Microwave Cumulative Information Sheet 5/80

This is the fifth information sheet which we are producing before each microwave cumulative contest. The next sheet will be produced towards the end of October when the results of the contest can be published, together with your news, comments and technical ideas, plus your report on this last cumulative.

Round Tables: There are three round tables scheduled for the coming months. These invariably provide an excellent opportunity to meet other microwave amateurs and discuss all sorts of topics. A wide selection of testgear facilities will be provided, and you are encouraged to bring your gear along to show everyone else. The meetings are:

Saturday 11 October at Sheffield University. This will include a discussion on 24 GHz equipment and techniques. Further details from Barry Chambers, G8AGN (tel 0742-304888).

Sunday 19 October at Post Office Research Centre, Martlesham Heath, Ipswich. This is a ticket-only event; free tickets are obtainable from John Garrett, G3RHP, Church Farm House, Otley, Ipswich, Suffolk (tel Ipswich 654712 at work or Helmingham 403 at home). Details of the programme were given in the "Microwaves" column in September Radcom. Those of us who went to the first event last year were very impressed by the facilities and friendly atmosphere.

Sunday 9 November at IBA Crawley Court, Winchester. Another of the popular Winchester events, organised by Don Hayter, G3JHM. Details of the programme will be announced in the next newsletter.

Also on Sunday 5 October near Paris - contact F6DLA for details.

Alpha Award: Ray Evans, G3LQC has arranged for the Alpha Award to the winning station in the 10 GHz cumulatives to be presented at the Military Microwaves Conference on Thursday 23 October. The presentation will take place at the Alpha stand in the trade exhibition, and the conference is being held at the Cunard International Hotel, London. Any amateurs who will be at the exhibition would be very welcome to attend the presentation. Further details from G3LQC in early October (tel 0993-850576 at home or 0993-71301 at work).

Dubus Information: The 2/80 issue of this journal has just arrived, and contains some interesting items which are listed below. If anyone would like further information, please contact G4CNV.

1. Multi-band radiator 1-12 GHz by DL7QY (double-ridged waveguide horn, suitable for a multi-band dish feed).
2. Radiator Systems for Parabolic Reflectors by DB6NT (dipole and reflector feed for 1.3 GHz, "beer-can" feeds for 1.3, 2.3, 3.4, and 5.7 GHz).
3. A High Sensitive RF Meter by HB9MIN (thermocouple design, 10 MHz to 14 GHz, 1 W to 10mW).
4. Logarithmic AF Level Meter by LA8AK (recommended for beacon-monitoring applications).
5. Troposcatter by G3YGF (theory of and how to predict troposcatter path losses).

Also included in the journal is the usual operating news. UK stations are conspicuous by their absence from the microwave reports, and it would be nice if we could contribute some news of our activities. Information should be sent to:

Claus Neie, DL7QY
D7181 Rudolfsberg 24
West Berlin.

The UK distributor of DUBUS is Bob Mchenry, G3NSM whose address is 26 Charlbury Rd, Oxford, OX2 6UU.

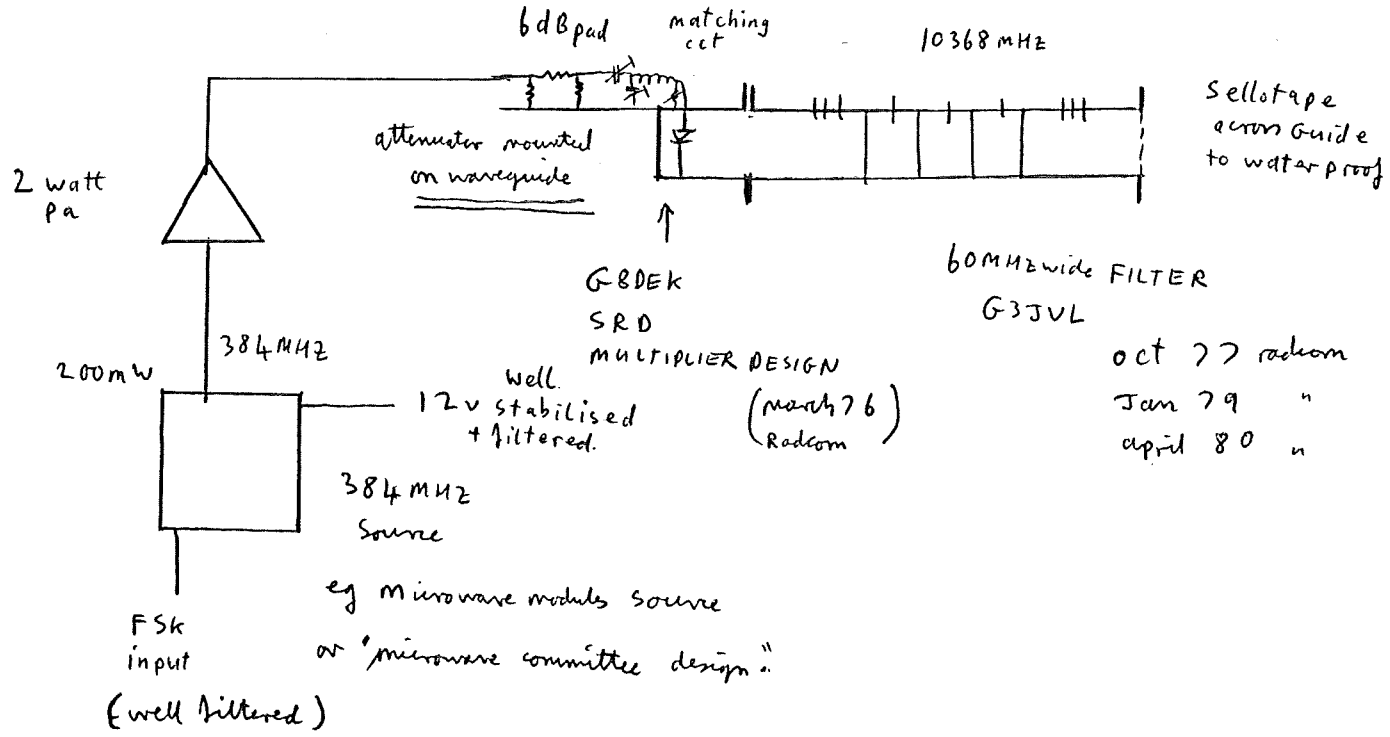
Microwave "Area Representatives": In the August "Microwaves" column, a suggestion was published that a list of relatively experienced microwave operators should be compiled, so that these people could act as sources of help and advice for the newcomer. There have been one or two replies, but we could do with several more volunteers if the scheme is to be a success.

Beacon Building: Not everyone appreciates just how useful beacons are - for checking receivers, for use as calibration references for pointing antennas, and (perhaps most important) long - term monitoring as part of propogation experiments. For these reasons, the microwave committee is very keen to promote beacon building, and would be prepared to help with design and hardware if at all possible. 10 GHz narrowband beacons (for which the design is fairly straightforward) would be particularly welcome. If anyone is interested, please contact G3YGF, G3WDG or G4CNV. NB: It is fairly straight forward to combine wideband and narrowband sources into the same aerial, or to incorporate narrowband into an existing beacon, provided the antenna will work at 10368 MHz.

Do not be deterred by the prospect of having to build a high power multiplier chain for beacons. It really is not essential - 5 mW output is very easily obtained, and this is still potentially better than a wideband system running 100 mW as shown below:

	Bandwidth	Power	Rx Threshold	
WB	300 kHz	100 mW	10 (FM)	
NB	3 kHz	5 mW	0 (CW)	
NB Advantage	+20 dB	-13 dB	+10 dB	= +17 dB

The design suggested below is useful either for a beacon, or a personal marker/ CW source:



IARU Contest: Had you noticed that 10 GHz is included in the IARU SHF contest? The contest is on 4/5 October (1600 to 1600 gmt) and the multipliers are:

432 MHz	1
1296 MHz	5
2.3 GHz	10
Higher bands	20

Certificates will be awarded to the leading station on each band. There are single and multi-op sections. Perhaps we could suprise the adjudicators with a number of entries from G on 10 GHz (and any other band). Several stations have already stated their intention to go out on 10 GHz.

Oscillator Quality on 10 GHz: Several signal sources have now been heard on 10 GHz narrowband and it would be interesting to compare the quality of the signal obtained. We would like to hear of peoples experiences with various oscillator circuits, both homebuilt and commercial. Several stations have had fairly good results using the Microwave Modules drive source.

The drive source which is being developed by the authors in conjunction with the microwave committee is nearing completion, and subject to the availability of certain components, it is hoped to make it available in the next month. It has an extremely good note, and is very stable: temperature drift using a standard crystal is 2 kHz/ C (at 10 GHz), and 3 kHz/Volt on the supply. Some vital points for all microwave drive sources are:

1. Decouple the supply very thoroughly - any rf or af on the supply can produce very bad FM noise sidebands at 10 GHz.
2. Make all components in the oscillator mechanically rigid, including the fixing of the board to the box, and the lid on the box. Bad contacts here can cause the frequency to jump.

Other News: G8AGN is offering listings of a Basic program for calculating line of sight or troposcatter system budgets. Contact him QTHR.

DL3ER is active with a 1.5 metre dish and 12 W narrowband.

G3JHM has offered to supply xerox copies of a map of the Channel Islands with an NGR grid on then (on receipt of an SAE). This is very useful for calculating bearings to the Channel Is. Don also reports he has just received his 5 qth locator award for operation in France.

Reports From the 4th Cumulative

1. G3THW Located on Malvern Hills, had 2 way qsos with GW8SHF/P and GW3IZD/P on Blorenge, S Wales, G3FYX/P at Charterhouse, and G8ANZ/P on Cleeve. Also one way qsos with G8CXK/P, G8EXL/P and G4EBF/P at SP355428 (N Oxon), being unable to make it both ways due to a tx fault.
2. G3RZD Ern reports poor conditions, working G2DSP/P, G4ETU/P, G3IFF/P and G3KSU/P (73km). F3LP, F8WN, F6BFE, F6DLA were active but Ern did not manage any qsos to France. He also reports that he and G8GKV are very willing to go out for tests any time of the year, and also on 24 GHz when the gear is finished.
3. GM3YGF Located near Peterhead, NE Scotland, had two 2-way qso's with GW3FYB/P and GH3HYX/P at 166km each over a sea path down to near Edinburgh. Both the stations worked running about 1 mW from a JVL mixer and were 10 to 20 dBn.
4. GW3PPF & GW8NBK Located at Priscelly, S wales, both worked G8AXE/P in EI'land at 162 km, giving Johnathan his 150 km award. They also worked G3ZME/P on Snowdon at 130 km
5. G4CNV Located Hardy's Monument, Dorset, worked G3KSU/P, G3FYX/P and best dx F0AKD (121 km) via superrefraction, although GB3ALD was not audible. Hugh also listned for F0AKD on 24 GHz, though nothing was heard, and had a one-way qso with G3JVL on 10 GHz narrowband. Hugh packed up at 5pm and missed the chance to work GW3PPF/P and GW8NBK/P on Mynydd Maen - a lesson to be learned there.
6. G8ADP Clive heard G8ANZ running 3 W of narrowband, but was unable to make a two way qso, even though similar powers were used at each end.
7. G8GKV Ern was very dissapointed with conditions also and several attempts were made with F8WN and F0AKD. F8WN was not able to hear GB3IOW at the time; thus only locals were worked - G4ETU/P, G2DSP/P, and G3IFF/P. On 16th Aug, however, both F8WN and F1BQ near Octaville were very strong - audible on open waveguide from Mill Hill, signals increasing in strength very rapidly corresponding with a drop in air temperature in the evening.
8. G8GLO Now has wideband gear and has operated from Dial Hill, Avon.
9. GJ8KNV Phil reports working F0AKD at 56 km

10. F6DLA William reports he is now qrv on SSB and CW with 50μW and a 50 cm dish. On 23 Aug from ZJ34a heard G3JVL and on 24 Aug had the following qsos: F8WM/P (103 km), G3KSU/P (111 km), F3LP/P (111 km), all on wideband, plus on narrowband FOAKD/P (7 km), and G3JVL (133 km) one way. Also F3LP was heard on narrowband over the 111 km path. William also says he hopes to be at the next Winchester round table, along with several other French amateurs. Location for cumulative La Pernelle.
11. F6BFE Located La Pernelle, 6 km SSW Bardfleur, worked F8WN/P one way, G3KSU/P two way, F3LP/P located LeHarvre, AJ31j (111km) and FOAKD/P located 3k N Barfleur, ZJ21a (7km), both 2 way qsos. Noel reports he is using 20 mW on tx to a 26 cm dish, and 100 MHz IF on rx.

Also we received the following reports to late for inclusion in last months newsletter.

1. G6XM Located Broadway Hill for 3rd cumulative, and worked the following stations: G4CNV/P on Walbury, G8RHI/P also on Walbury, G3PPF/P and G8NBK/P on Coombe Jibbet, G3ZME/P on Brown Clee, GW3YGF/P on Mynydd Maen, G3YJH/P on Titterstone Clee, G8EXL/P, G4EBF/P and G8CXK/P all located in N Oxon (SP356427).
2. F6DLA In 3rd Cumulative was unable to operate due to storms, but in 2nd was able to work 2 stations from Col de la Grouzette - F1AQS/P and F1FAW.

Many people still forgot to send in envelopes or money for the newsletter. We would like to keep the newsletter going over the winter, although possibly distributed a little less frequently than at present. If it is to continue, please show your support by sending us any news, results etc. A minimum of 15p is needed to cover the cost of duplicating, in addition to postage, but donations above this will be gratefully accepted to enable as wide a circulation as possible to be maintained.

We will publish the next issue as soon as the results of the contest are available, which should be approximately the third week in October. Thus the deadline for the next issue is Saturday 18 October. The address for all contributions is

J. Gannaway, G3YGF
17, Crick Road,
Oxford.

73 de G3YGF, G4CNV and G8RHI.