



An Amateur Radio publication for the Microwave enthusiast

# MICROWAVE NEWSLETTER

Published by the Radio Society of Great Britain and edited by G3PHO and G8AGN.

Lambda House, Cranborne Road, Potters Bar, Hertfordshire EN6 3JE

## FROM THE EDITOR

2000 – MARCH



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Two events are coming up in the very near future ... the Microwave Round Table meeting and Dinner to be held at the Rutherford Appleton Laboratory on the 1st/2nd April, and the first of the "season's" contests, the 24/47GHz Contest on April 16th. We hope both events will be very well supported by as many of you as possible. Full details of the RAL meeting can be found inside this issue. Details of the contests were published last month and also appear on the Internet (see lower part of this page).

The UK contest calendar and rules for 2001 have to be finalised over the next few weeks. Your last chance to air your views in public will be at RAL. Only a handful of written comments have so far been received by the editor, even after the mention in last month's Newsletter, thus indicating that the vast majority of readers are happy to continue with the present pattern into next year. There's more on this within the following pages ...

Many thanks to all who have contributed to this month's issue and a special word of thanks to Charlie, G3WDG and Tim, G3KEU who have provided the Newsletter with technical contributions. There are more of you out there who could do the same... come on, don't be shy!

The latest microwave news can always be found, in between issues of this newsletter, on the Internet at the following URL: <http://www.g3pho.free-online.co.uk/microwaves/>

Contest rules and dates, together with beacon and technical information are also permanently stored there.

News, views and articles for this newsletter are always welcome. Please send them to G3PHO (preferably by email) to the address shown Below. The closing date is the Friday at the end of the first full week of the month if you want your material to be published in the next issue.



G3PHO: Peter Day 0114 2816701  
G8AGN: Barry Chambers 0114 2304202

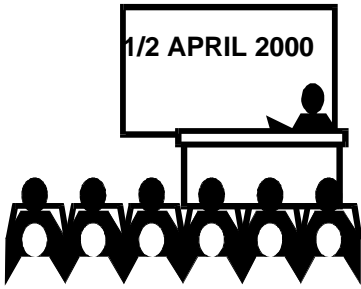


G3PHO: Email: [g3pho@geocities.com](mailto:g3pho@geocities.com)  
or [p.day@virgin.net](mailto:p.day@virgin.net)  
G8AGN: Email: [b.chambers@sheffield.ac.uk](mailto:b.chambers@sheffield.ac.uk)



G3PHO, Peter Day,  
146 Springvale Road,  
Sheffield, S6 3NU, UK.

**SUBSCRIPTION ENQUIRIES SHOULD BE SENT TO RSGB HEADQUARTERS AT THE ADDRESS SHOWN AT THE TOP OF THIS PAGE AND NOT TO THE EDITOR ..**



**RSGB  
MICROWAVE ROUND TABLE MEETING  
RUTHERFORD APPLETON LABORATORY  
DIDCOT,  
NEAR OXFORD, UK**

**\*\*\* RAL 2000 - Tenth Birthday Celebration \*\*\***

**Dinner: Saturday April 1st at 1930** - This is no joke! - excellent value as always at RAL, with a Real Ale bar.

Come on, all of you microwavers. You always told us that the food at RAL was excellent value for money. See what they can do when they really try! The catering service frequently lays on dinners for scientific celebrities. This time they are doing it for YOU. The exact price is not yet fixed, but will be around £12.50.

**Microwave Round Table: as usual on Sunday April 2nd at 10.00am** ( plenty of time to recover from that hangover!)

The RAL Microwave Round Table is one of the premier UK amateur microwave gatherings. An interesting programme of talks has been arranged for you. As usual there will also be a good selection of top-of-the range test gear for you to use, as well as the usual excellent "Bring and Buy" fleamarket. Don't miss it! G4ASR will be there!

**Overnight accommodation:** has also been arranged at a reasonable price. There are a limited number of single rooms available on the RAL site - nine at the time of writing - available on a first come, first serve basis. The room costs £22. Breakfast is not included (a la carte from the Restaurant).

For those wishing for more luxurious accommodation, or perhaps too late for one of these rooms, we recommend "The Bear Hotel" on the central square, Wantage, about 6 miles from RAL. This attractive 16th century coaching inn charges a special rate of 32.50 pounds for Bed and Breakfast on Saturday night. It has a comfortable bar featuring Courage Director's Ale. Other hotels or B&Bs are, of course, available in the area.

**Please inform** myself (G3NAQ), Jon GW4LXO, or Mike G0MJW if you are interested in coming - if we get insufficient interest, we will have to cancel the dinner.

**For details of how to get to RAL:** please email G3NAQ

We are sure you will enjoy an interesting evening.

**Geoff G3NAQ: E-mail [g.h.grayer@rl.ac.uk](mailto:g.h.grayer@rl.ac.uk), or telephone 01488 638 792.**



## FOR SALE and WANTED

### FOR SALE

Bill James, G6XM is disposing of the following very useful items of microwave test equipment:

- **HP431 POWER METER** CT495  
10uW-10mW in 7 ranges. With spare thermistor head.  
**Price £60.00**
- **Marconi Power Meter** Type 6460/1  
10MHz – 18GHz, 0.03uW to 3 watts  
**Price £65.00**
- **Hameg 60MHz Oscilloscope**  
**Price £75.00**
- **Adret 5401 VHF Synthesizer (90-120MHz)**  
240VAC mains. 6mW o/p

All items are in good working order and the price includes handbooks for all except the Adret. Unfortunately Bill is unable to arrange delivery so he can only ask buyers to collect personally or arrange collection. Cash deals only please. Contact him at 56 Fern Meadow, Crediton Road, Okehampton, Devon EX20 1PB.  
Telephone: 01837 52923

### FOR SALE

G4UVZ, (Adrian.Whatmore@tauntonsom-tr.swest.nhs.uk) has for sale the following **10GHz QRO set up.**

10 watt TWT (sma connectors) PLUS modified 24 volt BT PSU, full metering, Anode and Helix front panel adjust. PLUS 2 off 12 volt gel batteries, sufficient for a day's portable operation. **Price £110 the lot.**

Telephone (evenings): 01823 421751  
**(Also Wanted...23cm TV equipment ...JVL loop ant, etc)**

### WANTED

I am trying to get QRV on 24 and 47GHz for the summer, and I would very much like to lay my hands on one of the 22/23GHz Teletra "White Boxes" that were available a few years ago. I am interested in the Relay, Filters and Transitions. I am sure that many of these units are stashed away in people's lofts, not being used! Please email Paul Longstaff (G6 UAJ) at: Paul.Longstaff@vf.vodafone.co.uk

### Grand Microwave Sale....

**G4PBP is not selling-up and leaving the planet. Just too many projects !!**

- **23cm amp**, 2x3cx100a5, silver plated G3VVB type. New and unused **£100**
- **13cm amp**, 1x3cx100a5, silver plated G3VVB type. Built on sub-chassis with screens + blower. Tested to 30w. **£100**
- **PSU** to run both of the above. (~1KV). Neatly built into low profile case. **£70**
- New Bob Platts **23cm, high gain, low noise pre-amp.** **£50**
- **24GHz transverter.** This is the basic transverter with no RX/TX amplifiers. G4DDK LO + G3WDG x5 multiplier to 12.048GHz + DB6NT mixer. All stage built in an IP67 enclosure for masthead mounting. V. neat. **£120**
- **3cm. G3WDG transverter** . Add an IC202 and 12V and you're away. Again in an IP67 box for masthead. Basic unit 250mW **£150** Plus G3WDG 1W **£250**
- **3cm TV TX** housed as above for masthead mounting. Feed 15V + 1.5 - 4V from the modulator via sat-TV coax and you're away! Currently on 10425MHz, tunes +/- 15MHz.
- Basic 250mw unit. **£75** . Plus G3WDG 1W **£175**
- **G3WDG 10GHz multiplier.** **£30**
- **250mw 10GHz unit (ex M/A Comm 'White Box)**  
Nice TX, circulators and filters. 140 / 70 MHz IFs. **£45**
- **10 + 12 GHz 3 cavity filters** (professional), SMA. Very easy and predictable to tune. **£25**
- **Sanders 5440c Noise meter.** IF tuneable 10 - 250 MHz. Bought at Dallas but the head was DUFF !!! V. clean **£50**
- **Hi-Gain HF vertical** for when you get fed up of microwaves. Clean + not used much. Guess why ! **£80**
- Lots of **WG16 components** + Microwave **coax relays** etc. **£phone**

**Telephone: 01902 731502 or**  
**Email: russ@g8bhh.demon.co.uk**  
Visitors most welcome by appointment

## FOR SALE and WANTED

**For Sale:** Undrilled pcbs for the G4COM Noise Alignment Aid (as in the RSGB Microwave Handbook). Price @ £5.00 inc. post and packing.

**Or exchange** for a G4DDK004 LO board.

**Wanted:** Has anyone replaced the LCD readout in an FT290 TX/RX, either with an internal or external alternative? **Please contact Geoff Day, G4DED, QTHR or telephone 07931 528269**

## MICROWAVE UPDATE PROCEEDINGS...

Back copies of these very valuable sources of information are available from ARRL. Your editor recently ordered three volumes to complete his 1989 to 1999 collection. From ordering over the Internet and receiving the books via surface mail took just three weeks. In fact, the books were posted the day after ordering. Prices vary according to the year required.

Contact ARRL at <http://www.arrl.org>



MICROWAVE NEWS FROM HERE AND THERE ...

### Australian amateurs lose some frequencies:

The Australian Communications Authority has withdrawn Australian amateur radio access to the frequencies between 2.302 and 2.400GHz. This had been shared on a secondary basis with pay-TV distribution systems, among others. This part of the spectrum will now be allocated by spectrum licensing. In addition, frequencies between 3.425 - 3.4425GHz and between 3.475 - 3.4925GHz have been withdrawn in some of the major Australian capitals and regional areas, again for spectrum-licensing purposes.

### Animated hourly cloud cover satellite images

and rainfall radar images for the UK are now available at:-  
[http://www.bbc.co.uk/weather/uk\\_radar.shtml](http://www.bbc.co.uk/weather/uk_radar.shtml)  
<http://www.bbc.co.uk/weather/satellite.shtml>

The latest image is usually available 45mins after the hour. Further info in [news:uk.sci.weather](http://news.uk.sci.weather)

### FROM THE DAILY TELEGRAPH 26 FEBRUARY, 2000

The Government proposed a three month delay to the auction of high-speed wireless telecommunications licences at the 3.4GHz frequency despite earlier warnings from Chancellor Gordon Brown that Britain was lagging globally in internet access technology.

## Precautions using Mitsubishi RF Power Modules

~by Charlie Suckling, G3WDG

Many stations are using RF power modules very successfully, but on occasions there have been problems where modules have failed or degraded. The most likely cause for this is overheating, particularly where modules are driven hard or are operated continuously. The extract reproduced below may be useful regarding this and other general precautions.

It is important to ensure that the heatsink surface is flat and free from burrs, and that the heatsink is adequate to dissipate the heat generated by the module. Also note that Mitsubishi recommends the use of thermal grease to improve the heat conduction from the module. Mitsubishi states that the temperature of the module flange should not exceed 90C or irreversible damage may occur. I have recently had occasion to dismantle a degraded M57762 and found a cracked chip capacitor in the output network and some fried thick-film resistors, so this may well be true!

Under high drive conditions, the M57762 module, used by many stations on 1.3GHz, may dissipate over 40W of heat. The heatsink specified in the article in last month's Microwave Newsletter above may not be large enough for continuous use. Also note that for optimum operation, the heatsink should be mounted with its fins vertical so that air can flow freely and achieve optimum cooling. Measurements show that mounting the heatsink flat with the fins downwards will increase the thermal resistance by as much as 50%!

It has been found that as supplied the modules are slightly bowed, which means that the centre of the heatsink may run considerably hotter than it does at the ends, near the mounting screws. Measurements with a thermocouple have shown that centre of the module flange seems to run some 20-30 degrees hotter than the heatsink to which the module is bolted, suggesting that the heatsink itself should not be allowed to run hotter than about 60C. The temperature of the flange near the mounting screw only runs 10 degrees or so hotter than the heatsink and may lead to an optimistic view of the temperature of the flange where it really matters!

Mike Willis GOMJW has come up with an interesting suggestion to prevent operation continuing if the heatsink gets too hot. This is to use a bi-metallic thermal switch bolted to the heatsink to shut down the module if the heatsink gets too hot. Once the heatsink cools, the switch resets automatically and the PA can be used again (and the overs kept shorter!). Suitable switches are available from Farnell and RS at relatively low cost. If there is sufficient interest, these could be stocked by the Microwave Committee Components Service (eg a 50°C NC type which could be connected in series with the T/R line or power supply to the module).

One option, suggested at the VHF Convention by Andy Talbot, G4JNT, is to use forced air cooling of the heatsink. This should enable a physically smaller (and cheaper) heatsink to be used. Various small fans are available quite cheaply these days (eg computer cooling fans). This is an excellent suggestion for situations where air can move freely around the PA.

In applications where two modules are mounted on a common heatsink for combining, excessive temperatures are even more likely and great care needs to be taken in selecting an adequate heatsink.



## BEACON NEWS

### **GB3CCX Cleeve Common:**

The Cleeve 10GHz narrowband beacon was taken down in early March for repairs. It appears that the MGF 1801 PA stage had failed. Roy, G3FYX, informs us that he hopes to have the equipment back in service by Easter.

### **GB3IOW Isle of Wight:**

The IOW beacons/repeaters have been refurbished but the 10GHz beacon is still operating at reduced efficiency due to damage to the Waveguide 16 feed.

### **G8VZT Shropshire:**

Dave Hall, G8VZT, has a personal, attended beacon on 10368.254MHz. Located at IO82SQ76, it runs 40 milliwatts to a small sectoral horn at some 7 metres above ground level. In spite of the low ERP, it seems to radiate very well and has been heard on a regular basis at the West Yorkshire home station of Paul, G0HNW, in Holmfirth.

The horn favours the NE to SE quadrant. The FSK ID includes Dave's callsign and locator. Reception reports would be very gratefully received. G8VZT is QTHR.

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## 10GHz 10 watt PA modules

The 10 watt RF amplifiers described on page 2 of last month's newsletter have had a price increase! They now cost 1200 DM (£400 sterling) but still represent a very good buy, providing twice the output of the similarly-priced 5 watt PAs available from other German sources.

These 10 watt amplifiers are supplied brand new, in the manufacturer's packaging. We understand that they are fully guaranteed.

Jochem Zilg can supply a cheaper version, still brand new but in need of tuning down into the 10GHz amateur band. At 800DM (£266) they are a real bargain. However the tuning will invalidate the guarantee so only follow this route to 10GHz QRO if you are competent in making the necessary changes! Joachim can provide ready modified Pas for 900DM (£300).

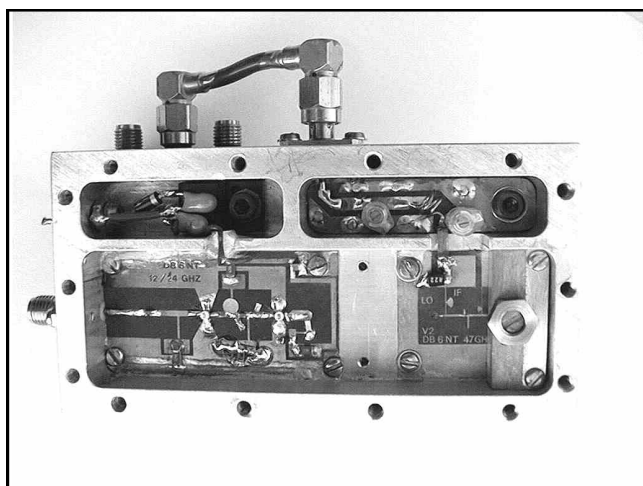
## CONGRATULATIONS!

... to Martin Farmer, G7MRF, David Hall, G8VZT, Dave Woodward, G0IVA and Paul Widger, G0HNW, on being the recipients of the Frazer Shepherd Award for 2000. This award was made in February, at the Sandown VHF Convention, in recognition of their combined group achievements on the 47GHz band. Over the previous 12 months or so they had constructed narrowband equipment for 47GHz and made extensive field tests, leading to the setting up of a new distance record for that band... 161 kilometres.

Their work has encouraged several other operators to get going on 47GHz. Martin, in particular, has been instrumental in seeing that the microscopic mixer diodes have been firmly fixed to the DB6NT mixer boards of several UK amateurs!

During 2000 the group plan further tests, using recently constructed higher power equipment.

Their exploits will continue to be chronicled in this newsletter of course. For those of you who missed reading of their activities during 1999, you can find a good deal of information on the Internet at the website URL shown on the front page of this issue.



The photo above shows a DB6NT 47GHz transverter, as used by the award winning group. The lower left compartment of the milled box contains the local oscillator multiplier stage. The compartment at lower right houses the 47GHz diode mixer pcb.

# Easy 3db splitter for 10GHz

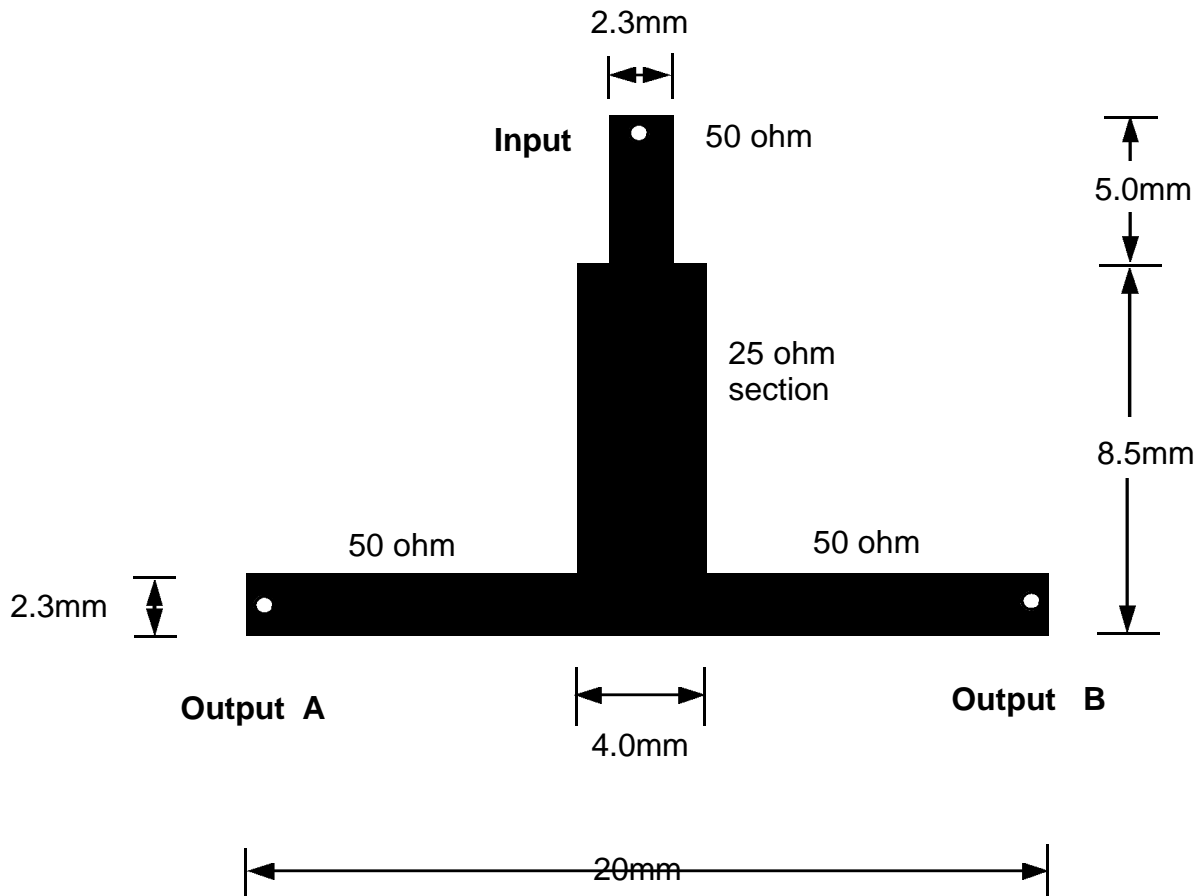
~ a simple solution from Tim, G3KEU

This simple 3dB divider/splitter arose out of some casual conversation on the 80 metre UK Microwave net, one morning! Tim had etched the board some time ago. The dimensions given below are as measured with calipers from the actual PCB.

Occasionally the need arises to divide the output of an RF source to feed, for example, the 10224MHz LO inputs of separate receive and transmit mixers. Less common is the need to split the received signal for distribution to two receivers. In both cases, a 3dB loss is obviously incurred when comparing output to input levels.

The PCB layout shown here (not to scale) can be etched on RT 5870 Duroid. If other types of microwave printed circuit board are used, the dimensions shown below would need to be recalculated. With care, the lines could be cut, rather than etched, using a sharp scalpel and a hot soldering iron to encourage the surplus copper laminate to lift.

Once etched or cut, the pcb should be soldered into a small tinplate or brass box. Sma connectors can then be soldered to the box and directly to the ends of each stripline forming the arms of the divider.



# THE GREAT CONTEST and MICROWAVE ACTIVITY DEBATE!

## ... A RESUMÉ OF COMMENTS SO FAR RECEIVED FROM READERS

Since 1998 the UK microwave contest /activity day programme and rules have remained largely the same as those published for 2000 in last month's Microwave Newsletter. As far as one can ascertain, they seem to have been successful in their main aims... to encourage activity on bands other than (but including) 10GHz, to stimulate millimetre wave construction and operating, to offer a wide choice of contests, to link up with Continental European contests wherever possible but to avoid a plethora of contests weekend after weekend.

Within the next few weeks the programme and rules for 2001 must be finalised for submission to the RSGB VHF Committee who prepare the Rules and Contest Calendar supplement published in RadCom during early Autumn. The "lead times" for RadCom are such that we cannot delay reaching a consensus regarding next year's microwave contests. Open forum discussion at the Martlesham Microwave Round Table produced little in the way of firm alternatives to the present pattern. Indeed, the contest co-ordinator received many verbal comments to the effect that we should carry on as at present.

Since then, however, a handful of alternative ideas have been received, mainly via email. In this summary discussion we put forward the concerns and idea of those who would like to see changes in the programme and rules. Please finalised your comments to the editor as soon as possible but remember that time is very short and the opportunities for open forum discussion are now limited to one ... the Round Table at RAL, to be held on 2nd April this year. After that event the final edition of the rules and contest dates for 2000 will be drawn up and sent to VHFC.

**APOLOGIES TO READERS WHO HAVE ALREADY SEEN MUCH OF THIS DEBATE OVER THE INTERNET. HOWEVER, MANY OF OUR READERS DO HAVE NOT SUCH A FACILITY SO WE WISH TO EXTEND THE DEBATE TO THEM ...**

### From Don Hayter, G3JHM

**1.** Currently, the UK is the only European country not aligning its national microwave contests with the rest of the Continent.

I.e. the May/October contests only partially overlap with the IARU times. NOTE the period of the Trophy contests does not TOTALLY align with the IARU one.

The UK is NOW a very minor player on Microwaves compare the 250 DL home stations qrv on 10GHz rain scatter with the absolute maximum of 20 here in the UK! Recent monitoring of the CONVERSE network/DX Cluster indicates that only 5-6 microwave operators even regularly use the Packet system.

In DL/PA there is co-operation to track major storms via packet and many additional contacts result.

As a result of no [contest] operation prior to 0900 UTC we almost always miss the morning propagation lift when most long distance propagation occurs. I fully realise the problems of overnight operation especially single handed or senior operators but we should not severely limit our possibilities.

**2.** We should also align our weekly activity periods to tie in either with the new Dutch Tuesday evening

activity period or with the French Sunday morning session. The latter begins early often at 0600 UTC and continues until at least 1000 UTC. Last year I often heard real DX tropo contacts being made via 144.390MHz over distances of 300-600 kilometres in France, a very rare event in the UK. Also while monitoring GB3KBO and GB3MHX beacons when good tropo ducting conditions existed early around 0500 UTC, the conditions have usually faded completely by 0900 UTC, the start time for UK 10GHz contests sessions.

**3.** All our national 10GHz & all band tests contests should align with at least our PA /DL friends and the French will almost certainly follow, again increasing the scope for international contacts.

### DON'S PROPOSALS:

1. Completely align UK uWave Contests with the IARU ones, even overnight.
2. Start the contests earlier, say at 0600GMT
3. Align UK contests and activity evenings with those of PA/DL/F

## FROM PETER DAY, G3PHO

In reply to G3JHM's comments on the previous page (the numbers correspond to Don's)

1. The May Trophy Contest is run partially in parallel with the RSGB 432 up contest. As far as I am aware there is NO Region 1 contest on that weekend, although there are national contests in countries such as PA, DL over that weekend. There it cannot align itself with a non-existent IARU contest. The Trophy Contest has to compete with other RSGB Trophy events run at the same time. The reason it is on a Saturday and finishes late Saturday evening is that it is unreasonable to expect portable 10GHz stations to stay out overnight unless they are part of a 432 up Contest group. As a rule there are more portable UK 10GHz stations active than home stations ones during the scheduled contest days. A study of the 1999 activity pattern shows 12 entries to the 10GHz Cumulatives, of which 7 were portables. In the 10GHz Operating Ladder for that year there were 17 entries of which 11 were portable stations. Portable operators must therefore be catered for primarily as it is much easier for home stations to fit in with a portable-orientated programme than the other way around.

Most of the UK operators who come up on 10GHz are out for a day's operating, not a weekend's test of stamina! Please remember that we have two contests a month for 5 of the summer months. Overnights out with the radio at that rate will not go down well with the rest of the family. Indeed it is grossly unfair to them! For that reason we have scheduled the October All Bands Contest to overlap the IARU Contest so that the majority of us who have only one day available can work the IARU stuff on the Sunday morning when presumably the other, lower bands have been worked out by the contest groups. By Sunday they should be "hungry" for contacts with those of us on the higher microwave bands.

*"The UK is NOW a very minor player on Microwaves compare the 250 DL home stations qrv on 10GHz rain scatter with the absolute maximum of 20 here in the UK!"*

The comparison between DL and the UK is certainly true on 10GHz but there is more to microwaves than 10GHz! Many of the UK stations are now equipped for several microwave bands, some for all from 1.2GHz to 47GHz. We are leading the field on 47GHz in my opinion, looking at the activity generated last year.

DL stations are fortunate enough to have high power beacons on 10GHz and can be alerted to RS conditions through monitoring them. However, how many of us have the time to sit in front of a receiver or a computer screen all day waiting for a DX alert? Many of us have other interests, including jobs, hobbies and even children(!) to take us away from the

amateur station.

Many years ago I proposed a simple telephone alert network across the UK. I have only been rung once in ten years! I prefer this telephone system to the DX cluster because it is more instantaneous and it means I don't have to leave a receiver running all day and sit in front of it.

*"Recent monitoring of the CONVERSE network/DX Cluster indicates that only 5-6 microwave operators even regularly use the Packet system. In DL/PA there is co-operation to track major storms via packet and many additional contacts result."*

In my view, Packet is slow and means dedicating a computer to it if you are serious. I have occasionally watched the DX cluster on the Internet and in spite of it saying it updates every 5 minutes I have seen it hours, sometimes days, behind the prevailing activity.

*"As a result of No operation prior to 0900 UTC we almost always miss the morning propagation"*

There is nothing to stop any UK operator coming on at the hours Don suggests.

2. and 3. *We should also align our weekly activity periods to tie in either with the new Dutch Tuesday evening activity period or with the French Sunday morning session.*

There is nothing to stop any UK operator coming on when the other EU countries have their contests. You don't have to limit yourself to the UK contest programme, its dates and times. I am amazed at the mentality of a lot of UK microwavers who seem to hold the view that they should only operate during the UK contests! Contests are for contest-minded people. If you just want activity then come on the air at other times. Do as Don suggests and monitor the Converse network or DX cluster on the Internet if you want.

There is nothing to stop PA and DL stations coming on for our UK contests... why don't they? In fact a few do but you can count them on the fingers of one hand.

When I suggested we scrap the competitive element completely and just have "activity days" on the present contest days, there was a howl of protest from those who hardly come on the air in any case or who never enter a contest log. Last June there were over 30 UK stations active in the UK microwave contest but only 8 put in a 10GHz entry. In July the activity was also around 30 stations, which 7 put in an entry. In August, 6 out of 30

entered. If the 10GHz contests attract only a 20 to 25% entry then why have them at all?

Some have suggested we make all the contest days into ALL BAND events. Last year the All Band Contests managed to achieve only a 5% entry!!! The UK operators who are really doing something these days are those on 47 and 24GHz. There, the entry rate into the contests is around 80% of the known activity on each day.

*"We should align out weekly activity periods to tie in either with the new Dutch Tuesday >>evening activity period or with the French Sunday morning session. "*

Why should we align our already well-established Monday evening activity period with the new Dutch one?! Why can't they fall into line with us for a change? It seem to me that we are always seen as the UK dog being wagged by the Continental European tail! Again, there is absolutely nothing to stop UK stations joining in with the Tuesday night PA event or the Sunday French one...all it needs is for you to switch on your gear!

*"All our national 10GHz/all band tests contests should align with at least our the PA /DL friends"*

WHY??

*"and the French will almost certainly follow"*

WHY SHOULD THEY?

We already align our microwave contest Sundays with most of the French Activity days...I am in correspondence with F1GHB on this subject every year! On occasions, Eric has waited until our programme comes out before fixing his dates. In fact the French have the right outlook on this whole topic.... they come out on OUR portable days as well as their own. It's a pity other Eu countries can't do the same instead of waiting for the UK to fall into line with them.

Finally:

[A] I think we have a reasonable contest programme which, together with the other Eu countries provides all Western Eu microwave operators with a wonderful opportunity to find activity on designated days. However there are often good conditions outside contest days and therefore the serious microwave DXer will equip himself/herself to cater for that. Our contests are NOT there just to provide activity, although they certainly do that. I believe they are for the microwaver to assess his gear under testing conditions, often in a portable environment. They should be regarded in the same light as say 2 metre contests... do you only come on 2m when there is a contest or are you a serious DXer and monitor that band for aurora, Es, tropo lifts etc?

[B] **There is more to microwaves than 10GHz ...**

[C] All this concern over activity could be solved if most of us came on a microwave band at least once a week.... some come on just once or twice a year!

[D] Much of this alignment with PA/DL and F will only benefit those UK operators in the South and East of England. Remember it is a lot further into DL from up in Yorkshire than it is in East Anglia. We want Southern UK stations to look NORTH instead of east! You may not know that G3LRP and G0HNW are on 10GHz every day at around 0815 local time and several evenings at around 2000. They work G3KEU every day. We would also appeal to GM operators to look SOUTH!!

**FROM NEIL, G4BRK:**

There is a lot of activity in Europe on the May weekend with 24 hour contests in PA, DL and other countries. It may not be an IARU event, but the activity seems much the same as the October event (as observed from Kent).

The new Dutch [weekday] events have been introduced to align with the already successful Scandinavian activity contests on Tuesday evenings. These have a different band focus (50/144/432/ microwave) depending on which Tuesday. (I think microwave is the 3rd Tuesday). So as far as us microwavers are concerned, there is one Tuesday per month when we should be active. I don't think one additional session per month would detract from the Monday evening sessions.

It would be interesting to have a competitive event with DX activity at a time when tropospheric propagation is more likely. It did not make much sense for an aligned event when it was Scandinavia-only, but with the Netherlands being in range (from some of the UK at least) I think it would be a useful new all-bands series of events. For me, one of the most enjoyable contests last year was the 23/13cm cumulatives, held on various evenings in the Autumn.

**FROM JOHN, GOAPI :**

Don's thoughts are interesting as they remind me of when I first decided to re-enter 10GHz in 1991, using the narrowband modules from Charlie. In those days (1991) the only regular signal down here in Dorset was from G3JVL and trying to hear him from home was at first not possible. This promoted more experimentation to add lower noise front ends, larger gain antennas, fully masthead based transverters with 15 - 20W TWT'S, elevation and rotation from the shack.

During the following 5 years or so the numbers slowly increased , we built nb beacons and finally EME worldwide.

After several years the enthusiasm does take a downward turn when other RF based experiments on other bands come along. This is a normal situation.

If Don wants more activity he should consider building a beacon or help a new batch to start up.  
How much rain scatter does he want? The dawn effect is not new....

HOWEVER, on a positive note, the real crux of all the debate as I see it is the need for reliable talkback with the ability to link across the UK and into Europe at any given moment. I do not think any band above 50MHz is capable of providing this and I have advocated the use of cell phones for portable events where mass of kit is a problem.

Are we trying to determine how far 144 or 432 or 1296MHz will go when on 10GHz - clearly not.

At home, I have been using the PSK31 mode by G3PLX, having never operated on HF from home before. The results are far better than I hoped for and as a means of passing, on-screen traffic in real time QSO mode, it is excellent.. It copes with tremendous levels of QRM/QRN and can reliably print out 100% copy at the point where it is often not possible to detect ANY audio output from the monitor speaker - I kid you not. When used with your average PC with 16bit Sound Blaster card it is very easy to operate ... this mode really WORKS! If employed, it would be easy to publish spot frequencies for Microwave activity clusters and anyone wanting a sked or info could call CQ. With a bit of wet string and an average hf rig on 80 or 40 m this should easily reach the target area and higher bands would extend this as far as you like. It does not require any kind of hf DX super station and as it occupies 31Hz of spectrum there is plenty of space available- you can even view the 2kHz of the band where it takes place using the supplied Waterfall/ bandscope so there's no reason to miss anything going on.

I may be preaching to the converted but it is the best system I have seen ... a laptop and 12v dc rig (I now use an IC746) should allow even portable operation (how long does it take to put up an efficient 144MHz antenna and mast?

#### **FROM MARTYN, G3UKV:**

The only thing I would say re packet DX cluster is that it works far, far better on the 1200 bps VHF "real time" packet cluster network than it does via WWW. Typical times are 1-2 minutes only here in the Midlands from when an entry is sent. Unfortunately, it is very rarely used at microwaves. It really is confined to the bands up to 2 metres.

I personally think an HF calling frequency (3.625 MHz ? 7 MHz ?) would be an asset for as a microwave alert calling frequency, as well as the 2m/70cm ones.

#### **From: Wim, PAOWWM**

For years Arie, PA0EZ, has tried many times to get the G operators going along with the same contests on Microwave bands as the rest of Europe but they always say NO! If you ask the contest stations they say YES ?? Every 3rd Tuesday there is a Scandinavian microwave

activity contest from 23 cm and up .....

*(The NAC contests runs from 1800-2200 utc each 3rd Tuesday and in March, May, July and October the EUs are active on all microwave bands in addition to VHF/ UHF..... G3JHM)*

#### **FROM BOB. G8VOI :**

No real comments ... let it (the UK contest programme) run for this year and see how it goes.

**I still think the 10GHz cumulatives have outlived their usefulness and should be replaced by all band cumulatives...or at least 1.3 to 10GHz affairs...**

#### **FROM STEVE, G4KNZ:**

I think we have made big progress in recent years by having anything at all which co-ordinates with Eu in May and October. I can remember a time when it seemed many ops, esp. those in the South, were opposed to anything but the 3rd or 4th Sunday cumulatives, and anything but daylight operation. The present arrangements were a compromise, to take into account those people who still prefer to operate from say 10am till early evening. They are out /portable, often single operator, and are restricted often to daylight hours. With the advent of widespread fixed operation, perhaps many more people would be able to operate at 6am or 11pm now so it is more realistic to consider also aligning the hours sometimes? We should be careful though not to alienate those who prefer the old arrangements, or they will not participate. Perhaps the compromise is to try one event for 2001 fully aligned, and one event as is.

I try and make the effort to be active in May/ October, last year from JO02 both times, and due to time and family restrictions, I chose to operate something like 7 or 8am till 1 or 2pm, and just enter the IARU event. Actually, I have just received my certificate for winning most of the Oct IARU single-op sections and overall - I think mainly because few microwave ops ever bother to enter the IARU event!

#### **FROM JULIAN, G4UET:**

As one of the portable only operators, and with a team physically located across a wide area, it would be difficult to be able to be active before, after daylight hours. A move to a new home QTH will allow fixed operating, but for me, and probably the G4ZXO team, half the fun is operating from Ditchling Beacon and 'getting out'. Steve's idea of a mix seems a reasonable compromise. We did operate multiband during IARU and found the results very disappointing, The stations we tried to work seemed more aligned to HF operating than that required for microwave events!



## ACTIVITY NEWS FROM THE WORLD ABOVE 1000MHz

There's not much reported activity news this month. That doesn't mean there has been little activity on the microwave bands! Every Monday evening has seen a dedicated half dozen or so operators on 10GHz and other bands such as 23cm. This is very encouraging as we don't want people to think that the Monday activity night is for 10GHz only! Please call on 144.175MHz for microwave contacts and also check the 70cm European calling channel if you have it.

Likewise the end-of-month winter activity days have seen a fair sprinkling of operators, all but one being home stations as far as we know.

**Neil, G4BRK (near Swindon, Wilts)** suffered storm damage to his microwave antenna system during an activity day, earlier this year. At the time of writing he has his 23cm and 6cm antennas up and working but the 3cm gear will take a little time yet.

**Martyn Vincent, G3UKV at Telford, [ukv@globalnet.co.uk]** emails this report: Dave, G8VZT, has been working on the 24 GHz again to help me get QRV. I'm having trouble with the 5 stage PA at present, but have 10mW OK. However, I want to change from his original 23cm IF (chosen for NB and ATV use). We have hit a problem with summer G3ZME expedition to Eire. We planned to occupy the mountain at Kippure, SW of Dublin, but access at present looks like no-go, so we'll have to look around a bit more. However we still intend to operate from EI at the end of July.... more news later!

**Ted, G3JMY (Bristol)** emails the following: There has not been a lot of activity so far this year but I have worked a few stations on 3cm. Sunday, February 27th, saw few on the calling channel for any band and I managed a "magnificent" 4 stations worked, with 2 'gotaways'. Paul, G0HNW, West Yorkshire supplied my best DX. All other stations were under 100 km.

Having completely dismantled and refurbished my waveguide run I was pleased to find an increase in signal strength on receive and an increase in power output on transmit. On 27th February, GB3KBQ was coming in, with rain scatter, at S9 + 10 dB and audible over some 180 degrees! My contact with Andy, G4MAP, at 94km, resulted in S9+40 report from him and S9+10 from me. Rain scatter helped a lot. Doug, GW3ATM/P, was a brave man up in the hills that day.

**From: G4UVZ, (AdrianWhatmore@tauntonsom-tr.swest.nhs.uk), Taunton**

I have recently become interested in 24cm TV and was surprised to find that I can receive GB3ZZ in Bristol some 45 miles distant. The path is non-optical with a single obstruction about half way. Now the interesting bit ... my foreground clearance is excellent, the land dropping gently away over 2-3 miles then a flat plain for 20 miles. From the shack I can see the Mendip Hill Ridge, the obstruction being in the area of Charterhouse. I have a variable height tower and started with the 24 cm antenna at about 30 feet...any increase in height from this position results in a severe reduction in received signal! This does not seem to change with time of day or weather .....any one got any thoughts?

**From G4HTZ, (steve @barrett1959.freeserve.co.uk)**

I am now active on 10GHz at long last! The system is a DB6NT transverter @ 240mw to the dish. My location is Rayleigh Essex, JO01HO. I'm looking for tests, etc. (Welcome to 10GHz Steve! ... editor)

**From:G6UAJ, Paul.Longstaff@vf.vodafone.co.uk, Swindon**

I received the 10watt PA for 3cm at the weekend ... It's very nice! Jochen was very good, and informed me by email when he received the money, and dispatched the unit. The total cost including postage was £308, though I understand that the asking price of 900DM has now increased to 1200DM!

I am looking at different ideas for the PSU Jochem recommends +11v at 8 amps, and -9.5 v at 100mA, though the device can take +15v and -15v without failure! I will be running the unit portable, for car batteries/petrol gennies and so I need a good regulated supply. I am sure that others are looking at the same design, and would appreciate any feedback that is available.

**That's it for this month. News, views and especially ARTICLES are urgently needed for next month's issue!**