G3XSE is reduced to attacking the recalcitrant car with an Avo... the shame of it! However, the worst (or best, depending on your viewpoint!) is yet to come — the reason the fuses were not on was shown by the meter to be — because they weren't switched on!

The Bands

The writer has not himself had a lot to do with them this month, between the usual chores and traipsing round the country on his lawful occasions. However, to judge from the letters, the lower bands have been quite reasonable, while the higher bands 'had their moments' if not consistently.

Let us, therefore, have our monthly amble round and see just what's cooking.

Ten Metres

G4HZW (Knutsford) has only run across a couple of openings; SB4BS and ZS6APM fell into the bag as a result. Otherwise there was nothing, but the acquisition of a Lowe SRX-30D receiver has permitted Tony some exploration of other parts of the spectrum.

G4VFG (Ivybridge) built a new VK2ABQ beam for Ten with a balun in the feedline, put it up and waved it about to attract any itinerant signals that might be passing; all it found was a weak and watery ZS beacon, and a few signals from the RS-series satellites.

There is, of course, the local FM activity on the band, but no-one reports the activity other than in very general terms; neither do we have the comments about CB and other intruders which used to be so common. It is not only important that the band be used, but the results need to be published, because those who cast eyes on our band would rather pick up a magazine and read that the band is dead (or buzzing with life) before putting in a take-over bid, than spend a lot of money on equipment and aerials to find out!

Fifteen

Very definitely a 'daylight' band. G8PG (Greasby) is now able to get on the band with his QRP signal during the day on several days each week, and he has found the band quite reasonable over the December/January period, although Gus notes that for the first time for years the RF Gain control has been wound right up. Three new ones (for the QRP score) were worked on the key in the shape of N3RD/VP9, N4BP/C6A, and KC7UJ/5N8, not to mention EA8; EA9, and above a dozen Ws. One watt, used on 16 days in 1985 so far, has yielded 38 DXCC countries in four continents.

Turning to GW4BLE (Newport, Gwent) we find Steve sending an early report as he intended to put in an all-band single-op entry in the ARRL DX Phone contest and was sure he'd feel too shattered to write after it. So, the GW4BLE report concentrated on the good conditions on the LF bands, but does indicate 3C1 as an all-time new result. Ted reckons conditions were pretty good reason for celebration!

G2HKU (Sheppey) says he would be quite pleased to hear some of the stuff he reads about, let alone actually work it! Ted reckons conditions were pretty poor on all bands for much of the time, and to some extent at least has switched his attentions to woodwork — building cupboards for the XYL, a task which, to his wife's continued ill-health, Geoff Watts has had to give up the administration of the IOTA Awards scheme (IOTA means 'Islands on the Air' and is a popular activity worldwide). We are pleased on the other hand to hear that Roger Balister, G3KMA, has taken over the task for the future. Address your correspondence, therefore to: R. Balister, G3KMA, La Quinta, Limbridge, Chobham, Woking, Surrey GU24 8AR (09905 8224). Geoff will continue to handle requests for his invaluable Prefix-Country-Zone lists, as advertised in this magazine each month.

Here and There

During the national meeting of REF (the French equivalent to RSGB) over May 25-26-27, they will be celebrating 60 years, 1925-1985, of IARU. Among other things they will be relating amateur radio to is philately, and doubtless stamp-collectors too will be interested in the show. In addition they will have available an illustrated envelope bearing a temporary postmark of Chateauroux Post Office; also a similar envelope, but bearing the postmark of a special post office set up for the meeting; and a large parchment, made by the last French parchment-maker, with illustrations, and the same special postmarking. Six IRCs for the envelopes, and 15 IRCs for the parchments. Send your orders or enquiries to: FE1E35 Mr. Raymond Aspetit, 14 Residence Bois Boutin, 16340 L'Isle D'espagneac, France. We have seen copies of the parchment and the postmarks and they are well worthy of a place in a stamp-collection, quite apart from their amateur radio interest.

It is with a great deal of pleasure that we report that after a very long period of years indeed, the first legal amateur radio licence has been issued in Turkey; Dr. Unal Akbar is now signing TA1A, he used to be TAIUA on the bands, but he now has the first official licence. He is the General Secretary of the Turkish Radio Amateur Club. There is, we understand, just one class of licence, giving all bands and 400 watts p.e.p. It is also stated that the Asian part of Turkey is divided into 7 call areas, TA2-TA8.

We were very sad to hear that owing to his wife's continued ill-health, Geoff Watts has had to give up the administration of the IOTA Awards scheme (IOTA means 'Islands on the Air' and is a popular activity worldwide). We are pleased on the other hand to hear that Roger Balister, G3KMA, has taken over the task for the future. Address your correspondence, therefore to: R. Balister, G3KMA, La Quinta, Limbridge, Chobham, Woking, Surrey GU24 8AR (09905 8224). Geoff will continue to handle requests for the

U19BWF, PY1BVT/PYOT (Trinadade Is.), C53EK, and W1-2-3-4.

April, 1985
Geoff for all he has put into the hobby over the past forty or more years; and of course to thank G3KMA for taking over the reins of IOTA — he has a hard act to follow.

ARRL’s DXAC have decreed that ZC4 is a separate country; the only problem is that ZC4 covers the main Base Areas and some smaller parts of the island, but ARRL at the time of writing doesn’t seem to understand that since 1960 ZC4 calls have only been issued by the Sovereign Base Areas authorities for use in those areas, and that no Cypriot national has been issued with a ZC4 call or used one other than under the correct conditions and within the SBAs. Thus, it would seem, any ZC4 activity post 1960 by a properly-authorised station (i.e. not a pirate) must be ‘good’ for this country. However, a lot of people who know the form pretty well have been shouting to ARRL and no doubt this question will be resolved before long.

Still on the subject of ZC4, does anyone know how to get hold of a QSL from ZC4MT? VK5BS notes that he worked this one one morning in January 1979, and the QSL address at that time was listed as Box 413 Larnaca. Contact B. S. Clarke, VK5BS, 17 Sycamore Avenue, Novar Gardens, South Australia 5040 if you can help, please. Incidentally, it is interesting to note that Barry was a reader of *Short Wave Magazine* in the far-off days before WW2.

The station at XU1SS was over-run some weeks ago; it is understood that the YL operator Kim has been heard since but has again gone QRT. V56CT will be listening at the regular sked times until further notice and will pass on any information as to how things are going.

News of the HS position; it is understood through various bulletins that they will be back on the air “soon” at the time of writing; this may well imply that Barry was a reader of *Short Wave Magazine* in the far-off days before WW2.

When your scribe saw G4AKY (Newport, Essex) a couple of days prior to writing this piece he was quite cock-a-hoop as his score had gone up to 106 countries worked by way of, among others, G3ZGC/J6L. He introduced the “CDXN!” mail from the office, held there was a letter from G3ZGC which mentions that he worked G4AKY! One wonders, now, whether the fact that each end of the QSO confirmed, in writing, to your scribe, that they had completed their end of the QSO, implies verification of the contact without the QSL? Wonder what DXCC desk and the DXAC would have to say about that! You may argue that the question is academic; but we know that G4AKY is still chasing up the cards to get his 100 in for a Top Band DXCC application!

Still with Dave, G4AKY, his CW worked EM8CIL, RL7FER, UL7TAQ, W2ZZ/CT3, DJ3ZX/CT3, 4J5JYC (believed to be a Russian), N4JJ, W1RR, K2TR, W3PL, N4IN, W4BT, KA2RDO, W2BXA, W2KFG, W2QD, K2VV, N4PN, CT2CB, U9YGO, U9UCO, and six new ones in K1MM/SV5 (Rhodes), 3A2GL, G3ZGC/J6L, KJ0D/VP2E (Anguilla), and J87U/EE on St. Vincent. Others to note were VO1HP, PT7BZ and IT79ZO, while the got-away list is impressive too: UA6QQ (Yakutsk), UA0AG, PY1RO, SB9CD (Rodrigues), 3C1BC, TG9NX, FG5AM, FM5CD, 5Z4ED, W1BIH/PJ2 (Netherlands Antilles), WB0MIV/V4 (St. Kitts), and PY1IF. All these were heard; others known to have been on but missed included P29PR (believed to be ex-VSSRP), 5V8WS in Togo worked by DJ6QT, VQ9QA, ZL3GQ and ZL1HY. Turning to SSB, there were contacts with T77V, SV8CS on Corfu, C31YA, EA9KF, PJ7A (Saint Maarten) the last-mentioned being another new country. Thus Dave broke the 100 barrier with a vengeance — seven new ones on the band in one month!

A. Whitaker (Harrogate) is up to 97 countries heard on the band, and notes that it is getting harder to find them; certainly David seems to have missed some of the good stuff this time although his equipment is good enough to hear ZL2BT and, more recently, ZL3GQ. David’s list includes C31YA, HH7PV, EA9KF, J87J, YV3AZC, S.W.M. subscriber VK3DS of Ballarat, Victoria, recently sent us this picture which, he says, shows the tidy end of his shack!
W9SMY, 6Y5IC, WB0MIV/V4, EA8, KN6M, WD9AHJ, P42J, ZL3GQ, K5UR, W0EJ (Iowa), T12CF, 7X5AB, SY8CS, T77V, 4X4NJ, UG6GAW, and VP9PJ, not to mention the smaller fry such as this author, for one, would crow over!

G3ZGC (Newbury) wrote about his last trip to the Windward Islands, where he decided to try Top Band. There was operation from St. Vincent and St. Lucia; from St. Vincent things were O.K., whereas from Vieuxfort, St. Lucia, all of America and Europe was booming in on one day, while on the following day from Castries, St. Lucia, it was just as dead as can be — almost as if the aerial was unplugged from the rig.

In terms of results: from G3ZGC/J8 on February 18, FM7WD, and the following night HC1BI plus many Ws. From G3ZGC/J6L on February 21st, all CW and between 0226z and 0402z, 9Y4UV, VE3EK, PZ1DT, G3KMA, OZ7TJ, FG5AM, G4AKY, LU2WM, J73HA, TG9NX, OH1XX, OZ7YY, YU1EXY, OZ1LO, UG6GAW, WA6EIZ, W6AJJ, W7MB. On February 22, just W4FX at RST 449, and VE1ZQ at 449, the only stations at all readable! An interesting report, and VE1ZZ at 449, the only stations at all readable! An interesting report, and VE1FH. Other CW DX worked were ten more, plus VO1AW, VO1HP, WA6EUZ, YU1EXY, OZ7JZ, FG5AM, G4AKY, LU2WM, J73HA, TG9NX, OH1XX, OZ7YY, YU1EXY, OZ1LO, UG6GAW, WA6EIZ, W6AJJ, W7MB. On February 22, just W4FX at RST 449, and VE1ZQ at 449, the only stations at all readable! An interesting report, and nice to hear from G3ZGC after a long break.

Now G3BDQ (Guestling) who writes to indicate that his Top Band activity is falling off with the end of the winter season. John says he has missed some good openings by not staying up too late, but feel he would miss the shut-eye rather more! During the ARRL Top Band CW affair, G3BDQ operated between 0430 and 0530z to work 19 Ws before going back to bed; later on there were ten more, plus VO1AW, VO1HP, and VE1FH. Other CW DX worked included W2ZZ/CT3, CT2CB, EA6NB, K1MM/SV5, 4X4NJ, ZA2GL, ZB2BX, 4U1ITU, RL7FER, UA9s, EU1Q, EW5T and F6REF/HYE (Porquerolles Is, off the south coast of France). An interesting propagation oddity was noted on the morning of February 3; after the local AM net at 1100, G3BDQ tuned to 1955 and heard GM3VMB for a good SB on 10 MHz, and found by contacts with G5NV (Sheffield), G4VHH (Lincoln), and G4TUK in Norwich all with good reports. Talking to others it appeared that there had been a wide-spread inter-G opening around either side of noon that day.

We turn now to one of those that missed the bus last time round, namely that from G4AAW (Maidstone). The best to date for Peter was 9M2AX, on January 9 and, with a QSP from G3PQA, V56DO. Peter’s luck was out in the CQ WW contest, but the rest of the month yielded C31OF, C31YA, IS0PLQ, OH0BA, EU2C, UZ9AWZ, U9AYGO, UM8HBA, V56DO, W1CF, W1WEF, KAI1DLX, W2QD, K4PI, and 9M2AX, all CW save for the C31s.

G2HKU reports a Phone contact with PA0PN — nice to hear he is much better after his operations — plus CW out to OY6FRA, KH8AC/1, K1MM/SV5, OH0PA, K4PI, N4PN, U9AYGO, UA9UCO, W3LPL, WR1R, CT1AOZ, SM5JE, K1MEM, DL1BU, F9LT, DJ6RX, DL1RK, LA2UA, OK1GT, GM4SID, OZ1LO, and OZ1LO.

G4OBK (Whittle-le-Dales, Chorley) says he has put in some time on both 7 and 21 MHz over the past few months. The rig is TS-90S and the aerials dipoles.

“CDXN” deadlines for the next three months:

- May issue — April 4th
- June issue — May 9th
- July issue — June 6th

Be sure to note these dates

Now we turn to two letters from G4HZ (Altrincham); For 18 MHz, Eric uses an indoor dipole in the loft, and the specified power of his licence. On January 30 there was a QSO with SM6LQG/MM in the Red Sea from 1121 to 1127z and on February 3 a QSO with LU5DO on 18.073 MHz, report received 229 and given 569. LU5DO was heard again on February 17 working into Europe, and also a number of DL stations were noted. February 22 saw contacts with OZ8H and CT1LN. Turning to 10 MHz, CT1UP, SB5BU, SK0TH, DL2SBM, EA5CQC, SM2GQG, and DK2CZ were worked between February 21 and 23rd, all between about 10.102 and 10.109 MHz. The aerial for 10 MHz is a Partridge Joystick, tuned “on the nose” with a Partridge ATU for 1:1 VSWR; the single wire comes down from the loft where the Joystick is erected vertically, through the ceiling and down to the operating table, about 25 feet; this is fed by a single-wire arrangement through the “through” position of an Olympic ATU dating from 1963. The loft is quite roomy and boarded over with walk-ways so aerials can be worked on conveniently; there are dipoles for 10, 21 and 28 MHz, plus two-metre Slim-Jim, two-metre G/P, a two-metre five-element beam, and some 35 feet of a 68-foot end-fed wire which reaches the shack from outside. Also outside is a Mosley V3 vertical, ground-mounted, with nine buried radials and coaxial feeder buried under the lawn. Quite an aerial farm in fact!
Our final report on the New Bands comes in from G4UZN (Leeds); on 10 MHz, G4UZN worked CT1UP, CT1YH, W2ZZ/CT3, EA8A9F, EA8RCT, K4LTA/7J, J73D, KA2DIV/V2A, SB4DN, Ws and VE5, plus a gotaway TI2LK. On 18 MHz, several signals were worked at weak signal strength, but J37AE, LJ1DOW, LU5DJO, VU2LO, ZS1IM, ZS6AVM, ZS6DN, DL2GQ/GY5V, 3B8FA, and EL2FJ were all heard — the skip seemed too long for inter-EU contacts. Finally, 24 MHz — "still sleeping!"

So — there you have it for the New Bands. Pass the word round and let's see if we can have some more reports on these Activity Periods through the rest of the year — the first weekend of each month. Not a contest; just get on, work what you can, and report the results.

Eighty

Both space and time press in upon us heavily, so we will clip out the small fry for the rest of this column. G4UZN starts the ball rolling; his CW got out to HV2VO, K81H/VP2E, UA0BRC, UL7GCE, W5XZ, DJ6SI/5V, and 9Y4F.

No doubt about the position for G3ZPF (Kingswinford); David's second letter announces "I've Done It!" in three-inch high letters! It in this case means the 100 countries worked on Eighty, which concludes the "easy" bit of his 5-band DXCC. HK6GDA, D44BC, J73LC, SU1ER, JY5CI, PZ1BS, and TI2CCC where the stations that bumped the total of new countries up to the 100 mark during the month after a longish period of no-progress. This was done with no wire higher than 28 feet and without a linear. Another contact was with T77V, working split between 3799 kHz and 3645 kHz; the QSO was achieved by cranking the tuning knob from one frequency to the other — a somewhat unscientific method, but justified by success!

Just a couple of QSOs on the key by G2HKU; he found G6ZY/EA6 and justified by success! somewhat from one frequency to the other — a kHz and 3645 kHz; the QSO was without a linear. Another contact was with no wire higher than 28 feet and period of no-progress. This was done mark during the month after a longish the total of new countries up to the 100

Finis

That's the lot! Space has run out, and we seem to have given every one their mention — we hope! Let's have your reports for next time, to arrive by first post. What a pity space is now so tight, as we seem to have given every one their mention — we hope! Let's have your reports for next time, to arrive by first post.
The "S.S." Top Band AM Receiver

A Project for the Beginner or Old-Timer

JOHN D. HEYS, G3BDQ

The receiver described in this article may seem to be a 'throw-back' to earlier and less sophisticated times but it was expressly built to allow listening with some comfort to members of my local Sunday morning net on 1950 kHz. It is all very well to own one of the latest oriental black boxes which now seem to do anything short of making cups of tea, but those fine and costly rigs rarely have an AM facility. One can of course take one of the sidebands from an AM transmission and receive it as SSB but in practice this is often far from satisfactory; the speech quality seems to lack 'body' and an almost constant background noise is heard. It is not easy to hold them 'on the nose' with a receiver set up for SSB work when there are receiver bandwidths of 6 kHz or more, but the stronger stations are far from stable. They are quite adequate for AM work when there are receiver bandwidths of 6 kHz or more, but it is not easy to hold them 'on the nose' with a receiver set up for SSB. The local netting is not spot-on either and this calls for a re-tune after each transmission. Effortless 'natter-net' listening is not easy to achieve when there are receiver bandwidths of 6 kHz or more, but the stronger stations are far from stable. They are quite adequate for AM work when there are receiver bandwidths of 6 kHz or more, but it is not easy to hold them 'on the nose' with a receiver set up for SSB. The local netting is not spot-on either and this calls for a re-tune after each transmission. Effortless 'natter-net' listening is not easy to achieve.

The Ferranti AM Radio IC

This little receiver makes use of the splendid ZN414 radio chip which Ferranti designed around 1970 and which became available in late 1972. The chip is in a TO18 package with just three lead-out wires and is virtually a complete AM receiver just needing a tuned circuit and a 1.5 volt supply. It contains ten transistors which perform as RF amplifiers and detector/output stage and was designed to operate between 150 kHz and 3 MHz. Some ten years ago the writer ran an electronics club at his local primary school and some twenty or thirty youngsters built receivers around the ZN414 chips. By using tapped tuning coils it was found that they worked well right up to about 10 MHz.

The ZN414 contains its own AGC circuitry which operates to allow good copy of the weaker signals, on the local net. The nearer and stronger stations tend to actually block the AGC of the ZN414, and should this problem be encountered some attenuation can be switched into the input circuit. A suggestion made by the makers of the radio IC is quite adequate for the reception of AM broadcasts on the MW and LW bands, but to achieve some real selectivity for amateur listening on Top Band a double tuned band-pass circuit is needed. The use of two identical coils, a two-gang variable capacitor and a very small top coupling capacitor (Cs, see Fig. 1) made from a few twists of plastic covered wire (less than 2pF) together with an antenna hooked to an ATU some 'real' selectivity is possible. The gain remains suprisingly high and the prototype receiver is well able to allow good copy of the weaker signals on the local net. The nearer and stronger stations tend to actually block the AGC of the ZN414, and should this problem be encountered some attenuation can be switched into the input circuit. A suggestion could be a series resistor in the antenna link circuit or even a variable capacitor there. The attenuator could be cut out when copying the weaker brethren. It is important that the two tuned circuits are well screened from each other and that there is no stray magnetic or capacitive coupling between them. The receiver described had its coils in screening cans which were earthed. Mounting the coils at right angles to each other and that there is no stray magnetic or capacitive coupling between them.

The Front-End Circuit

A simple coil plus variable capacitor arrangement as suggested by the makers of the radio IC is quite adequate for the reception of AM broadcasts on the MW and LW bands, but to achieve some real selectivity for amateur listening on Top Band a double tuned band-pass circuit is needed. By using two identical coils, a two-gang variable capacitor and a very small top coupling capacitor (Cs, see Fig. 1) made from a few twists of plastic covered wire (less than 2pF) together with an antenna hooked to an ATU some 'real' selectivity is possible. The gain remains suprisingly high and the prototype receiver is well able to allow good copy of the weaker signals, on the local net. The nearer and stronger stations tend to actually block the AGC of the ZN414, and should this problem be encountered some attenuation can be switched into the input circuit. A suggestion could be a series resistor in the antenna link circuit or even a variable capacitor there. The attenuator could be cut out when copying the weaker brethren. It is important that the two tuned circuits are well screened from each other and that there is no stray magnetic or capacitive coupling between them. The receiver described had its coils in screening cans which were earthed. Mounting the coils at right angles to each other and that there is no stray magnetic or capacitive coupling between them.

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Table of Values

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1, L2</td>
<td>40µH, 50t close-wound, 36 swg enam, on 10mm. dia. former with dust iron core (type 450 former, type 8 core, Maplin)</td>
</tr>
<tr>
<td>L1a</td>
<td>4 thin plastic-covered wire over earthy end of L1</td>
</tr>
<tr>
<td>D1, D2</td>
<td>gen. purpose silicon diode</td>
</tr>
<tr>
<td>D3</td>
<td>OA91 or sim. germanium diode</td>
</tr>
<tr>
<td>IC1</td>
<td>ZN414 or ZN414Z</td>
</tr>
<tr>
<td>AF Amp</td>
<td>Z914 using TBA820 or similar amplifier module</td>
</tr>
<tr>
<td>L1, L2</td>
<td>40µH, 50t close-wound, 36 swg enam, on 10mm. dia. former with dust iron core (type 450 former, type 8 core, Maplin)</td>
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</tr>
</tbody>
</table>

Note: all resistors are 1/4W or 1/8W rating. J. Birkett can supply 3-gang variable capacitors suitable for this circuit.
angles and also using a flat piece of metal or copper-clad board between them is another way to reduce unwanted coupling. The only coupling must be via the tiny 'gimmick' capacitor Cx. If coils of the inductance suggested (see coil data) and a twin-ganged 360pF variable are used, Top Board will tune at approximately half capacity. An added bonus is the ability to tune in your favourite (?) pop station at the LF end of the tuning range. There are also a few broadcast stations down at the HF end including the BBC World Service. The audio quality, by the way, is superior to that of many 'superhet 'trannies' and the distortion is less than 3%.

The 100K resistor (R1) provides feedback for the AGC and the output voltage is developed across R2. The value of R2 can lie between 1000 and 500 ohms but the lower value will allow the sharpest selectivity for the receiver. C1 is preferably a disc ceramic component and C2 may also be of this type. Instead of a separate 1.5 volt battery for the IC a simple voltage stabiliser consisting of a chain of diodes is used; two silicon and one germanium, together with R3 will provide the needed voltage. Almost any diodes from the junk box can be used for this purpose.

Should loudspeaker output not be required a pair of phones (medium impedance) may be connected between the negative side of the tantalum output capacitor (C3) and earth. This enables the construction of a very small receiver; the limiting factor being the physical size of the tuning capacitors. The writer prefers to sit back in a modicum of comfort without wearing the 'cans' when working local nets so some AF amplification was called for.

### The Audio Section

These days few constructors use discrete transistors to make up AF amplifiers or output stages. There are many IC’s available and they offer a wide range of input and output powers using a minimum of external components so it is just not worth the time and trouble involved in making up an amplifier. The school project mentioned earlier was made easier by using a 1/4-watt output IC’s such as the LM389 which could drive small 8-ohm speakers. Being naturally indolent, 'BDQ is always on the look out for devices which will save him effort and expense! Messrs. Greenwelde were selling complete 1-watt amplifier panels which have a switch and volume control. These boards use the TBA820 chip for the output stage. One of the panels was obtained for £1.50 and they are ideal for the 'S.S.' receiver. The input connection point on these amplifier boards has a 470K resistor running from it to the volume control pot., and this is best shunted by a 20K resistor. Doing this really increases the gain of the unit and it becomes very sensitive but still stable.

The ZN414 output is more than enough to allow full output from the TBA820. The usual precautions to be taken with high gain AF amplifiers must be observed and a run of screened wire or thin coax connects the front-end circuit to the amplifier. Only earth one end of this screening wire to avoid earth loops. A small elliptical 4-in. x 2½-in. 8-ohm speaker from a defunct ‘trannie' gives more than enough audio to fill the shack. Almost any other amplifier giving from one half to one watt output will serve in this receiver and the choice is left to the constructor.

### Construction

The actual disposition of the tuned circuits, the ZN414 and its associated components, the speaker and the output amplifier can be left to the individual discretion of the intending constructor. In the original receiver the two coils were placed well away from the IC and were mounted behind, and onto, the front panel which was a piece of Formica. The iron-dust cores of the coils were then adjustable through holes in the front panel. Another smaller piece of Formica served as a board for the ZN414 circuitry. Instead of the writer’s brass pins in groups and wired together underneath to simulate a PCB, the purist can etch his or her own circuit board. The plan of the circuit board showing the 'lands' or areas common to each part of the circuit may be helpful (see Fig. 2).

It is suggested that the ZN414 circuit is first checked by connecting it to a simple tuned circuit which covers the MW band. A scrap ferrite rod and coil from an old radio can be used and then no antenna connection will be needed. Use a pair of phones and a 1.5 volt battery for this initial test. A dip-oscillator is useful to set up the two coils and tuning capacitors when they are in position, but do this before you connect the tuned circuit to the ZN414 or it may be damaged; the output from a valved GDO is quite considerable. The aerial connection is via a 4-turn link winding at the 'cold' earthy end of L1. An ATU is advisable, for when carrying out tests on the original receiver a few feet of wire were stuck into the input socket: in addition to Top Band the local Fire Service transmitter on its hilltop about 1/2-a-mile from my QTH came in loud and clear all over the dial! Using the ATU took it completely out.

### Some Further Experiments

As is stands the 'S.S.' receiver can only handle AM signals. To resolve SSB or CW some kind of beat oscillator is needed. Such a BFO must tune over Top Band and be a very low power device. It must be loosely coupled to the ZN414 input circuit otherwise it can block the AGC and bring all signals down to a very low level. A little 'play' with a BFO like this will allow CW and SSB reception but don’t expect miracles! The sensitivity of most HF band transceivers is rather better than 1µV, whereas the ZN414 needs from 50 to 100µV input which is a signal increase of between 15 and 20dB.

The ZN414 is an ideal IC for the IF and detector stages of a simple superhet. A circuit was devised and tried out by the writer recently. A couple of 2N3819 FET’s operated as mixer and local oscillator respectively, having an IF of 460 kHz. An old valve-type IF transformer coupled the mixer to the input of the ZN414 and another much smaller IF transformer rescued from a scrapped ‘trannie' together with a BC107 transistor made an excellent BFO. The superhet worked well on 160 metres but its reception but don’t expect miracles! The sensitivity of most HF band transceivers is rather better than 1µV, whereas the ZN414 needs from 50 to 100µV input which is a signal increase of between 15 and 20dB.

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The Microwave Modules 50 MHz Converter, Model MMC 50/28-S

There are now one hundred stations in the British Isles with permits to operate in the 50 MHz band and some Norwegian amateurs have also appeared recently, so this is an opportune time to review a converter for 6m. The Microwave Modules Limited Model MMC 50/28-S enables the entire 50-54 MHz band to be tuned using a 28-30 MHz IF strip. It is a logical development of the MMC 50/28 which provides coverage of 50 – 52 MHz.

The Specification

The specification states a 2.5dB maximum noise figure, an overall gain of typically 30dB, 65dB image rejection, a maximum frequency conversion error of 1 kHz and a current consumption of 40mA at 12v. Dynamic range and output intercept point were not specified.

The Circuit

The circuit is quite basic and straightforward consisting of an RF amplifier stage, mixer and local oscillator. According to the circuit diagram, the RF stage uses a dual gate Mosfet type 3SK60, but the review model had a 3N204. The antenna socket is coupled via a 470pF capacitor to a tap on the parallel tuned input coil across gate 1. A parallel tuned output circuit is loosely coupled through a 1.5pF capacitor to another such circuit across gate 1 of the 3SK60 mixer with the local oscillator signal being injected to gate 2. The single stage LO uses a BF375, the supply voltage being zener stabilised at 8.2v. There are two crystals – 22 MHz and 24 MHz nominally – selected by a miniature toggle switch. The output from the mixer is transformer coupled through a 10dB attenuator to the output socket.

Description

The components are mounted on a double-sided, fibreglass PCB inside a 110x60x30mm diecast box, black crackle finished. Input and output sockets are 50 ohms BNC types and the power socket is a five pin DIN type with mating plug supplied. The antenna socket is labelled and is adjacent to the unmarked band change switch. The unit weighed 220 grammes.

Tests

The converter was connected to the stabilised 13.8v supply from the Icom IC-730 transceiver used as the tunable IF. The current consumption was 48mA. When the supply voltage was reduced to 12, the current dropped to 33mA. The two crystal oscillator frequencies were counted and were 22,002.37 kHz and 24,000.29 kHz respectively. The specified maximum error of 1 kHz was therefore exceeded significantly in the case of the 22 MHz crystal. Thus, beacon GB3NHQ on 50.050 MHz came in at 28.0476 MHz on the dial of the IC-730. One had to remember to tune low if, for example, setting up for an MS test or on a beacon not copiable on tropo.

Before connecting an antenna, a 50 ohms resistor was plugged into the antenna socket. The converter needed to be IC-730 was very low. A foot of wire was sufficient to bring in GB3NHQ, 43 kilometres away, at S5. Great things were expected when the five-element Yagi was plugged in, however, the converter immediately “took off.” As soon as the lid screw nearest the RF stage was loosened, this instability stopped; and the converter was quite stable, with and without an antenna, with the lid completely removed.

A constant level signal was fed into the antenna socket and tuned from 50-54 MHz. Maximum converter gain occurred around 51.5 MHz, however, the total maximum to minimum gain variation was only 2.3dB which is remarkably constant for such simple circuitry.

Next, a short length of the UR67 feeder was cut off in case a high VSWR was upsetting the RF stage. When the lid was firmly screwed back, the instability was just as bad. By chance, a short length of thinner 50 ohms coaxial cable was spliced onto the UR67 and this resulted in the complete disappearance of any instability. The leafllet included with the converter advises the use of a resonant antenna, such as a multi-element Yagi, and that long wire, random length antennas are unsuitable. So it seems that very accurate matching of the antenna system to the converter is essential and an antenna tuning unit might be warranted to ensure optimum performance in this respect.

The converter was then used to receive the GB3NHQ beacon in the daytime “off” hours, and amateur stations between 23.30 and 08.30. Signal reports were very similar to what other comparably equipped localish stations were giving. The brief test period proved that from the reviewer’s QTH, stations 250 kms. distant could be reliably received in flat conditions although at much lower strengths than on 144 MHz. Meteor pings are much in evidence all the time on 50 MHz. With the receiver tuned to GB3SIX in Anglesey, inaudible on tropo., pings averaged one per minute from random meteors in the daytime.

Conclusions

With a properly matched antenna system this converter performed well so can be recommended to anyone wanting to listen on 50 MHz and who has a receiver capable of tuning from 28 to 30 MHz. However, most activity seems to be confined to just the lower 200 kHz, so a receiver or transceiver only tuning 28-28.2 MHz would be sufficient at present. The MMC 50/28-S converter is manufactured by Microwave Modules Limited of Brookfield Drive, Aintree, Liverpool L9 7AN. (Tel. 051-523 4011). It is available either direct or from various national stockists, the current U.K. recommended price being £34.90 including VAT at 15%.

For those not requiring coverage of 52-54 MHz, the earlier MMC 50/28 is available at £29.90.

N.A.S.F.

Since this review was completed Microwave Modules Ltd. has informed us that the MMC 50/28-S will not be generally available until early summer.

May issue due to appear on Friday, April 26th
ANTENNA REVIEW . . .

The Tonna F9FT 50/5 Five-Element Six-Metre Yagi

WHILE reviewing the Microwave Modules six-metre converter, it seemed logical to simultaneously review a typical six metre beam and the one chosen was the F9FT 50/5 from the well known French company Antennes Tonna.

Packaging and Literature

The antenna arrived safely via British Road Services in a box about six feet long and 5 x 2 1/2 inches. All the hardware, such as clamps, brackets, etc., was packed in a sealed plastic bag. Two leaflets were included, one dealing with assembly instructions with a list of all the parts, the other being an exploded diagram of the antenna.

Electrical Design

This five-element Yagi is about 0.59 wavelengths long, the claimed gain being 9dBi or 6.85dBd. This seems a very realistic figure and could be a little conservative. The driven element is a single dipole fed directly with 50 ohms coaxial cable without any balun. Impedance matching is achieved by a “beta match” consisting of a 450mm. long, 5mm. diameter aluminium rod spaced 30mm. from the centre of the driven element and bridging the feedpoint. How it works is not explained nor is “beta matching” mentioned in any of the reviewer’s antenna literature. Although the parasitic elements are mounted above the boom in plastic mouldings, they are in fact electrically connected to the boom in “plumber’s delight” fashion.

Mechanical Construction

The boom is 20mm. square duralumin alloy section in three pieces. Front and rear sections are identified by red and black end plugs respectively, while the middle section is symmetrical. The supporting legs, or braces, are also 20mm. square tube and are fixed at the boom splice points. All elements are approximately 15mm. diameter aluminium seamed tube; i.e. not seamless like copper plumbing tubes. The elements are in two halves joined together in the middle via substantial black plastic mouldings which fit snugly over the boom, saddle fashion, and secured with wingnuts. The driven element mounting incorporates a hinged snap-on lid for the feeder connexion and a suitable boot for the feeder is provided.

The mast clamping hardware is all galvanised and will accept up to 54mm. diameter tubing. It took about forty minutes to unpack and completely assemble the antenna. The diagrams were easy to follow and unambiguous. Although the elements are identified by R, D1, D2, etc. on the diagram, they are not labelled. However, the physical lengths are all stated and the leaflet states that elements get progressively shorter from rear to front, so there is no excuse for making any mistakes. The completed antenna is quite rigid and looks and feels right.

Feeder Connexion

The manufacturer recommends RG8/U or RG213/U coaxial cable and the reviewer used the European equivalent of UR67. The centre conductor consists of seven 0.77mm. copper wires which is far too fat to fit under the tiny screw in the moulded housing. The leaflet recommends soldering this connexion but care has to be taken not to melt the plastic. Coating the connexions with a thin coat of plastic varnish is recommended, but filling the box with silicone material is not recommended.

Durability

Corrosion is the great enemy of all antennas. No mention is made in the leaflets about protection, but the distributor’s booklet listing all Tonna products advises that all antennas be coated with polyurethane varnish.

Testing

The antenna could only be erected at about half a wavelength over wet grass, the feeder length being about 25 metres. Attempts to determine the resonant frequency and impedance with the station antenna noise bridge were inconclusive and it transpired the bridge had developed a fault. However, the driven element length, taking into account the ratio of length to diameter, suggests that the resonant frequency must be in the 50 to 51 MHz range specified.

Converter instability was found when connecting the system as reported in the MMC 50/28-S converter review. Monsieur Tonna does not believe in baluns so it could be that the VSWR was enough to cause this mismatch resulting in instability; perhaps an unfortunate length of feeder was used. Purists might consider a balun at the feetpoint, the reviewer favouring the “bazooka” type as featured in most handbooks. This antenna provides very useful gain and possesses good directivity. The claimed front-to-back ratio of 25dB seems somewhat optimistic for a five-element Yagi with one reflector, though. However, due to proximity to the house, it was not fair to make any front-to-back measurements.

Conclusions

The Tonna 50/5 Six Metre beam is a sturdy, straightforward Yagi. When properly installed, in the clear, suitably protected, it should give years of satisfactory service. A number of six-metre operators are using this model with satisfaction. The U.K. importer is Randam Electronics who kindly supplied the antenna. They are at 12 Conduit Road, Abingdon, Oxon OX14 1DB. The price is £34.30, including VAT at 15%, and carriage is £4.00.

N.A.S.F.

The ‘Oryx’ range of soldering irons by Greenwood Electronics has been extended by the addition of a low cost, thermally balanced, general purpose 17-watt model, the ‘Super 30’. The iron, which weighs only 115gm., has a range of ten tip widths from 1.6mm. to 4.8mm. and can be supplied to operate on power supplies of 12, 24, 50, 115, 220 or 240 volts; operating temperature is 365°C. Full information is available from Greenwood Electronics Ltd., Portman Road, Reading, Berks. RG3 1NE. (Tel: 0734-595844).
Oblast Corner

NIGEL CAWTHORNE, G3TXF

1985 started off with a bang! Soon after midnight on 1st January, the bands were hopping with USSR stations using a whole new series of special callsigns.

The special prefixes EM, EO, ER, EU, EV and EW as well as the USSR stations signing with /R after the callsign are all part of the celebrations for the 40th anniversary of the ending of WWII. There are 100 stations using these special prefixes and a further 500 war veterans using their own calls /R. All will be QRV until 9th May, 1985.

A special award is available from Central Radio Club, Box 88, Moscow for working 40 stations with either special prefixes or /R callsigns. In order to claim the “Victory 40” award, send a list of stations worked, including the QSO details such as date, time, band and report. The list should be certified as being a true extract of your log by two other amateurs or a club official.

Table 1 shows the significance of each of the different ‘E’ prefixes. The special prefixes appear to have thrown into temporary disarray the oblast identification rules. Table 2 lists a number of special calls with their oblast number and the QSL information. The most important feature of the special prefixes is that the letter after the ‘E’ does not tie in with the letter that normally comes after a ‘U’. Thus EM8CIL is not an UM8, as one might expect at first glance. As can be seen from Table 2, EM8CIL is a ‘UC’ station in Oblast 008.

Identifying Oblasts

An excellent and highly recommended aid to identifying oblasts is the Geoff Watts USSR Oblasts List which is regularly advertised in S.W.M. Geoff’s lists details the oblasts that have more than one key identifying combination. Oblast 101, for example is both UA6A and UA6B. Similarly UP-B and UP-P are both Lithuania and oblast 038. These were not included in the February S.W.M. Oblast Table.

Several letters received queried ‘two letter’ callsigns such as UH8DC, UA9NS, UA1DZ, UA1MU. Many ‘two letter’ calls issued prior to 1971 did not follow the oblast identifier sequence. With these stations there is no way of identifying the oblast from the callsign, so the only thing to do is hope that the QSL card comes in with the oblast number marked on it.

CQ-M Contest

The annual USSR HF Contest on both CW and SSB is a good opportunity to make a large number of QSOs with USSR stations. This year’s event runs from 2100z on Saturday, May 11 to 2100z on Sunday, May 12th, 1985. The significance of the 2100z start and finish times is that 2100z is equivalent to 0000 MSK (Moscow time).

Although the rules do allow QSO’s on an ‘everyone works everyone’ basis, the vast majority of stations active are USSR stations, and hence the ‘CQ-MIR’ (peace) contest can be a useful source of new oblasts.

During the contest, USSR stations will send a signal report and their oblast number as the contest exchange. Non-USSR stations send a signal report followed by a serial number, e.g. the first QSO on CW 599001, or on SSB 59001. Count one point for QSOs within your own continent and three for QSOs with stations outside your own continent. Contacts with your own country count for the multiplier only.

Multipliers are countries worked on each band (irrespective of mode) and satellite QSOs count as a separate band. The countries list is the same as the ARRL list with the following difference: UA2 does not count as an additional country multiplier, it is considered as being part of European USSR.

In addition to the standard USSR countries there are also a number of individual oblasts that count as multipliers. Table 3 shows the forty multipliers within the USSR that are used during the CQ-M in addition to the normal DXCC list for the rest of the world.

Final score is QSO points multiplied by the sum of countries worked per band. Entries should be posted by July 1st to ‘CQ-M Contest’, Box 88, Moscow, USSR.

Every entrant who submits a log receives in due course a complete copy of the results, including a metal pin commemorating the contest. Entry categories are all band single operator, single band single operator, and multi-operator/single transmitter. Medals are awarded for first, second and third placed scores in each category, along with certificates to top scorers.

QSOs made during the CQM can be used to apply for any USSR award, without needing to wait for QSLs. Send your application with the log. All awards, pins, medals are sent to the RSGB from where they are mailed out to individual recipients.

Activity during CQ-M is usually very good, especially from USSR and Eastern European stations. CW is the most lively and there is plenty of activity on SSB, too. With a relatively

<table>
<thead>
<tr>
<th>Station</th>
<th>Oblast</th>
<th>QSL Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM2C</td>
<td>188</td>
<td>UC1AWB</td>
</tr>
<tr>
<td>EM6AAK</td>
<td>101</td>
<td>UZ6AWA</td>
</tr>
<tr>
<td>EM8CIL</td>
<td>008</td>
<td>UC11WB</td>
</tr>
<tr>
<td>EM0CWN</td>
<td>006</td>
<td>UC1WWR</td>
</tr>
<tr>
<td>E05BCK</td>
<td>080</td>
<td>UB4CWK</td>
</tr>
<tr>
<td>ER3A</td>
<td>170</td>
<td>UZ3AZO</td>
</tr>
<tr>
<td>EU10</td>
<td>037</td>
<td>UQ1GWW</td>
</tr>
<tr>
<td>EU1R</td>
<td>083</td>
<td>UR1RWN</td>
</tr>
<tr>
<td>EV4AP</td>
<td>094</td>
<td>UZ4PWR</td>
</tr>
<tr>
<td>EV6AX</td>
<td>097</td>
<td>UZ6XWA</td>
</tr>
<tr>
<td>EV9AW</td>
<td>084</td>
<td>UW9WR</td>
</tr>
<tr>
<td>EW2C</td>
<td>188</td>
<td>UC1AWC</td>
</tr>
<tr>
<td>EW0CL</td>
<td>005</td>
<td>UC1LWA</td>
</tr>
</tbody>
</table>

Table 1. Significance of the special ‘E’ prefixes being used by USSR stations from 1.1.85 to 9.5.85. For European stations working 40 special prefix stations (including the individual stations signing /R) there is available from Box 88 a special “Victory 40” certificate.

Table 2. The new “special calls” have temporarily thrown into disarray the oblast identification system!
USSR DX Countries

European RSSR  UA1, UA2, UA3, UA4, UA6
Asiatic RSSR  UA9, UA0
Ukraine  UB, UT
Belorussia  UC
Azerbaijanistan  UD
Georgia  UF
Armenia  UG
Turkmanistan  UH
Uzbekistan  UI
Tadzikiistan  UJ
Kazakhstan  UL
Kirghizistan  UM
Moldavia  UO
Lithuania  UP
Latvia  UQ
Estonia  UR
Franz-Josef Land  UA1P

Individual USSR that also count as 'country' multipliers in the CQ-M Contest

<table>
<thead>
<tr>
<th>Station</th>
<th>1985</th>
<th>All Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>G4OBK</td>
<td>49</td>
<td>97</td>
</tr>
<tr>
<td>G3BDQ</td>
<td>42</td>
<td>—</td>
</tr>
<tr>
<td>G2DAN</td>
<td>40</td>
<td>65</td>
</tr>
<tr>
<td>BRS32601</td>
<td>24</td>
<td>148</td>
</tr>
<tr>
<td>G4MQC</td>
<td>23</td>
<td>109</td>
</tr>
<tr>
<td>G3ICG</td>
<td>18</td>
<td>95</td>
</tr>
<tr>
<td>G4TWX</td>
<td>18</td>
<td>102</td>
</tr>
<tr>
<td>G4UNH</td>
<td>14</td>
<td>89</td>
</tr>
<tr>
<td>RS 44984</td>
<td>14</td>
<td>78</td>
</tr>
<tr>
<td>G4WSX</td>
<td>14</td>
<td>61</td>
</tr>
<tr>
<td>RS86766</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>G4VDX</td>
<td>8</td>
<td>35</td>
</tr>
<tr>
<td>G4XTM</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>G4ARI</td>
<td>2</td>
<td>61</td>
</tr>
<tr>
<td>G4EZA</td>
<td>1</td>
<td>111</td>
</tr>
<tr>
<td>G4YWG</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>SWL G1HG</td>
<td>—</td>
<td>34</td>
</tr>
</tbody>
</table>

Table 3. As well as the standard DXCC countries, the country 'multiplier' for the USSR CQ-M Contest to be held from 2100z on May 11th to 2100z on May 12th, 1985 also includes a number of special oblasts each of which counts as a separate 'multiplier' for the purposes of calculating the contest score.

simple HF band installation, a good number of contacts can be made from the U.K. during this contest. Give it a try this year! It will certainly help the oblast score for 1985!

Oblast Table

Table 4 shows the first entries received for the new S.W.M. bi-monthly Oblast Table. Many entrants found it convenient to use a photocopy of the oblast table that appeared on page 559 of the February issue of S.W.M. for their entry. This is probably the best way of doing it, but please make sure that you add a total figure for both 'All Time' and '1985 In-Year'. It is not necessary to submit lists of individual callsigns except where perhaps there are queries on the oblast number. In future columns, I will attempt to answer some of the oblast queries received.

Send your up-dated entries for the 'All-Time' and '1985 In-Year' oblasts heard/worked tables to G3TXF at Holt Cottage, Kingston Hill, Kingston-upon-Thames, Surrey by April 15th, to appear in the June issue.

“Practically Yours”

with GLEN ROSS, G8MWR

This month we continue the subject of attenuators by looking at the various ways in which they may be built up. It is, I hope, obvious that any coupling between the input and output ports will reduce the effectiveness of the unit and that this effect becomes more serious as the frequency goes higher, and also as the amount of attenuation is increased. Following from these points the design should use a layout which reduces the through coupling, and attenuation of greater than 20dB should always be done in more than one step.
mix the two types at will when building cascaded units to convenient in one layout than the other. It is also possible to configuration except that the resistor values may be more sensitive to these effects between the components and the case. In most uses this effect will not be serious, but it should be kept in mind. A well constructed single attenuator will always be better in this respect. One way round this difficulty, if a switched attenuator is required for a specific purpose, is to use external fixed attenuators of 2 or 3dB on the input and output connectors of the switched unit. By this method a close approximation of the required impedance is ‘fixed’ and the switched unit is then used. You must remember to add the fixed attenuation to that shown on the switched unit. This dodge can be used in any condition where it is required to establish the ‘correct’ working impedance and so isolate the device being used from variations in the other impedances due to the connection of test gear or various adjustments. The higher the attenuation that can be used the better will be the isolation effect, but there are obviously limits as to how far this can be taken.

The earth plane provided by this board should be soldered to tags fixed under the mounting bolts of the sockets. There is no need to etch the board, all that is needed is the appropriate number of small ‘islands’ to which to connect the signal ends of the resistors. These can easily be made by cutting the copper way with a sharp pointed tool, a small screwdriver with the blade filed down to a scriber point is ideal for this operation (Fig. 3).

Fig 2 RX IS THE COMBINED VALUE OF TWO RESISTORS

Preferences

There is normally no advantage in using either the Pi or T configuration except that the resistor values may be more convenient in one layout than the other. It is also possible to mix the two types at will when building cascaded units to achieve higher attenuation, see Fig. 1. You may also be surprised to find that you need fewer resistors than you thought: this is because in a cascaded design, all resistors that appear as series or parallel connections can be calculated as one resistor of the required value. For example if when using the Pi layout, the output resistor of one section was 1000 ohms and the input resistor of the next section was 200 ohms, then a single resistor of 1200 ohm would be used. The same idea can be used on the T attenuator, this time looking at the parallel connections, see Fig. 2.

Switched Attenuators

These are probably the most useful form for test purposes as they can be arranged to switch in any required loss. By suitable choice of values it is possible to provide, say, 1dB steps up to any maximum required value; this may be done by providing individual steps of 1, 2, 3, 6, 10 and then two steps of 20dB. Using combinations of these it is then possible to obtain any required value up to a maximum of 62dB. Higher losses are possible by adding extra stages of 20dB. This type of unit is best built in a die-cast box to provide rigidity and the switches may be toggle or slide types. The slide is advised because it is far less likely that they will be accidentally knocked in use. Many strange results have been obtained by people who have not noticed the accidental removal of some attenuation! This is the one type of attenuator where there is a definite advantage in using the Pi configuration, simply because it fits the mechanical layout of the switches so well. The general form of construction can be seen from the drawing, Figs. 4 and 5. The switches should be mounted ‘in line’, with two solder tags mounted under one of the fixing nuts and the resistors should then be fitted using the minimum lead length that is reasonably possible. For the best results at high frequencies a screen should be placed between each switch to reduce the coupling between them; this can be made from lightweight sheet metal, or use normal PCB material. Make sure that the screen is well earthed to the box.

Warning

Whilst the switched unit will have the nominal impedance it was designed for at low frequencies, this will not be well maintained at higher frequencies due to the inductance of the components and interconnecting wires and also the capacitive effects between the components and the case. In most uses this effect will not be serious, but it should be kept in mind. A well constructed single attenuator will always be better in this respect. One way round this difficulty, if a switched attenuator is required for a specific purpose, is to use external fixed attenuators of 2 or 3dB on the input and output connectors of the switched unit. By this method a close approximation of the required impedance is ‘fixed’ and the switched unit is then used. You must remember to add the fixed attenuation to that shown on the switched unit. This dodge can be used in any condition where it is required to establish the ‘correct’ working impedance and so isolate the device being used from variations in the other impedances due to the connection of test gear or various adjustments. The higher the attenuation that can be used the better will be the isolation effect, but there are obviously limits as to how far this can be taken.

Layout

If the unit is being built into a PCB as part of a larger piece of equipment it is advisable to lay the attenuator on the board in the same layout as the circuit is drawn, rather than laying the resistors alongside one another. This is especially true if the unit will be used at 70cm. The capacitive coupling that would exist between the parallel mounted resistors would seriously degrade the performance and the expected attenuation may not be achieved.

If units are to be assembled as test gear then the best method of construction is to build them into small die-cast or tinplate boxes. The sockets should be mounted on the end faces of the box and the components can be mounted ‘in air’. The earthed end of the resistors may be soldered directly to the tinplate box or taken to solder tags mounted on the die-cast box with small nuts and bolts. This type of construction is suitable for the HF bands but at frequencies above about 50 MHz it is better to use a PCB cut to fit between the sockets.

Fig 3 SINGLE STAGE ON ‘ISLAND’ TYPE PCB

Fig 4 LAYOUT OF COMPONENTS FOR SWITCHED ATTENUATOR

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various adjustments. The higher the attenuation that can be
used the better will be the isolation effect, but there are
obviously limits as to how far this can be taken.
A Base Station Unit for the Yaesu FT-290R
IAN KEYSER, G3ROO

Having owned an FT-290R for some time and used it mobile and portable it was decided that it was necessary to build a unit so that the set could be used in the shack. The unit was also to overcome some of the drawbacks of the little rig as well as removing some of the clutter from the desk (one of the most important things in any shack!)

To this end not only was the power supply to be included in the unit, but charger, amplifier, and a system to change from Tx to Rx automatically on CW instead of having to hold the PTT while keying. Another worthwhile modification decided upon was an outboard IRT to enable the SSB stations to be tuned in perfectly by being able to tune between the annoying 100Hz jumps. This would need some internal modifications to the set, but nothing at all difficult.

To enable all these facilities to be realised it was necessary to pick up all external sockets on the FT-290R, a fiddly job. It was obviously necessary to make it a slide mount fitting and just have to pick up the two external points on the side if these were required.

As far as designing a 2m. amplifier was concerned I doubted that it was worth the effort as there were so many kits on the market at very reasonable prices. The magazines were scanned to see what was available and the firm that caught my eye was C. M. Howes. The reason for this was that they went to the effort of pointing out that their PA2/30 30-watt amplifier (see Fig. 1) was ideally suited to the FT-290R as it was impossible for it to be overdriven and so produce a dirty signal. Howes also do an aerial change over unit, so both these units were ordered.

The power supply was the next problem to tackle, a total of about five amps at 12 volts regulated being needed. The size of the case was to be kept as small as possible and so this demanded the use of a toroidal transformer (Fig. 2). These are very useful little devices as it is easy to add overwinds if required. Also they have the advantage of a very low external magnetic field, reducing the induction of noise into external wiring. However, they do have a very annoying feature if you happen to live in an area where the mains supply can be unevenly loaded, such as in the country, when the mechanical noise can be excessive. The mains supply for my FT-707 uses a 300W unit and when the washing machine is in use the noise from the transformer picked up by the microphone is audible over the air by local stations!

It was decided to use two regulators, one for the FT-290R and a second for the power amplifier (Fig. 2). A 7812 is suitable for the FT-290R, but a higher current is needed for the amplifier and a 7812, with diodes in its earth return to lift the output voltage to 13.5 volts, is used to drive a TIP3055 power transistor. Care is required when working with this supply not to short it as this is almost certain to destroy the TIP3055 as there is no current limiting built into the circuit; in use, however, this should cause no problem.

Auto CW PCB

The circuit of this is given in Fig. 3. When the key is depressed Q2 turns on very rapidly charging up C8. On key up, C8 discharges through the bases of Q3 and Q4 energising RL1
and placing the FT-290R in the transmit mode. The transceiver will remain on transmit until there is sufficient charge in C8 to keep the transistors turned on and so RL1 drops out. If however, the key is depressed before this happens C8 is recharged and the relay holds in. In early development Q4 was used to pull the PTT line down and hold the transmitter on, but there was a problem due to the transceiver latching in the Tx inhibit mode. It appeared that this was happening if the key was depressed at the instant Q4 changed from an ‘on’ to an ‘off’ state. This occurred relatively slowly as it was dependent upon the discharge rate of C8 and the gain of the Darlington pair, Q3 and Q4. By including the relay this ‘danger period’ was minimised and in fact has only occurred once in over a month of operation. If it does happen it does not seem to disturb the rig at all, and all that is necessary is to stop keying for the time it takes for the Auto CW PCB to go into the receive mode; this is set by the variable resistor VR1. It can be set between about 50mS and 1 second, and the longer the hang time the less the chance of the key being depressed at the wrong millisecond!

This board is wired into the relevant parts of the circuit in the FT-290R, as indicated in Fig. 3, with sufficiently long wires for the unit to be either fixed in the place where the tone squelch should be or, as I have done, wrapped in Sellotape and tucked into this position!
Fig. 4 HOWES CO.1 CIRCUIT DIAGRAM

The base unit nearing completion.

---

Fig. 4(a) MODIFICATION OF HOWES CO.1 SWITCH KIT

<table>
<thead>
<tr>
<th>Replace</th>
<th>With</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>4K7 1/4 watt</td>
</tr>
<tr>
<td>C1</td>
<td>1K 1/4 watt</td>
</tr>
<tr>
<td>D1</td>
<td>1nF Ceramic</td>
</tr>
<tr>
<td>D2</td>
<td>1K 1/4 watt</td>
</tr>
</tbody>
</table>
I have not included a preamplifier in my design as I do not think they improve the sensitivty of my FT-290R at all. They do increase the apparent signal strength and also improve the action of the AGC, but the increase in blocking by local stations is not worth the effort. This was proved when the local contest group, operating from my QTH, were running a linear and four MET 19-element beams. My FT-290R could copy GB3VHF with my 7-element MET beam looking through the contest array, whereas an FT-290R fitted with a preamplifier received nothing but noise and pops! A switch has been included on the front panel in case I put one in later as it is easier to mount a switch during construction than to try and drill holes later.

**The PA**

This is constructed as described in the ample literature supplied with the PA2/30 kit. There should be no problems at all as this is a well proven unit.

**The Switch Unit**

I have slightly modified the Howes CO1 kit to take advantage of the fact that there is a switching bias on the aerial socket of the FT-290R. This DC potential is used to operate the relays rather than detecting the RF; the bias is present at all times the FT-290R is in the transmit mode. This is sampled by R1 which has been increased to 4K7. C1 has been changed to a 1K resistor, a link could have been included here but I had a 1K resistor in my hand at the time! D1 and D2 have been changed to a 1,000F capacitor and 1K resistor respectively, these act as an RF filter to stop any RF from disrupting the operation of the switching transistors. The circuit of the kit is shown in Fig. 4 and the changes are given in Fig. 4(a).

**Construction**

The metalwork can be obtained from H. L. Smith, 287-289 Edgware Road, London W2. and comes in three sections, the U-shaped base, the front tray, and the PA box at the rear. Using the template in Fig 5 (note this is half-size!) cut the front edge for the U-shaped base to take the strap mounting nuts on the FT-290R and drill the four holes in the sides as in Fig. 5. The two small holes are for the mounting of the front tray hinge, and the two large holes on the left hand side are for access to the ‘standby’ and ‘Ext Sp’ sockets. These must be marked and drilled as accurately as possible for the FT-290R to sit in the frame properly. Next comes the front tray, this is only fixed to the U-frame by a hinge consisting of a piece of 1/4-inch square perspex rod fixed to the tray by two 6BA screws.
The slide-mount connections.

The PA box 'folded back' to show the Howes PA and Switch in position.

Showing the power supply components; the capacitor is fixed with cable ties.
screws. Then two screws into the ends of the rod, through the
two small holes on the sides of the U-section, act as the hinges.
Two self-tapping screws could be put through the sides of the
front panel to hold it down, but I have not done that in my
unit as it is not really necessary as the weight of the FT-290R
holds it in position.

Now for the accurate marking and drilling of the plate to
take the various plugs which fit into the rear sockets of the
FT-290R. The template in Fig. 6 should be accurately traced
and using gum stuck to a piece of thick (preferably about
1/8-inch) glass-fibre PCB. Using small drills first, then slowly
increasing the drill size, drill the holes until the various plugs
will fit with just clearance. Place the plugs into the rear of the
FT-290R, and offer the piece of PCB to them to ensure that it
will slide over the threads; if it does not carefully open the side
of the offending hole until it does. Now comes the time that
real care is needed as we have to stick the plugs to the PCB in
the correct positions, using the FT-290R to hold them into
position. To reduce the possibility of having a mishap and
sticking the whole assembly to the FT-290R I carefully
smeared the rear drop of the set with lanolin (wool fat, makes
your hands as soft as a baby's bottom!). Not too much that it
gets all over the place but enough to ensure that the Araldite
cannot get a hold to the set. Mix up a small amount of Araldite Rapide
and apply a smear on to the plugs where they pass
through the PCB; next, carefully insert them into the PCB and
then plug the assembly into the back of the FT-290R. Leave
the arrangement for an hour in a warm place for the adhesive
to set.

Remove the assembly from the set with care — you have
only used a little Araldite to temporarily fix the plugs. Now

mix up more Araldite Rapide and apply to the rear of the PCB
around the plugs to reinforce the fixing and put aside to set.
Clean up the FT-290R using a piece of rag. Bye the bye, I find
lanolin very useful outside on aerials. Nuts that have been
covered with it are still covered a year later and undo with
ease!

**Fine Tuning**

This part of the modification is far from necessary, but it
does make it very easy to tune in SSB stations correctly. It is a
simple modification and consists of one variable resistor and
one fixed resistor. It is necessary to remove the existing wire
from the 'Standby' socket on the left hand side of the set and
replace it with a new wire from this socket to Pin 10 of J5002.
This pin is the output of the digital-to-analog converter of the
processor to the crystal oscillator on the main PCB, and by
slightly altering this voltage it is possible to tune between the
100 Hz steps.

**Conclusion**

The set has seen a considerable increase in use since this base
unit was constructed and the amplifier has enabled me to work
mobile stations in the deep valleys in the Dover area, but the
most unexpected advantage has been the charger! The reason
for this is that I have got into the habit of discharging the
batteries properly and recharging them overnight: this has
produced a considerable increase in their capacity and no
doubt extended their lifespan.

My poor beat-up FT-290R delivers just under 2W according
to my Daiwa CN620A power meter, this into the Howes
amplifier gives an output of just over 16 watts, a very
worthwhile advantage indeed. Audio quality reports on SSB
with amplifier on and off are little or no change, proving the
amplifier to be very clean indeed.
A

LTHOUGH there was a good north-south tropo. lift on February 4/5, the period was unremarkable. Nevertheless, the postbag was fat with a number of new contributors too, so down to business.

Awards News

Two more readers have joined the 144 MHz QTH Squares Century Club so first, congratulations to Byron Fletcher, G6HCV, from Codshall, Staffs., who is member number 45. His award was issued on Feb. 13 for exactly 100 squares confirmed, all on SSB mode. The breakdown was 83 on tropo., 10 via Es, 6 via Ar and one on MS. His station is the same as described in the March 1984 issue.

Member no. 47 is Werner Steinwender, OE3CEW, (I152f) in Austria. Two of his 100 squares were worked on CW, the rest on SSB. The modes breakdown is most interesting: 41 on tropo., 7 via Ar, 15 on MS, no less than 36 via Es and one with EA61F (CA) via FA1 — Field Applied Irregularity for the uninitiated. Walter’s QTH is 510m. a.s.l. and he has been licensed since Dec. 1978. On 2m he runs 400w with two 16-ele. Yagis at 30m. and S3030 masthead preamplifier. He also operates on 70cm. with an 8874 PA for future E-M-E work, the antennas being four 35-ele. home made Yagis and MGF1402 masthead preamp.

John Hunter, G3IMV, holder of QTHCC award no. 3, has won his “350” sticker which was dated Feb. 6, a quite outstanding achievement considering his QTH is not exceptional, he only uses a single Yagi and does not run illegal kilowatts. Obviously all the “easy” squares within normal tropo. range have been worked, if not all confirmed, so it is no surprise that 14 of the new 25 confirmations were for MS QSOs. The rest were 5 on tropo., 4 via Es and one via Ar.

Erik Cechota, OE3CEW, (II52f) is now up to 202 confirmed, his “200” sticker being dated Feb. 19. Of the 26 new confirmations, 17 were CW and 9 SSB. Only three were on tropo., four via Es, 18 on MS and one with SM2GGF was E-M-E. Erik’s membership no. is 22. He queried whether squares outside Europe via E-M-E can be counted, the answer to which is “Yes”. Just identify them by their Maidenhead codes.

Kevin Piper, G8TGM, (ZK17f), member no. 28, now has 150 confirmed, the sticker being dated March 1. His 21 new confirmations comprised 7 tropo., 11 via Es and three on MS. A nice Es one was from Africa, IOSNY/E9 (XV) who Kevin worked on 7-7-83.

The Q QRP Club has extended its CW Novice Award to Class B licensees who hold a letter of variation to their licence. To qualify, applicants must contact 50 other amateurs on CW in the first twelve months. No QSLs required, just a list from the log checked by another licensed amateur. The Class A version is for output power not exceeding 3w, while the Class B award has no power limitation. Applications require 50p in stamps and should go to G8PG, 37 Pickering Rd., Graysby, Merseyside L49 3ND.

Interference

The saga of the British Telecoms’ Ambassador telephone QRM in the 2m. band has reached an important stage. The generation of this QRM has been pin-pointed as due to switching transistors which turn on status LEDs becoming potent oscillators when not switching. A few tens of milliwatts have been measured. The cure is quite simple and BT has already incorporated the “mod” in current production runs of the problem model.

It seems that tens of thousands of these systems are in use, in all of which could misbehave. Ideally they all ought to be recalled and modified as happens with motor cars when certain models are found to be suspect. This would be a lengthy task. It is understood that BT will deal with errant Ambassadors that interfere with radio amateurs where the locations of the instrument is known. At the time of editing, the exact method of initiating this has not been finalised so readers should listen to GB2RS news broadcasts for guidance.

The successful outcome of this problem is largely due to the efforts of the RSGB which prepared a report, based on several cases from members, which was sent to BT and the D.T.I. It may well have set an important precedent concerning interference from digital communications and domestic devices behaving as illegal radio transmitters. The moral is that we should not just accept this kind of interference as something we have to put up with. It unusual noises are heard of local origin, they should be tracked down and all relevant information sent to the RSGB.

If tracking poses a problem there are probably DF and Fox Hunt enthusiasts in local clubs who might be glad to help trace illegal transmissions.

On a positive note, the severe QRM Jim Robins, GB5FD, was reported as suffering in the February issue ceased on Feb. 18 and had not reappeared up to Mar. 10, so presumably the defective instrument has either been replaced or repaired.

Repeater Note

The new Isle of Man relay GB3GD has been causing severe co-channel QRM to the Stoke-on-Trent repeater GB3VT 140 miles away. A press release from the RSGB Repeater Management Group states that: “The interference was the direct result of the I.O.M. Repeater Group erecting a aerial — a 3db ‘white stick’ colinear — totally unsuited to the job of cover a small island from a site 2,000ft. a.s.l.” As a temporary measure, until a more suitable antenna is installed, the GB3GD Tx has been reduced in power.

The RMG letter lists four areas where the I.O.M.R.G. departed from antenna matters previously agreed and specified on the Site Clearance Form. The RMG is continuing to advise the Group on more suitable antennas to give better island coverage, rather than “DX potential” for working EI, GI, GM and GW stations as well as Gs.

“VHF Bands” deadlines for the next three months:

- May issue — April 3rd
- June issue — May 8th
- July issue — June 5th

Please be sure to note these dates

DX-Peditions

Dubus Informationen readers may have noted a proposed Andorraran VHF DX-Pedition in March/April by G6JNS. However, Peter Crosland has confirmed this is now off but that it might take place in September instead. David Jones, G4RVJ, writes that the Exmoor Radio Club is going to Lundy Island (T017PE) from June 8 to 15.

Activity promised for 2m., 4m., 70cms. and 23cms. hopefully with GB2LI or GB4LI. The WAB square is SU14 and they will be on 40m. and 80m. for this purpose. An s.a.e. to G4RVJ at 6 Priory Close, Pilton, Barnstable, Devon EX31 1QX will bring further details.

Clive O’Hennessey, GW4VX, writes
he has acquired two 13-ele. Tonna Yagis for his proposed holiday/radio trip to XS square from July 14 to 28. He would like "beg or borrow" a big amplifier to make the most of the good site, which should be much better than the 1984 one. His QTH is 3 Bryn Lane, Bryn Estate, Pontllanfraith, Blackwood, Gwent NP2 2PG, should anyone feel magnanimous.

Roger Banks, G4WND, (Warks.) having seen his call mentioned in the 4m. section, has written to advise that he is planning an expedition to northern England in May. Operation will only be on 4m. and he hopes to activate Northumberland, Tyne and Wear, Durham and Cleveland counties over a long weekend period. More precise details later.

Richard Hope, GW8TVX, writes on behalf of The Square Bushers Expedition Group to advise of a Perseids assault on XJ square in August. Operation on 2m., 70cm., 23cm., 13cm. on 4m. and he hopes the summer. GW8TVX. More information later in the summer.

Contests

From G2RS, news that the 1984 432 MHz Cumulative Contest was won by GW8TVX/P with 3,529 pts. from sessions 2, 3 and 5 was a close runner up. G4NVA/P with 3,184 pts. from sessions 2, 3 and 5. The 70 MHz CW event last November was won by GW4MGR/P with 250 pts. from 38 contacts. G4MHC was second (236/46) and G3UKV third (233/41).

A reminder about the Banking Club's 144 MHz Contest from 1300-1700 GMT and the 432 MHz CW event in the identical period on March 31; see p. 11 in the previous issue. The B.A.R.T.G.'s Spring VHF/UHF RTTY Contest is on from 1800 on Apr. 13 to 1200 on the 14th, GMT times. A declared four hour rest period must be taken. Bands are 144, 432 and 1,296 MHz but no satellite or repeater QSOs. Normal radial ring scoring on 144 and 432 MHz, but one point per kilometre on 1,296 MHz. For full details, send an s.a.e. to G6LBZ at 464 Whippenden Rd., Watford WD1 7PT.

The 70 MHz Fixed and SWL Contest is on Apr. 21, 0900-1500 GMT being a Fixed and All-other affair. Usual exchanges including Maidenhead locators, plus old 15 kilometres east of Llanfihangel Glyn-Myfyr bit. The first leg of this year's microwave Cumulatives is on Apr. 24, from 0900 to 2000 GMT on 10 GHz and 24 GHz. The

Starting date January 1, 1975. No satellite or repeater QSOs. "Band of the Month," 23cm.

other dates are May 12, June 16, July 14, Aug. 11 and Sept. 15.

Satellites

Very little news of the satellite scene this month from readers, in fact, none at all. However, the UoSAT Bulletins continue to arrive from the University of Surrey from which we learn that, following the re-loading of the On Board Computer software, U-O-11 activities have concentrated on further evaluation of the Particle/Wave, CCD Camera and Data Store and Readout experiments. This satellite has a number of high speed data formats available on 145,825, 435,025 and 2,401.5 MHz at up to 9,600 b.p.s. on the two higher downlinks. Bulletin no. 114, dated Feb. 22, gave details of the data format for the DSR tests.

From details in these Bulletins, it is obvious that U-O-9 and U-O-11 are sophisticated research satellites. What has never been clear to your scribe is do any VHF Band readers actually use them for anything, or if not, do they know anyone who does? Your comments please.

Six Metres

Dave Sellars, G3PBV, (Devon) has finished off his hurriedly made beam and GB3NHQ is now heard more regularly. The transceiver is a Trio TS-660 at 10w and 25 stations of the other 99 have been worked. Dave remarks on the very low activity in the late evenings. The more distant stations contacted include G4FXW, G3FDW, G3UUT, G4GLT, G3NOX, G3LTF, G4CUT, while G3OSS has now been worked on all bands from 6m. to 23cm.

Dave Lewis, GW4HBK, (Gwent) now runs crossband skeds at 0715 each Sunday, except Sunday, with G4CG on 4m. Signal strengths over the obstructed path vary from S9 to nil. Dave is going to try a 3-ele. Quad using wire, soon. At G3FPK, the band was tuned for a few periods and 18 different stations were heard, mostly all in the morning period.

Your scribe's conclusion is that as a tropo. band it is poor but that for MS, provided there are others to work at the right distances, it is very good. If any midnight Auroras occur, propagation should be good.

Four Metres

All band reports were from G4s this time starting with Tim Raven, G4ARI, (Leics.) who lists the 16 counties he worked on Feb. 24 in the third leg of the Cumulatives. Kev Archer, G4CMZ, (Derby) is still soldiering on with his 600 milliwatts and HB9CV antenna with 33 confirmed of 40 counties worked. This has earned him the RSG'B's Standard
Award, the first to be achieved with less than one watt.

Jerry Russell, G4SEU, (Warks.) found conditions good to the south on Feb. 24. He has already notched up 31 counties up to the end of February. G3ZN in Suffolk and G4WNP/P in Northamptonshire were recent all-time new ones. Martyn Jones, G4TIF, (Warks.) also worked G4WNP/P when Roger was in Northants. On Jan. 31. Roger Banks, G4WNN, lived five miles from G4SEU and uses an Icom IC-202S driving, "... the inevitable Microwave Modules transverter ..." the antenna being a 7-ele. ZL-Special at 25ft., the same as 'SEU uses. He is only QRV on 4m.

GW4HRK reports mainly local QSOs apart from G4DQA (Kent) at 2018 on Feb. 25. Dave reports deep QSB in the Feb. 10 Cumulatives with lots of noise and only six QSOs completed. Lift conditions on the 24th resulted in 14 QSOs and a new all-time county, Warks., thanks to G4LRT in Rugby.

Two Metres

Starting with new contributors, a warm welcome to Ela Martyn, G6HMK, (Essex) whose first callsign was ZL0TAC in April, 1982. When she returned from holiday in New Zealand, her present call is G3GHY, (Hants.) has subscribed.

Jerry Russell, G4SEU, (Works.) has already achieved 29 counties up to the end of February. He was first licenced in Sept. 1984 and his first callsign was ZLOTAC (Essex) whose first callsign was ZLOTAC (Essex) whose first callsign was ZLOTAC (Essex) whose first callsign was ZLOTAC (Essex). He has already notched up 31 counties up to the end of February. G3ZN in Suffolk and G4WNP/P in Northamptonshire were recent all-time new ones. Martyn Jones, G4TIF, (Warks.) also worked G4WNP/P when Roger was in Northants. On Jan. 31. Roger Banks, G4WNN, lived five miles from G4SEU and uses an Icom IC-202S driving, "... the inevitable Microwave Modules transverter ..." the antenna being a 7-ele. ZL-Special at 25ft., the same as 'SEU uses. He is only QRV on 4m.

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near Wigan uses a Yaesu FT-290R and Alinco 30w amplifier. His antenna is now a 14-ele. MET Yagi at 30ft. In the contest on Feb. 24 he made 17 QSOs worth 663 points. On Feb. 10 he had a tropo. lift. Another TR-9130 user, Paul Baker, GW6VZW, (Gwent) who enters our tables, but she did not divulge any station details.

Ian Morgan, GW6OFI, (Gwent) uses a Yaesu FT-290R with a muTek preamplifier. His antennas are two, bayed 10-ele. Yagis at 20ft., the QTH being 900ft. a.s.l. He has borrowed a 30w amplifier from GW60K and, in the AR on Jan. 28, which was his first, he worked G8YDZ (WP), two GMS in XP and one in YP. On Feb. 4 he managed F6KCM (BG). Another first report from Bob Ainge, G4XEK, (Staffs.) has a Yaesu FT-290R with a muTek preamplifier. His antennas are two, bayed 10-ele. Yagis at 20ft., the QTH being 900ft. a.s.l. He has borrowed a 30w amplifier from GW60K and, in the AR on Jan. 28, which was his first, he worked G8YDZ (WP), two GMS in XP and one in YP. On Feb. 4 he managed F6KCM (BG). Another first report from Paul Baker, GW6VZW, (Gwent) who has been a reader since the mid-1960s in his s.w.l. days. His 7/5 years old son Stephen regularly reports to our Justin Cooper's column. Paul commenced operation in mid-November last year and got off to a good start in the December lift. Another TR-9130 user, his antenna is a 4-4e. Quad in the attic, hand rotated. Local mountainous terrain makes some directions impossible but QSOs are possible by bouncing signals off the mountains.

Paul stresses he would appreciate listener reports. He asks if anyone has DJ0JR's address.

And now to the regular correspondents starting with John Hunter, G3IMV, (Bucks.) now with 371 squares worked. He has an MS sked with the group going to Foulia Is. in YU square in April. They plan operation from ZT and ZU in The Shetland Islands too. (N.B. Shetlands are counted as another country for our tables). The calls will be GM4AFF and GM4QJ and they will be there between Apr. 10 and 19, principally for MS operation. In the Feb. 24 tropo. opening, G3PBV reports only very strong "local" signals with no real DX. Conditions from Devon faded rapidly in the afternoon.

Tim Charles, G4EZA, (Essex) took part in the CW contest on Feb. 3 and concluded that conditions were incredibly flat as his analysis showed an average of 5.3 points per contact. G4SEU was busy with decorating so AR activity took a back seat. A QSO with GM6WX/P on Jan. 28 gave Jerry his first ever Auroral report. Ray Baker, G4SFY, (Norfolk) found conditions pretty dismal again... "for the most part, and describes the contest as "chronic." His best DX was G3TIR in Devon and his 73 QSOs were worth 663 pts. On Feb. 24 tropo. was good to the "D" row of squares. F6ITU (BI) with 3w and DK1KO (FN) were worked. The next day, the FM end was full of DX-ey stuff and repeater DB0UO on R3 was S9-plus 20dB at 1500. But neither beacons DL0PR nor Y418 were audible. Ray is now on RTTY using a

### ANNUAL CW LADDER

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</table>
Commodore 64 computer and GW3RRI’s software. He will be on CW MS by now, too.

G4TIF added 36 counties and two more countries in the month. Martyn’s best DX included GI4BXB (Down), G8KPL (Cumbria) and GW20P (Dyfed). Tim Kirby, G4VXE, (Gloucs.) mentions GMs 3ZBE (YR), 40GI (YP) and 4VYQ (XQ) on Feb. 4 and GM1HHD (YQ) on the 24th. On the Mar. 2/3 weekend he was out portable with G8TFI, G4BVY, G4GFX, G8FUO and G6CQO and, as GW4VY/P made 780 QSOs. Sue Frost, G4WGY, had made 73 CW QSOs with different stations up to Mar. 5 and writes, “... I am afraid I’m a typical lady op. and like a good chat.” Well, there is nothing wrong in that; it is refreshing to have an interesting contest discussing several topics, rather than the impersonal contest-type exchanges.

Dave Cater, G4WHZ, (Essex) writes that he has not been able to work any DX due to very bad QRM for home computers. By the way OM, you can count your own country and county in your table scores. Martin Lowe, G4YCD, (Bristol) did well in the Jan. 28 Ar working 12 Gs, GM and OZ11VW (J056). Unfortunately a broken rotator cable meant the beam was stuck at 20° so perhaps other DX was missed. Throughout Feb., he found GB3ANG well above normal in strength.

Graeme Caselton, G6CSY, (Kent) often goes out portable with low power. On Feb. 24 he caught the tropo. lift and worked G1JKB, G8DOD, GW4UKU and G3HZD in Cumbria for best DX from ALS51. He reports that most stations knew their WAB squares, and the morning’s tally was 20 counties, 4 countries and 11 squares using a Yaeus FT-225RD and 9-ele. Tonna Yagi at 3m. a.g.l. Philip Ruder, G6MGL, (London) lists his best DX in the Mar. 2/3 contest as GM4HAA/P (1085), G5ECD/P (1084) and GIEYC/P (1084).

Roy Gibbons, G6XSU, (Herts.) bought a secondhand icom IC-202 as a prime mover for 23cm. but has been using it on 2m. Using a 25w amplifier and 4-ele. Yagi; he managed GM4HAA/P and G14VIP/P in the contest for new countries. He also got sundry PA and ON stations and DFOOK in J030. G8TGM now has RTTY receive capability and expects to be transmitting it by Easter. Kevin has received his Morse version which does not allow CW MS, by the way. Neil Clarke, G8VFV, (W. Yorks.) mentions openings to PA/ON on Feb. 5 and 24 as far east as the JO3 squares. In the Mar. 2/3 contest he found the conditions fair on Saturday, but poor on Sunday.

John Fitzgerald, G8XTJ, (Bucks.) was one of several who worked Graham Knight, GM8FFX in Aberdeen during the Feb. 4 lift and who is his furthest north U.K. station so far. His local Ambassador telephone QRM has been reduced from S9-plus 40dB to S2 following BT attention. Clive O’Hennessey, GW4VXV, (Gwent) had made 48 QSOs on CW with different stations up to Mar. 1, only six less than he managed in the whole of 1984 from his, “... hole in the hills.” He only put in 2½ hours in the CW contest on Feb. 3 and remarks on the poor sending by some operators who seemed either incapable of, or unwilling to, reduce speed when asked.

John Eden, GM6LXN, (Caitness) sent a most interesting account of the Jan. 28 Ar. At first, beacons GB3HVF and Y41B were Auroral all the way from 270° north through to 80° and mostly at S8 throughout. Other beacons copied were OH8HVF (MZ79h), DLOUB (GM47t), LA1VHF (ET13c), LA3VHF (DS77), DL0PR (EO54c) the most consistent throughout the event, SK7VHF (GP38c) and GB3LER (ZU65f) which was a 50/50 mix of tropo. and Ar. Due to the large number of different reflecting regions, SSB signals were very garbled impairing readability. By 1700, the band was so full that John had to go to 144. 155 MHz to find a clear frequency.

GM6LXN reports an Ar on Feb. 27 between 2300 and 2350 with five stations worked — 3 Gs and 2 Cs. For the first half hour, GB3HVF was Ar only at 290° azimuth, but no other beacons were audible in the westerly side of the north. Another event occurred on Mar. 2 between 1630 and 1715 with many stations heard calling "CQ Contest," but obviously unaware of the Ar.

Nick Peckett, G4KUX, (Durham) mentioned an Ar on Feb. 17 from 1500—1900 at QTE 0° so obviously too far north for stations further south to hear. Ray James, GM4CXM, (Strathclyde) reported another Ar on Mar. 5 ending at 1900 and in a second phase around 0100 the following morning. Jim Rabbitts, G8LFB, (London) had a QSO with GM6LXN. From G3FPK, conditions in the Mar. 2/3 contest seemed very uninspiring with little real DX. At times, the SSB part seemed thinly populated with persistent "CQ Contest!" pleas going unanswered. A number of participants complained to G1KMI/P about their wide signal which was pretty foul in Purley; “...Never mind the quality, feel the width!”

Seventy Centimetres

David Whitaker, (N. Yorks.) found it “... quite lively...” on Feb. 4 around the U.K. with GM4MOX (YQ) a new square heard. G8DDY (I.O.W.) was heard for the first time; G3TA and G1EQP (Gloucs.), GM8MBP (YR), GM8BZX (Angus), G6BNE (London) and G4CQR (E. Sussex) were also logged. G3PBV has put his 23-ele. DL6WU Yagi up again but did not think conditions in the Mar. 2/3 contest very good. Dave had just 12 QSOs at 230 kms. average DX. John Neal, G4NQC, (London) now has sixteen 21-ele. Yagis aloft and G3MYV heard him working GM4MOX on Feb. 4.

G4TIF lists GJ4ICW on Feb. 3, the following day bringing G4QCR, G1HGI (Tyne & Wear), G8DDY, and G8UFBO as the pick of the DX. Feb. 24 brought G6NMK (Norfolk), while in the Mar. 2/3 contest, Martyn managed GM4HAA/P (D & G) and G4CLA/P (Lincs.). G4XVE worked G1HJD (ZP) on Feb. 4 and Tim took part in the Fixed contest on the 17th working 45 stations in a couple of hours from Cheltenham, including G8PN and G1HJD. In the Mar. 2/3 contest weekend, operating GW8TFI/P, 315 QSOs were completed.

G6HKM uses an Icom IC-490E, BNS0 50w amplifier and 21-ele. Tonna Yagi for this band. Ela has 68 squares worked. G6MGL’s best DX in the Mar. 2/3 contest was G4RNLP (I093AD) from East London with just 3w. G6XSU’s plans to complete his 50w amplifier have been frustrated, Roy’s workshop being full of motorcycle parts down to his son. Colin Morris, G6ZPN, (W. Midlands) has an extra 5-ele. Yagi at 45ft. fixed south with which he gets coverage from XK square to the Isle of Wight, with GU and GJ worked. He found good conditions around the U.K. on Feb. 3/4, but contest conditions on Mar. 2/3 poor.

Twenty-three Centimetres

Very little microwave news this month. G6MGL worked PA0RDY (JO22) and PE1KNA (JO22) on Feb. 5. On the 23rd. there were more continental and Philip contacted PE1FRC and PE1FOT in JO21, PE1JBK (JO22) and D9D8A (JO31). Don Hughes, G8WPL, (Gtr. Mchstr.) has four 23-ele. Yagis for the band but did not mention any activity. He hopes to move QTH this year.

Thirteen Centimetres

Only Gordon Emmerson, G8PN, (Northumberland) mentions this band on which he has 16 squares, 10 counties and 6 countries. Would other 13cm. operators like to send in their all-time squares, counties and countries so we can introduce the new table?

Sign Off

Thanks for all your interesting letters. The copy deadlines are in the box, so please make a careful note of them. All your news, views, etc. to:—"VHF Bands," SHORT WAVE MAGAZINE, 34 High Street, WELWYN, Herts., AL6 9EQ. 73 de G3FPK.
Parcel Radio

Amateur Radio once again at the forefront of technology. Described here, from an exclusive translation, by

GLEN ROSS, G8MWR

Introduction

Parcel radio is taken from the initial letters of “Perfect Amateur Radio Communication (by) Electronic Logic”. There has been tremendous interest in “Packet Radio” during the last few months, developments have been very rapid and we are pleased to be able to describe the latest of these. The article has been translated from a relatively unknown South American journal, “Revista de la Sociedad de los Aficionados de Radio Emisoras (Numero 58) Y De Burrologia Del Pueblo de Santa Euforia del Gran Puerco”. The original author was Jose B Marvello. Some of the terms used do not translate readily into English but in all cases the sense of the original has been maintained. Some of the concepts introduced are breaking new ground and provide a fresh and fundamental reappraisal of transmission technology.

Review

All radio transmission systems are subject to corruption due to interference of various types. Many ways have been found to reduce this problem, ranging from the simple noise limiter of AM radio to the more sophisticated noise blankers used with SSB. Since the introduction of computers it became obvious that they could be used to receive and control, by interrogation techniques, the information received from a distant transmitter. This has been implemented in systems of the Amtor and Packet radio types. This only goes part way to overcoming the problem and also involves a time penalty as much of the information has to be transmitted several times before it is correctly received. A complete reappraisal of current techniques was undertaken and it became apparent that the transmission of information was based on some very suspect thinking. This seems to be due to a continuation of the methods of the early pioneers with updates based on modern technology. What has become increasingly apparent is that these ideas, while workable, are not the best available.

The Problem

As was previously stated the problem is that of corruption due to interference, but this is only due to our use of “carrier on” type transmission to carry the information. Take the case of Morse code, varying lengths of carrier (dots and dashes) are used to convey the information but these are easily corrupted by excessive noise. If we reconsider this case it must be obvious that we could also use the spaces, rather than the marks, to carry the information, i.e. a long gap equalling a dash and so on. We now arrive at the basis of the new system: if the information is passed when there is no carrier present then it cannot be corrupted! This concept is very simple and yet it opens the door to tremendous strides in communication techniques.

Advantages

Apart from the obvious one of no corruption the system offers several other great advantages. The system can be looked upon as a “negative power” arrangement, therefore there is no heat generated in the transmitter and low power transistors may be used to generate full legal power. The aerial systems required are very modest and can easily be installed in lofts or small gardens, and there will be no SWR problems to worry about. Other advantages are that receiver noise figure and overload performance are no longer of any consequence and a simple AGC system will give a completely constant output regardless of the input signal voltage. The usual filters to limit bandwidth are still required, but recent research into equilateral linearity techniques may soon make these redundant.
The oscillator is then buffered and the output is split to feed a balanced modulator, using the circuit developed by Scales, and the adder and after amplification is used to control the Barnes and Hill compressor in the inverted carrier chain. This is an appropriate time to look at what, in a normal advance in technology and yet is such a simple concept in its basic engineering requirements.

The composite signal is now in a usable form but must be amplified to a suitable level. This is done in the following stage which has a gain of exactly -102.35dB so reducing the previous level to a point where all external noise additions will have little noticeable effect. The theoretical level to obtain 100% noise immunity is, in fact, -117.367245dB but the problems in achieving this level are enormous and it is felt that the more readily obtained 99.925674% immunity is acceptable. An output is taken from this amplifier to the Automatic Level Control system. This is required to ensure that there is no change in the level of the pilot carrier chain which would affect the performance of the configuration circuit. There is nothing unusual in this circuit except for the provision of a Rampaltube to provide the very tightly controlled tuning of the ALC tone generators. A normal ALC voltage would not be

**System Design**

The system will be described, and some of the more radical features identified, by reference to the block diagram in Fig. 1. One of the major problems to be overcome in the new system is the reduction of noise sidebands. This is absolutely crucial to the success of the system. Many oscillators were investigated and it was found that push-pull FETs operating in the Dorian mode gave a major improvement; further minor enhancements were obtained by flattening the third order node by filtering. The oscillator is then buffered and the output is split to feed a balanced modulator, using the circuit developed by Scales, and an inverter stage. After phase reversal this signal is amplified and fed to the other input of the balanced mixer. By the use of inverse vectoring techniques this produces a near-perfect carrier at the required level of -100dB.

**Filtering**

There is still some unwanted noise on the carrier and this is removed by a most unusual filtering technique. The complete block is manufactured using LSI techniques so as to maintain the very accurate phase magnitude and linearity that is required. The signal is split and the upper and lower noise sidebands are separately filtered using seventh order Biddulph filters with elliptically enhanced ultimate bandwidth control. The two outputs are combined in a Teskotor unit with optional digital control. This is followed by a simple inverter to reinstate correct phase angle for the following summation unit, which is based on a design by Gross with additional facilities developed by Atkins. A separate output is taken from the adder and after amplification is used to control the Barnes and Hill compressor in the inverted carrier chain. This is required so that the level of the path is maintained within very close limits.

**Information Encoding**

This is an appropriate time to look at what, in a normal system, would be called the modulation circuits. The main difference between this and other systems is that all types of modulation are first converted to a digital format before transmission. Obviously data and RTTY can be sent in the normal environment. SSTV is fairly readily converted to digital form, as is done by various photographic satellites, and speech can be treated in the same form as digital discs. It is simply a matter of sampling at a high enough rate to maintain natural sounding speech. Whatever system is used must provide a data output at normal TTL levels which is then tied to a clamping system to ensure a minimum of data corruption. It is no good using a transmission system which is corruption free if the data is "bad" to start with.

**Modulation Enhancement**

The data is bit-length encoded and then applied to the data buffer which is a simple 741 in a zero gain, virtual earth configuration. The signal then passes to a Hackenkauff phase shifter where it is converted to the inverted zero power condition which is required. The unavoidable harmonics which are produced (mainly those due to the spin rotation of the inverse vectorials) are then filtered in a fully bidirectionally-balanced Margeworth six-section filter, with full interdigital control of the retrogressive degeneration characteristics; this uses a variation of a method described by Heintze, and is one of several that were tested. The modulation, now at the correct inversion, phase and level, is then checked against the parameters of the conditioned pilot carrier and only when the modulation index matches that of the carrier are they passed to the Index Linked Modulator, all others being rejected.

The negated power carrier now contains both the pilot carrier information and also the encoded modulation. By use of the spiral scales of a modified Jones chart it is possible to show that this is the ideal condition for error-free information handling and interchange. It is not possible to demonstrate this on the more usual Smith chart as there is no allowance on this for the combined effect of the modular phase spin acceleration when coupled to the velocity gradient of the Heintze retro-generator and the enhancement capability of the Barnes and Hill compression system.

**Carrier Configuration**

It is not possible to apply modulation by any of the normal methods and a completely new concept is now introduced, namely "Carrier Configuration". This is essentially a method whereby the pilot carrier/information combination is used to modify the basic characteristics of the primary carrier. It is obvious that if the spin index of the information is added to the vectorial rotation of the pilot carrier (after allowance for the reverse gradient which is implied) then the resultant can be used to modify the Barkhundt characteristic of the primary carrier, after the removal of the inverse harmonic content. This simple conception then allows the addition of the well known integration of first order Hertzian power curves with the index corrected content of the information. This is a major advance in technology and yet is such a simple concept in its basic engineering requirements.

**Power Control**

The composite signal is now in a useable form but must be amplified to a suitable level. This is done in the following stage which has a gain of exactly -102.35dB so reducing the previous level to a point where all external noise additions will have little noticeable effect. The theoretical level to obtain 100% noise immunity is, in fact, -117.367245dB but the problems in achieving this level are enormous and it is felt that the more readily obtained 99.925674% immunity is acceptable. An output is taken from this amplifier to the Automatic Level Control system. This is required to ensure that there is no change in the level of the pilot carrier chain which would affect the performance of the configuration circuit. There is nothing unusual in this circuit except for the provision of a Rampaltube to provide the very tightly controlled tuning of the ALC tone generators. A normal ALC voltage would not be
accepted by the ILM circuitry so a system of variable tone frequencies is used. The combined tone and level characteristics providing the control of power by use of negative Furrier analogue control, this being one of the few parts of the circuit which does not depend on digitally derived or enhanced techniques.

**Frequency Agility**

We now have a signal of the correct characteristics but on a single frequency. This may be shifted to any point in the spectrum by the use of mixing techniques as in normal SSB operation. The only critical factors are to maintain the phase, noise and power levels. Several circuits are available to achieve this and the writer uses a system due to Dobplenganga. This relies heavily on the tight control of the parameters by the use of the reverse hyperbolic transfer action originally defined by Krautz but with the addition of full asymmetric coincident phase transfer. Additional amplification is not normally required as all the facilities are now complete, but if it is thought desirable then the amplifier used should be a bidirectional type so as to maintain the present advantage of needing no Tx/Rx switching.

**The Receiver**

This is a very simple unit due to the fact that most of the advantage is gained during transmission. Refer to Fig. 2 for a block diagram.

Original frequency manipulation is performed in the final transmit mixer and the signal is then taken to a sync-filter. This uses two Borg cylindrical units in the tandem circuit developed by Pettengell, and is protected from transient shock by Poore buffers at both terminals. The signal output is taken to the low gain amplifier stage. Here the emphasis is on very low noise operation and advantage is taken of the noise cancelling feedback circuit recently developed by the Muew-Tech Corporation. The following splitter circuit is optional and is only required if it is intended to monitor solar activity. This is achieved using a spectromagnetoscope based on a design by Coatfield, but is outside the scope of the present article.

**Decoding**

Complete noise immunity is now produced by regenerating the original signal from a clean DC voltage. This is achieved by using an optocoupler, the very fast rise times involved being taken care of by the use of a light-emitting GaAsFet instead of the more usual LED. The pulses are then passed to the decoder. This is driven from a clock which obtains its reference from the Worthington Standard, with phase adjustment provided by an input from the Dynapore sync-filter unit. After buffering the RS232 signal is available for external use. Another optional feature is the status display, this is based on a readily available plug-in card (type number UB40) which is available from Arthur Electronics Ltd.

**Aerials**

The aerials to be used with this system should be chosen with care. As the performance of the HF bands decreases it would be worth considering the underground aerial recently described by Heys. This makes use of a previously unknown inverse function centred on 7 MHz and would make an excellent complement to the new transmission system.

*Translator's Note:* Once again amateur radio is leading the technology race, but it will be some time before this system is heard on the bands to any great extent, but that also happened with SSB. It is hoped that a full constructional article can be prepared for future publication, but it has only been possible in the space available to cover the basic design criteria of the new method. However, enough information has been presented to allow the average amateur to at least consider building his own unit or modifying existing equipment.

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**The Ionosphere in Danger**

**A Disturbing Report**

Prof. F. N. T. ROMANICH, M.A.

 Amateur radio operators on the HF bands will be only too familiar with the infamous “Woodpecker” transmissions from the Soviet Union which have been severely disrupting all types of radio traffic over a large part of the radio spectrum. A disturbing report has been received by the author's department from the Propagation Studies Department of the Nanchang University in the Peoples Republic of China which concludes that the ionosphere is being steadily destroyed by these transmissions.

Translation from Mandarin Chinese of scientific matter is not easy, but the mechanism appears to be that the extremely powerful Woodpecker signals which, contrary to what many believe are in fact highly directional, react with proton particles from the solar wind to produce positive electrons. These positrons then collide with the electrons forming the ionosphere, thus annihilating one another. As Einstein’s equations predict, this annihilation is accompanied by a release of energy and this is suggested to be the cause of much of the observed increase of general noise in the 12-18 MHz region, in particular.

If these transmissions continue at their present level throughout the present sunspot minimum — which is expected to be unusually long — the report suggests it will be “touch and go” if there will be much F-layer left by 1988/9. If these predictions are correct, then there will be far-reaching repercussions: worldwide short wave broadcasting would be impossible and local radio broadcasting would be confined to VHF and ground wave coverage on medium waves. World wide communication would have to be via satellite which would provide great opportunities for companies engaged in satellite design, building and launching. If radio amateurs wish to enjoy communication with fellow enthusiasts across the world, they will need to build more satellites to transpond their signals. These would have to be in geostationary orbits but competition for such orbits is bound to be intense.

If HF radio communication ceases, then all the considerable investment in transmitting equipment and antennas will be wasted, having little value. This will affect radio amateurs with multiband transceivers and beam antennas. It is possible that after the destruction of the present type of electron ionosphere, if the Woodpecker transmissions are continued, perhaps under the auspices of the United Nations, a new ionosphere based on positrons might be created. Some researchers have suggested this would cause auroral propagation to appear over equatorial regions while those in the more northerly and southerly latitudes would be able to communicate over long distances by T.P.P. or trans-polar propagation mode.
Newcomer’s Guide to CW Operating
N.A.S. FITCH, G3FPK

The agreement to allow Class B licensees to use CW mode on the VHF/UHF bands if they apply for a letter of variation to their licence has come in for some criticism, mostly from Class A licensees who fear that the bands might become cluttered up with struggling brass pounders with little idea of acceptable operating procedures.

A legitimate criticism of the current R.A.E. is that candidates are not questioned on operating procedures. In the past, most aspiring radio amateurs spent time as short wave listeners so could absorb basic operating methods. Nowadays however, many new licensees have come straight from the CB past, most aspiring radio amateurs spent time as short wave listeners so could absorb basic operating methods. Nowadays however, many new licensees have come straight from the CB band where operating practices and jargon are quite different from those on the amateur bands. The purpose of this article is to acquaint first-time CW operators, who have learned the code, with the basic operating procedures so that they will have a reasonable idea of “how to do it.”

The General or CQ Call
Before starting any transmission, make sure the frequency is not already in use. It may sound unoccupied but someone may be working a station you cannot hear. A quick way of inquiring is to send “QRL?” a couple of times before starting to call CQ. “QRL?” means, “Are you busy?” but in this context means, “Is anyone already using this frequency?” If there is no response, then go ahead and call CQ.

When calling CQ, a few CQs followed by your call, two or three times, is sufficient. Sending CQ thirty times and your call once at the end is poor practice since the receiving station may think you are so that the listening station can beam towards you; e.g. “GOSWM GOSWM de G1XYZ G1XYZ KN.” The letters “KN” sent without a space, which is the meaning of the bar over the top, indicate that GOSWM is listening only for G1XYZ.

Alternatively, you may have been monitoring a calling frequency or a QSO that has just ended and decide to call a station. In this case you would send: “GOSWM GOSWM de G1XYZ G1XYZ KN.” The letters “KN” sent without a space, which is the meaning of the bar over the top, indicate that GOSWM is listening only for G1XYZ.

The Calling Frequencies
If you have put out a call on a calling frequency, such as 144.050 MHz, and have received a reply, or have answered another’s CQ call, the next thing to do is to move off. This is best done by one partner sending, say: “QSY 12 Up,” or “QSY 14 Dn,” meaning go 12 kHz up or 14 kHz down respectively. This is more reliable than stating a specific frequency, such as “062” since frequency read-outs from rig to rig often differ. If you are using a narrow IF filter, an error of one kilohertz would result in nothing being heard.

The Message
If you have never contacted the station before, the first thing to do is to send his RST report and your QTH; most people also send their name on this preliminary exchange.

Readability
R1 Unreadable.
R2 Barely readable, occasional words distinguishable.
R3 Readable with considerable difficulty.
R4 Readable with practically no difficulty.
R5 Perfectly readable.

Signal Strength
S1 Faint, barely perceptible signals.
S2 Very weak signals.
S3 Weak signals.
S4 Fair signals.
S5 Fairly good signals.
S6 Good signals.
S7 Moderately strong signals.
S8 Strong signals.
S9 Extremely strong signals.

Tone
T1 Extremely rough hissing note.
T2 Very rough AC note, no trace of musicality.
T3 Rough, low-pitched AC note, slightly musical.
T4 Rather rough AC note, moderately musical.
T6 Modulated note, slight trace of whistle.
T7 Near DC note, smooth ripple.
T8 Good DC note, just a trace of ripple.
T9 Purest DC note.

Table 1. The RST Code. Note: When reporting Auroral signals, it is usual to send “A” instead of a T report; e.g. RST 53A.

Rather than launch into a long transmission, it is best to let the other person send their basic information by which time both will have assessed how reliable the path is, whether copy will be easy or a struggle, etc. Short initial overs will give either operator the opportunity to request a change in sending speed. “QRS?” means, “Shall I send more slowly?” while “QRQ?” means, “Shall I send faster?” Sometimes a station will request, “PSE QRS,” accepted as meaning the other operator is sending too fast for proper copy.

The RST code is set out in Table 1 and you should always send faster?” Sometimes a station will request, “PSE QRS,” accepted as meaning the other operator is sending too fast for proper copy.

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Table 2. Some Common Abbreviations for CW Operation

Rather than launch into a long transmission, it is best to let the other person send their basic information by which time both will have assessed how reliable the path is, whether copy will be easy or a struggle, etc. Short initial overs will give either operator the opportunity to request a change in sending speed. “QRS?” means, “Shall I send more slowly?” while “QRQ?” means, “Shall I send faster?” Sometimes a station will request, “PSE QRS,” accepted as meaning the other operator is sending too fast for proper copy.

The RST code is set out in Table 1 and you should always send an honest report. It is misleading to send, “Ur Sigs RST
569,” if you are only copying 75% and the signal fades into the noise from time to time. It makes sense to ignore S-meter readings and instead judge what the signal sounds like from the descriptions in Table 1. If the signal has nasty clicks associated with it, as is often the case when so-called linear amplifiers are activated by RF sensing, then politely tell the other person. Send: “Sri but can hr ur key clicks plus/minus 10 kHz.”

In marginal conditions, or when there is some QRM, it is wise to spend important parts of the message more than once, in particular the report and location. The correct way to indicate you are about to repeat a word or phrase is to send “II”, i.e. dit-dit, dit-dit; e.g. “QTH is Bristol II Bristol.” Often, under such difficult reception conditions, an operator will add a question mark, dit-dit-dah-dit-dit, to ask if you copied it alright.

Abbreviations

The newcomer to CW operation is often confused by the many abbreviations in common use; e.g. “Mni tks fer call es psed to meet u conds vy bd tdy wid QSB es QRM.” That means, in plain English, “Many thanks for the call and pleased to meet you. Conditions (are) very bad today with fading and interference.” The more usual abbreviations are shown in Table 2 and a comprehensive list is given in the RSGB’s Amateur Radio Operating Manual and in other handbooks. You do not have to use abbreviations but they do speed up a QSO; it is much quicker to send “B4” instead of “Before,” or “TMW” rather than “Tomorrow,” for example.

Identification

It can be very time-consuming giving call signs at the beginning and end of each transmission period especially if the overs are very short. To overcome this, many more experienced operators use “break-in” procedure. True break-in is when the sender can actually listen between words and it is a very efficient way to operate. Newcomers can speed up a QSO by adopting this technique by sending “BK;” e.g. “Ur QTH? BK.” The other operator might reply, “QTH Bristol BK.” However, to comply with licence requirements, you must identify at not more than fifteen minutes intervals.

Ending a Contact

When you have run out of things to say and wish to end the QSO, the accepted way is to send, “QRU?” which means, “Have you anything more for me?” Another way is to send, “QRU NW QRU?” which can be interpreted as, “I’ve nothing more to send, have you anything more for me?” When you have both decided to finish, there is no need to make repetitive, long-winded goodbyes. A courteous “Txn fer QSO es hpe cuag sn 73” is quite adequate, meaning, “Thanks for the QSO and (I) hope to see you again soon. Best regards.” To indicate your very last transmission and to signify you are ready to receive any other call, you would sign off, for example: “... 73 G05WM de G1XYZ VA,” and VA meaning end of work. If you intend to switch off after signing, it is usual to indicate this by sending “CL” meaning “I am closing my station.”

Conclusions

One often hears opinions that CW is an outdated and unnecessary form of communication. The arguments include that machine code systems, like RTTY, AMTOR, Packet Radio, etc., have rendered CW obsolete. No doubt they can be very efficient and pretty reliable, but what if some small component in such systems should fail? You are left with hundreds of pounds-worth of gear that is useless. But as long as you have a simple Morse key with which to turn your transmitter on and off, you can always communicate.

Like many other activities, efficient CW operation is an art. The more you practice it, the better you will become and the more enjoyment you will get from this very first type of telegraph and radio communication. It is hoped that these few notes will help the newcomer to start the right way. You should find that, if you follow these basic practices, the more experienced CW operators will be glad to contact you and help you gain more confidence and speed. Happy brass-pounding!

The Barry College of Further Education crew is based at the Annex at Weycock Cross, Barry, every Thursday evening; on April 11 they have a talk on WW2 clandestine radio, and on April 25 they have a trip to Bridgend Police Hq. Radio Room.

St. Marks Church Hall, Biggin Hill, is the Hq. of the Biggin Hill club, where they may be found next on Tuesday, April 16, with an invitation to bring along pictures, slides and so on, which you feel may be of interest to the others.

As Blackwood have their Silver Jubilee in 1985, they are putting out an Award to celebrate; work as many members as you can between April 1 and March 30, 1986. There is an SWL section, too. Get the full details, and all about the club as well, from the address shown in the Secretaries Panel.

Every Wednesday evening the Bolton club foregather in Horwich Leisure Centre, Horwich. Again, more details from the Hon. Sec. — see Panel.

April 19 is “Test Equipment and Measurements” for the members of the Borders group, at their Hq. in the Tweed View Hotel, Berwick-on-Tweed. The routine is to have meetings on the first and third Fridays each month.

Now we turn to Bridgend where again it is first and third Fridays, at the YMCA in Bridgend. More details from the Hon. Sec. — see Panel.

Every other Wednesday the Brighton crowd heads for the Seven Furlong Bar at Brighton Racecourse, where they have a

CLUBS ROUNDUP

By "Club Secretary"

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The Bristol area seems well catered for in the way of clubs. Bristol ARC gets together at the YMCA in Park Road, Kingswood, Bristol 15; April 2 is "Specialist Video", with the club management meeting on 9th. April 16 is a night-on-the-air, and on 23rd they have a computer night. That leaves just April 30 for an 'Open'.

Another one in Bristol is the Shirehampton lot, based on Twyford House, High Street, Shirehampton, Bristol, where they are to be found every Friday evening. The general routine is to alternate planned activities with informals throughout the year; and they have a club station and gear for HF and VHF.

BARTG is the one for the RTTY buffs, not to mention such peripherals as AMTOR and Packet Radio. Details from the Hon. Sec. — see Panel for his details.

There is to be a meeting of the members of British Rail at Torquay on April 26-27, and for details we must point you at the Sec. — see Panel for his details. There is also another club in the area with almost the same name, which tends to a little confusion.

Nice to see that the Bury club's new scribe doesn't have a computer — most of them have dot-matrix printers that are short of ink(!). Anyway, G6SPM tells us that they have meetings every Tuesday at Mosses Community Centre, Cecil Street, Bury, with the second Tuesday each month being the main, formal meeting; the rest are informals.

The Cambridgeshire Repeater Group has a newsletter which alone is worth a subscription; they look after the various repeaters at Barkway, plus the Cambridge one. Details from the Hon. Sec.

The Cheltenham gang has a booking on the first and third Friday of each month; it is in the Stanton Room, Charlton Kings Library, Cheltenham, and they have club members interested in just about every aspect of amateur radio activity.

April in Cheshunt means natters on April 10 and 24; on 17th G3OJI will talk about the BBC's OB communications. Venue is Church Room, Church Lane, Werrymale.

These days the Chester club is based at the Chester Rugby Club, Hare Lane, Vicars Cross, Chester. On April 9, G3EWZ will talk about HF aerials and propagation; on April 16 they have GW1ATZ on the installation of PMR equipment; and on 23rd G3BIC talks about entertainment electronics. That leaves April 30 for an outside activity evening at The Yeld, Kelsall, Chester.

At Chichester they have Chris Page, G4BUE, talking about QRP on April 2 in the Long Room; on April 18 they are in the Green Room for a talk on xerography by G4TSQ. The Hq. is Fernleigh Centre, 40 North Street, Chichester.

April 18 is the date for a talk on packet radio at Colchester; that is a late bit of news, filling in the rest needs a phone call to the Hon. Sec. — see Panel. The Hq., by the way, is Colchester Institute, Sheepen Road.

The new Cornish cover replaces a design that has been in use for at least a couple of decades; inside the revamped newsletter we see that April 4 is the AGM, at Trelighe Church Hall, on the old Redruth by-pass.

There is no meeting at Coventry on April 5; they will have nights-on-the-air on April 12 and 26, and on April 19 they will be having a PCB talk and demonstration. Find it all happening at Baden-Powell House, 121 St. Nicholas Street, Coventry.

Strangely enough there seems to be no meetings for Crawley in April. It is suggested that a check be made as to what's on with the Hon. Sec. — see Panel for the details.

Now Crystal Palace where the venue is the All Saints Parish Rooms, Upper Norwood, at the junction of Beulah Hill and Church Road, opposite the IBA mast. The meetings are on the third Saturday; on April 20, G8OTG will be asking "What am I doing with my computer?" with the help of some other members.

If you are interested in the Dartford Heath D/F group then we have to refer you to the Hon. Sec. — see Panel — for all the details both of the hunts and the meetings at their local, the "Horse and Groom".

The Derby gang have been thumped by a massive 20% increase in the rent of their place at 119 Green Lane, Derby, where they gather each Wednesday. On the other hand, this is a club which seems to have lots of members and do lots of things, so they will doubtless get by.

For the details of the Droitwich doings we must refer you to the Hon. Sec. — see Panel. However, we can say that they have a booking at the Scout Hq. in Union Lane on the second and fourth Monday of each month.

It looks as though the meetings of the Dudley group at Allied Centre, Greenman Alley, off Tower Street, are every week on Mondays. However, for the latest data, get in touch with the Hon. Sec. — see Panel.

April 11 at Edgeware is informal, and on 25th G3SJE, John Bluff, will be talking about operating techniques. Both are at 145 Orange Hill Road, Edgeware.

On we head for Exeter where the April 15 talk will be on fault-finding and circuit testing. This is at the Community Centre, St. Davids Hill, Exeter. Everyone please note this month's date is a week later than usual to allow for Easter.

April 10 at Farnborough is noted as being a bring-and-buy sale, and on April 24 they have G4CJO and G4EMR to talk about AMTOR. Both are at 7.30 p.m. at the Railway Enthusiasts Club, Access Road, off Hawley Lane, Farnborough, Hants.

Deadlines for "Clubs" for the next three months—

May issue—March 29th
June issue—April 26th
July issue—May 31st
August issue—June 28th

Please be sure to note these dates!

The Fylde wishes to be sure there is no confusion with the old 'Blackpool and Fylde' club which, though moribund, has never been wound up and historically was one of the first five involved with the Postmaster-General back in 1921. They get together at the Kite Club, Blackpool Airport — there is a combined subscription to the Kite Club and the radio club, so they can have access at all the normal club opening hours. Meetings are on first and third Tuesdays, the latter being the informal-plus-Morse evening.

For all the details of the Glenrothes club, we must refer you to the Hon. Sec. — see Panel.

On the last Thursday of each month the Glossop members aim for the "Nags Head" in Charlestown Road, Glossop; April's meeting will be hearing a talk by the RSGB Regional Representative.

Next we have the G-QRP Club — this is the one for the low power operators and the chaps who believe amateur radio is about home construction. Details from the Hon. Sec. — see Panel.

It is many years since the writer had anything to do with Grafton club; nowadays they are to be found at the "Five Bells" in East End Road, Each Finchley on the second and fourth Friday of each month. G3MCD talks about coils and capacitors on 12th, and on 26th they have a junk sale.

April 25 will be a dose of Nostalgia for Greater Peterborough, when G5UM gives his talk on "VHF, Then and Now". Venue is the Southfields Junior School, Stanground.

Now we must go to Grimsby where the Hon. Sec. not only promised to send us a programme but actually did so. . . . April 4 is down for Communications with Aliens", and on April 18 they learn all about CW contest operating; the venue is the Cromwell Social Club, Grimsby.
so watch your step!

Friday is chat night for Hastings at Ashdown Farm Community Centre, Downey Close; the ‘main’ meetings are on the third Wednesday of each month at West Hill Community Centre, Croft Road. April 17 is a junk auction.

The Haverings crowd has a quarterly business meeting on April 3, and informals on 10th and 24th. That leaves April 17, when
was still unsettled at the time of their letter, but doubtless filled in committee meeting. April 16 is a talk by G3PGQ, and April 30 is April 2 is a talk on contest working, and on 9th they have a meeting at Aggborough Community Centre, Hoo Road, Kidderminster; you are talking about a local club, or licensing or whatever.

Informal Fact and Fiction" by G8OHH, and on 19th they have an informal meeting of the Maxwelltown club, in the Dumfries area, to discuss plans for a VHF/DX contest.

Over to Hereford now, and here the locals have the first and third Friday of each month at County Control, Civil Defence Hq., Gaol Street, Hereford. April 5 is a talk on “Radio Activity: Fact and Fiction” by G8OHH, and on 19th they have an informal meeting.

Over to Eire now, to I.R.T.S., which is your one-stop source for all you need to know about amateur radio in Eire-land, weather you are talking about a local club, or licensing or whatever. Details from the Hon. Sec. — see Panel for the needful.

Most Tuesday evening the Kidderminster crowd has a meeting at Ageborough Community Centre, Hoo Road, Kidderminster. April 2 is a talk on contest working, and on 9th they have a committee meeting. April 16 is a talk by G3PGQ, and April 30 was still unsettled at the time of their letter, but doubtless filled in now.

Leicester Repeater Group looks after all the repeaters and beacons in their area, ranging from a 28 MHz proposal right on up to the beacon on 10 GHz. All the details from the address in the Panel.

The Loughborough has an Hq. at the Top Floor of the Brush Sports and Social Club, 18 Fennel Street, Loughborough, which lies by the bus station and opposite the car park. April 5 they may be closed, but if so have a listen on 145.425 MHz because they may head for a local pub. On April 12 they have a junk sale, and on 19th there is a Top Band D/F Hunt; April 26 is ‘open’. All these dates for next month are April 3 and 17. No details of the programme available, but we understand it is being put together. Now South Bristol which means Whitchurch Folk House, East Dundry Road, Whitchurch. April 3 is a lecture on 10 GHz gear, and on 10th a VHF activity night. April 17 sees the start of the club’s VHF DX contest, and on 17th they have a computer night. That leaves April 24 for a microwave workshop.

The Southdown club has a rather vivid blue cover to its newsletter which is quite unmistakable. It tells us that they have main meetings at the Chasely House for Disabled Ex-Servicemen, Southcliff, Eastbourne, on the first Monday of the month, or second should the first be a Bank Holiday. In addition they gather at the club room at Wealden District Council Offices on Tuesday and Friday evenings — this venue is in Vicarage Fields, Hailsham.

April 11 is the date for Southgate, at St. Thomas’ Church Hall, Prince George’s Avenue, Oakwood, London N14. The activity is a surplus equipment sale. Just before the end of the month we see they are having a sponsored station at Forty Hall, Forty Hill, Enfield; the aim is to work as many countries as possible. The Mayor and Mayoress of Southgate are both licensed amateurs and both club members.

At Stafford we find the club uses the Coach and Horses Motel at Weston on the A51 every Tuesday evening for their meetings. They try to have a talk or demonstration at every meeting. The Stanley club lives at the “Kings Head” in Stanley, Co. Durham, and has various activities lined up for 1985. More details on what happens every Tuesday evening from the Hon. Sec. — see Panel.

Stourbridge has its base at the Robin Woods Centre (ex-Beauty Bank School), which is in School Street, off Enville Street — this is the Bridgnorth turning from the Ring Road. They are to be found here on the first and third Monday of each month.

It is now the turn of Surrey; this club meet at TS Terra Nova, 34 The Waldrongs, South Croydon, on the first floor mess deck, on
the first and third Monday each month. The first meeting is the main one, the second being an informal. For this month, we note April 1 is the AGM.

Every Thursday the Swindon club members get together at Oakfield School, Marlowe Avenue, Swindon. Details of the programme from the Hon. Sec. — see Panel.

On to Thornton Cleveleys who have a talk on April 1 entitled “How to Blow up your Rig”; the Bank Holiday results in no meeting on April 8. April 15 is a talk by the local crime prevention officer, and on 22nd they have an auction. April 29 is the date for the advanced Morse class. Venue is the 1st Norfolk Scout Hq., Carr Road, Bispham, Blackpool.

Next we come to Todmorden; and here we must refer you to the Hon. Sec. — see Panel for the details.

New Home

It is nice to know that Torbay have found a new home at last; they are now at the E.C.C. Social Club, Ringslade Road, Highweek, Newton Abbot, where they have a main meeting as usual on the last Saturday in each month — AGM in April — plus the weekly natters on Friday evenings. The club also puts out an Award, for working 30 members of the gang since January 1, 1985. Details from the Hon. Sec. — see Panel.

April 23 is the date when Verulam will be having G3NRW to give a talk on AMTOR, at the R.A.F. Association, New Kent Road, St. Albans, where they gather on the second and fourth Tuesday each month.

WACRAL is the club for committed Christians worldwide. All the details from the Hon. Sec. — see Panel.

Now we must head back up to Wakefield, and the club at the Community Centre, Prospect Road, Ossett. April 2 is the AGM, and on 16th they have an on-the-air/natter night. April 30 sees a talk on amateur radio in SE Asia.

For the details of the Welland Valley group we must refer you to the Hon. Sec. — see Panel for the needful.

Although the meeting due on April 5 is cancelled due to the holiday, they still have April 19, for the AGM. The Hq. is at the club premises at Adult Annexe, Quarry Road, Tunbridge Wells. This means, of course, West Kent.

April 9 at Westmorland will be a visit from Oldham Batteries who will give a film and talk about how their sealed-for-life batteries should be used for amateur radio. Venue is the “Strickland Arms”, Sizergh, near Kendal, as ever.

Wirral now has its place at Heswall Parish Church Hall, on the first and third Wednesdays. No idea about the programme — no one told us!

Wolverhampton has a talk on third-method SSB by G6UDX on April 2, and no meeting on 9th. April 16 is informal, and on 23rd it is the turn of Wolverhampton Repeater Group to do their thing. Finally, on April 30, the home-built equipment competition.

At Worcester they have a club night on April 29 at the Oddfellows Club, New Street; the informal is at the “Old Pheasant” in the same street, on April 15.

Every Wednesday evening is the route for Worthig at their Hq. at the Parish Hall, South Street, Lancing, West Sussex. They also go in for activity on the air in a big way by nets on several bands. All the details from the Hon. Sec. — see Panel.

On to Yeovil and the Recreation Centre, Chilton Grove, Yeovil. April 11 is AGM night, and on 18th G3YM talks about mutual coupling between aerials. April 25 is a natter session and on May 2 G3MYM leads his previous talk on to Yagi aerials.

Every Friday the York lads head for the United Services Club, 61 Micklegate, where they usually have something interesting going on. More details from the Hon. Sec. — see Panel. One thing we notice is the “home-brew night” on April 19 — whether wine, beer or rigs is not mentioned!

Finally 308, where it looks to be the fourth Tuesday in each month at the Coach House, Church Hill Road, Surbiton. More details from the Hon. Sec. — see Panel.

QRT

That’s the end of another pile of mail. Send your information to arrive by the dates shown in the box, addressed as always to “Club Secretary,” SHORT WAVE MAGAZINE, 34 High Street, Welwyn. Herts. AL6 9EQ. Meanwhile, get the gardening tools sharpened up — you’ll need ‘em!

Mobile Rallies, 1985 — a first listing

April 8, North Wakefield R.C. Amateur Radio and Computer Fair, Bretton Hall College, Bretton, Wakefield (4 miles from J39 on M1), doors open 11 a.m., radio, computer and electronics stands, bring-and-buy, RSGB bookstall, refreshments, family attractions, good parking, free admission, talk-in on S22 and GB3WU (RB15). Further details from Steve Thompson, G4RCH, on 0532-536633. April 28, Southend D.A.R.S. Rally, “Rockway”, Rochford, Essex, 10 a.m. to 5 p.m., trades stands, refreshments, free parking, venue will be signposted locally with talk-in on 2m. Further details from Bryn Llewellyn G4DEZ (0702-617749), or Brian Wood G4RDS (03745-50494).

May 5, Anglo-Scottish Rally, Tait Hall, Kelso, Roxburghshire, 11 a.m. to 5 p.m., admission £1 (children, YLs, XYLs free), usual stands, CW testing station, raffles, bar, snacks, talk-in on S22. More information, including accommodation, from Andre Saunders GM3VILB, Physics Dept., Kelso High School, and Bruce Cavers GM4UIB QTHR (tel: 0573-24664 and 24654 evenings only).

May 12, Swindon D.A.R.S. Radio and Electronics Rally, Oakfield School, Marlowe Avenue, Swindon, doors open 10 a.m., admission 50p with free parking, refreshments, family attractions, talk-in on 2m. (S22) and 70cm. (via GB3TD). Further information from Ken Saunders, G8SFM, on 066689-307.

May 26, Maidstone A.R.S. Rally, Melrose Close, Cripple Street, Maidstone, doors open 11 a.m. More details from Alan Judge, G6FZD, on 0622-50709 or QTHR. June 30, Buxton Mobile Rally, Pavilion Gardens, St. John’s Road, Buxton, 10.30 a.m. to 5 p.m., admission 50p, children free, trade stands, bookstalls, refreshments, on-site and local family attractions. More details from Dave, G6MIF, 0298-6174. July 21, Anglian Mobile Rally, Stanway School, Colchester, Essex, 10 a.m. to 5 p.m., talk-in on 2m. Further details from G6HQL, 0206-860403.

July 28, Abergavenny, Brecon and Pontypool Rally, Market Hall, Abergavenny. Full details from C. Lonsdale, GW8ROW, 27 Jerusalem Lane, New Inn, Pontypool, Gwent NP4 ONP. May 5, Anglian Mobile Rally, Stanway School, Harlow, Essex, 10 a.m. to 5 p.m., talk-in on 2m. Further details from Andre Saunders, G6HQL, 0206-860403. More rally dates will appear in future issues. If you have not yet notified us of your rally, now is the time to do it! Send the information in an envelope clearly marked “Mobile Rally”. And don’t forget we are always glad to receive photographs of rally events for possible publication.

Morse Tests in Swindon

Ken Saunders, G8SFM, tells us that he has again been able to arrange for Morse tests to be held at this year’s Swindon Rally on 12th May (pass rate last year, 85%). The tests can be booked by sending the normal application form and fee of £15.00 (payable to “British Telecom International”) to G8SFM, “Tamarisk”, Tethy Lane, Leighton, Glos. GL8 8UP; he can also supply application forms if necessary. Venue for the Rally is Oakfield School, Marlowe Avenue, Swindon.
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