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

1999 – MAY

Once again it's 47GHz that dominates the news this month. Last month's newsletter "Stop Press" indicated a further UK record of 90km but things went even further after that! Read all about it within these pages.

IN THIS MONTH'S ISSUE…...

These millimetre wave achievements received good coverage in the GB2RS news broadcasts and also stirred up a great deal of interest at RadCom's editorial desk. Look out for more news there!

The Microwave Roundtable meeting at the Rutherford Appleton Laboratory also had a distinct "millimetre wave" flavour. Again you can read about it in this issue.

The first of the "summer season's" microwave contests took place over the first weekend in May, with the 10GHz Trophy on the Saturday and the RSGB 432 and Up over both days. While the conditions for the Trophy were not too good, those who stayed on for the Sunday were rewarded with excellent 24GHz conditions to the Continent. See the Activity News section for details.

Finally, please check your 1999 contest calendar again. There are still folk out there who obviously haven't read it yet! Not all contests are on the last Sunday of the month. It's no use calling "CQ for microwaves" when everyone else is at a Microwave Roundtable meeting, as happened on the 25th April this year ….

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

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146 Springvale Road,
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SUBSCRIPTION ENQUIRIES SHOULD BE SENT TO RSGB HEADQUARTERS AT THE ADDRESS SHOWN AT THE TOP OF THIS PAGE.

The Crawley Microwave Round Table

Date: Sunday 20th June, 1999
Venue: The Crawley Amateur Radio Club, Hut 18, Tilgate Recreational Centre, Crawley, Sussex.
Time: The doors will open at 10.00 am

The entrance to the Tilgate Recreational Centre is located on the southbound carriageway of the A23, just south of Crawley and about 200 yards south from the new Broadfield Stadium round-about, which is well sign-posted and is close to the Southern end of the M23/ A23 junction at Pease Pottage (Exit 11).

Activities:

- a bring and buy sale
- general natter etc. before lunch
- a formal meeting in the afternoon.
- Lectures (see below)

For the lectures, G4JNT will talk about DSP applied to the microwave bands, Peter G3PYB about the French 5 watt PA plus Jack G3JMB describing the multi-hop duplex cross-channel link which took place from Dover as part of the 100th anniversary celebration of the first cross-channel link made by Marconi.

Light refreshments will be available, as usual, with a limited quantity of sandwiches, etc.

For any further Information contact Derek Atter, G3GRO on Tel/Fax 0293 520424 or on E-mail at datter@compuserve.com

CAN YOU TALK TO OTHER MICROWAVERS?

If so you might care to become part of a "pool" of speakers that can be called upon from time to time to give talks at Microwave Roundtable meetings. Each year are such meetings are held at Martlesham (usually in November), Crawley (June), RAL near Oxford (April) and Wimborne (early Autumn).

The RSGB Microwave Committee is frequently asked by the organisers of these meetings to suggest speakers. A directory of willing speakers would be of immense help in this respect.

If you are willing to speak, for at least half an hour (preferably for a full hour) on any microwave-related subject of your choice, then please contact the Microwave Newsletter editor with details of the subject matter, your telephone number and/or email address. Talks with a practical bias are especially welcome. Illustrations can be in any media you like from OHPTs to colour slides or video tape, or even chalk and a blackboard if you are desperate! Every assistance will be given to you with regard to audio visual equipment.

The Committee would not call on you every time! In fact if you gave your talk at a venue such as RAL it is highly likely that it would reach the ears of most active microwavers. You would only be asked to speak if it were convenient for you... no press-ganging (we promise!).

Many of you are doing interesting things on microwaves... please share these with your microwave friends!

INTERNET TECHNICAL DISCUSSION GROUP

Glen Ross, G8MWR, runs two interesting and useful technical discussion groups via email. Amateurs who have a genuine interest in technical matters (one would think all microwavers come into this category!) are invited to join the lists. Email Glen at: ross@zetnet.co.uk for further details.

Glen runs two lists.."Radio-Tech" and "Waveguide"... you can join either or both.
These discussion groups are free of the "spam" that pervades the newsgroups!

CONTESTS 2000

In an attempt to inject a little stability into our annual contest programme, the Microwave Committee have recently decided to retain the 1999 format throughout next year, 2000. The dates will, as far as possible, correspond to the same weekends as this year. This will mean the dates and rules can appear alongside all the other VHF/UHF/SHF contests in the October 1999 issue of RadCom. It also means you will get to know them several months earlier than in past years.

A large number of active microwavers have already been informed of this decision via email and the response has been overwhelmingly in favour. However, if you want changes for the year 2001 then come along later this year to the Martlesham and Wimborne microwave round tables and voice your opinions there!

Your committee tries to please....

BEACON NEWS

French beacons:

Michel, F6HTJ (balises@ref.tm.fr) informs us that most of the French beacons have changed their call : old FX calls are now F1X.. or F5X..

You can find an updated list at http://www.ref.tm.fr with photos of some installations .

This summer he is planning to put a beacon in the Pyrenees, 2300ma.s.l. in JN12BL, on 432.978 MHz. The beacon should be heard from G, with good propagation, as the French have already made qsos with England from that site on 70cm.

From G4NNS:

The Paris beacon has changed location to JN18IR, the move resulting in a frequency change to 10368.060MHz (for the time being).

From Allan, GM4ZUK :

In the March 1999 'Microwave Newsletter' Beacon the GB3ANG 1296.965MHz beacon is listed as 'Planned' .In fact it has been QRV since December 1997 and is listed in the RSGB 1999 Callbook.
Full info is:- 1296.965 GB3ANG IO86MN 40W ERP 15/15 Slot Yagi 170 deg 319m ASL
Reports are welcome to **gb3ang@cableinet.co.uk**

MICROWAVE ROUND TABLE REPORT - R.A.L 1999

The resident microwavers at the Rutherford Appleton Labs put on yet another fine meeting on April 25th. In addition to some super food catering (!) there was a most interesting series of talks, a bring and buy and the usual high standard of test equipment.

The talks included an informative look at the total solar eclipse, due in August this year. Our thanks to Geoff Grayer, G3NAQ, for this. He was followed by John Hazell, G8ACE, who brought us up to date on his experiments with power amplifiers at 24GHz. He certainly has "green fingers" at this frequency! Following him was Martin Farmer, G7MRF, who explained the latest developments that he and the "Northern" 47GHz group had been doing. This work had been rewarded, just a few days earlier, with a new UK 47GHz record and is now the subject of great interest around the country. Martin's talk was very practically based and provided lots of us with plenty to think about, especially on how to fit those microscopic mixer diodes!

Everyone at the meeting was sorry to hear of the domestic fire problem that kept Dave, G4ASR, from the meeting. We all hope that the damage was not serious and that we will see him and his fine selection of surplus microwave "goodies" at the next event.

On behalf of all those at the meeting, this Newsletter would like to place on record our thanks to Geoff Grayer, G3NAQ and his colleagues, for the excellent organisation and hardwork on our behalf.

GaAsFET PAs on 47GHz?

It's early days to talk about my work this past week but it looks as if the NE32584 series will provide respectable power at 47GHz as a doubler. My power meter scale is deciding to peel and stops the needle at 7mw so I'm getting at least that much! This is fairly low cost as it needs 3 X NE325 GaAsFET at about £8, a PCB (possibly the hardest thing), a box and many hours of dedication. Up to the last doubler is fairly easy as it is matching the GaAsFET power into the waveguide which is the taxing part to transfer what there is. 5mw minimum drive at 11.7GHz is needed.

73 from John Hazell G8ACE

Improved I.F matching at 1296MHz for a DB6NT 47GHz Transverter

By Paul Widger G0HNW & Martin Farmer G7MRF

Following early tests on 47GHz, with the matching network (see figure 1) as described in the last issue of the Microwave Newsletter, our "group" in the North West decided that, whilst the circuit did work, it was not very good on receive This was evident when David,G8VZT/P and Martin, G7MRF/P, were at the Stiperstones in Shropshire during the 24/47GHz contest. Signals from David, G0IVA/P, at Merryton Low were very strong on the transverter that had been modified as described below but on the transverter with the original matching circuit G0IVA's signal could not be heard!

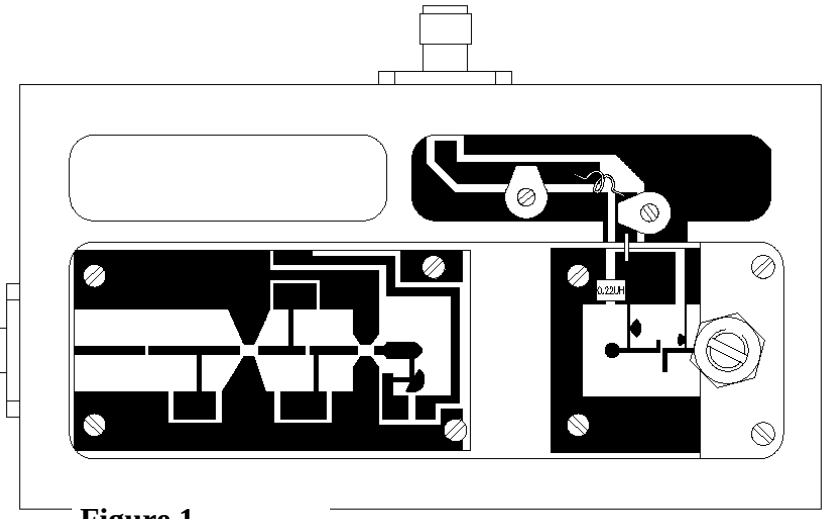
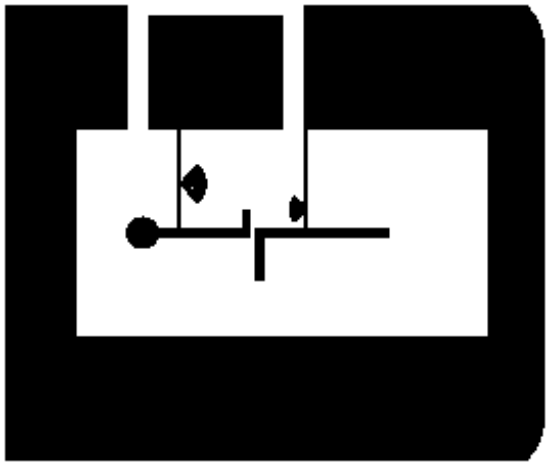


Figure 1

Paul, G0HNW, did some bench work on the original matching network and found it would not perform to his liking – so out came the knife and Paul's theory about the pad on the IF being too big at 1296MHz was put to the test.

Figure 2



The pad and the coil seem to be resonant at about 139MHz in their original configuration (figure 2) so G0HNW cut the pad on his PCB to suit the direct attachment of.085 semi-rigid coax cable.

The modified pad is shown in figure 3

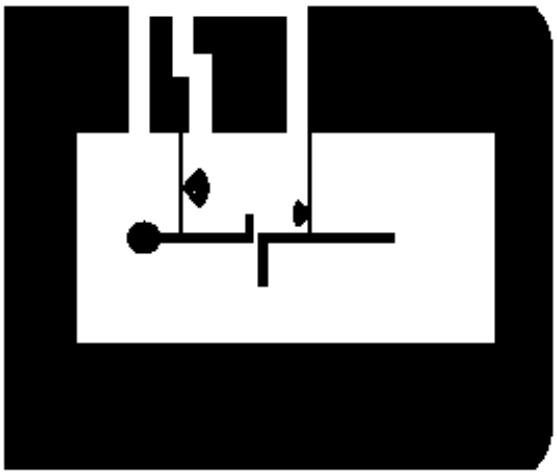
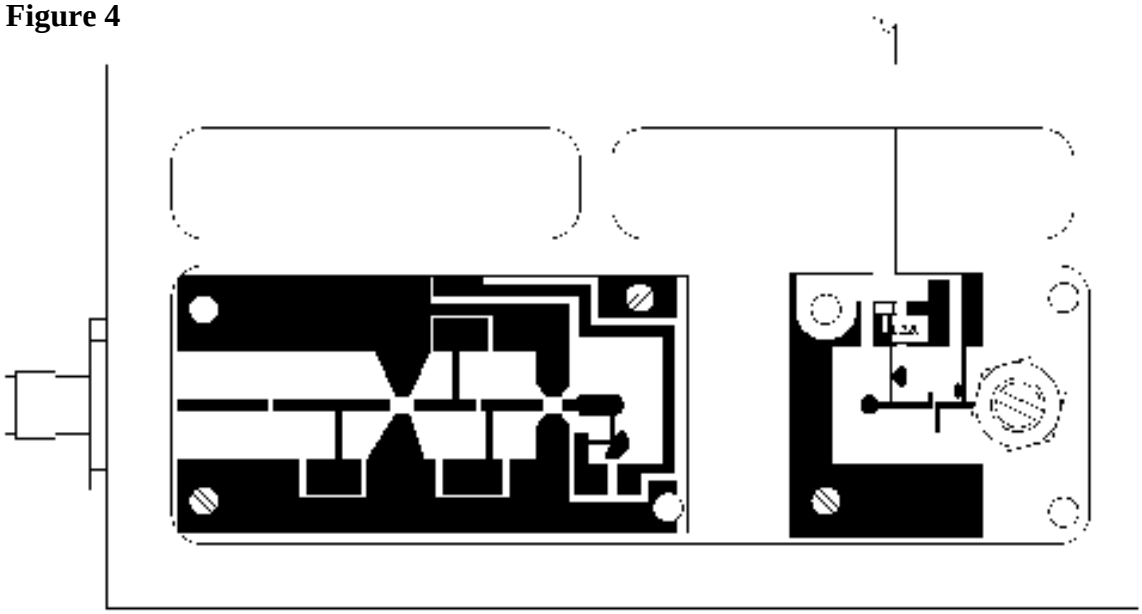


Figure 3

As can be seen in figure 4, the semi-rigid cable passes through the wall of the machined case and is held in position by a small, thin piece of brass shim soldered to the outer casing of the cable and then fastened down with the PCB screw. Paul used a small solder tag to achieve the same result.

Figure 4



It was thought that the 15 milliwatts of 1296MHz drive required in the DB6NT design was too high a level for the new layout. After some tests by G0HNW, a value of 1.5milliwatts was arrived at.

G7MRF has also modified his transverter in line with this and also ended up by reducing the drive level, down to 4.5miliwatts in fact. This was achieved by G0IVA/P watching the S-meter on his receiver over the 90km path being worked at the time while a variable attenuator was used on the IF transmit line to determine the best level.

The original matching circuit will be returned to for further investigation in the future when time allows.

Following the modification, G8VZT was able to take signals over a 133K path whereas before, over 90Km, nothing could be heard!

Editor's comment..
Once again, our thanks to Martin and the 47GHz operators mentioned above for this useful information. That elusive 150kmk is not far away!

LOSSY CONNECTORS ...BEWARE!

When I was testing my 6cm transverter with a newly aquired RF Power Meter, I couldn't get more than about 30mW. I was expecting 200mW. I discovered that an N to N male adapter which I bought recently was attenuating the power. Replacing it with one I had had for years, resulted in very little loss.

So beware of some of the cheaper N type connectors and adapters found at rallies, they may be alright at HF but I will not use them again at UHF/SHF!

73 from Neil G4LDR.

A Compact Power Supply for the Qualcomm Omnitrak Amplifier

-by Dave Robinson WW2R

I thought it was time to redo my 10GHz portable unit to increase power without increasing the size, so that it could continue to be mounted at masthead. It was decided to use the Qualcomm Omnitrak PA (ref 1) with the DB6NT original transverter design (ref 2), G4DDK004 oscillator and the G3WDG preamp (ref 3).

There was insufficient space in the box for the Omnitrak psu board that came with the amp, especially as its TX/RX switching was already provided in the DB6NT module. I therefore needed to devise a small PCB, which could provide 10V at 1A max and –5V at around 50mA.

For the positive rail, the LT1086 1.5A low volt drop regulator would be used again (ref 4). However the usual 7660 chip was not capable. Looking through some regulators data sheets (ref 5) I came across the LT1054 chip which had many advantages over its predecessors: -

1 .It is capable of providing 100mA (7660 max is around 20mA)
2. It is rated for an input voltage of 15V maximum so can be run directly off 12V supply (7660 maximum is 10V)
3. Most importantly, it has an internal regulator that regulates the negative output voltage. (You don't need to worry about the 120 ohm internal resistance of 7660)

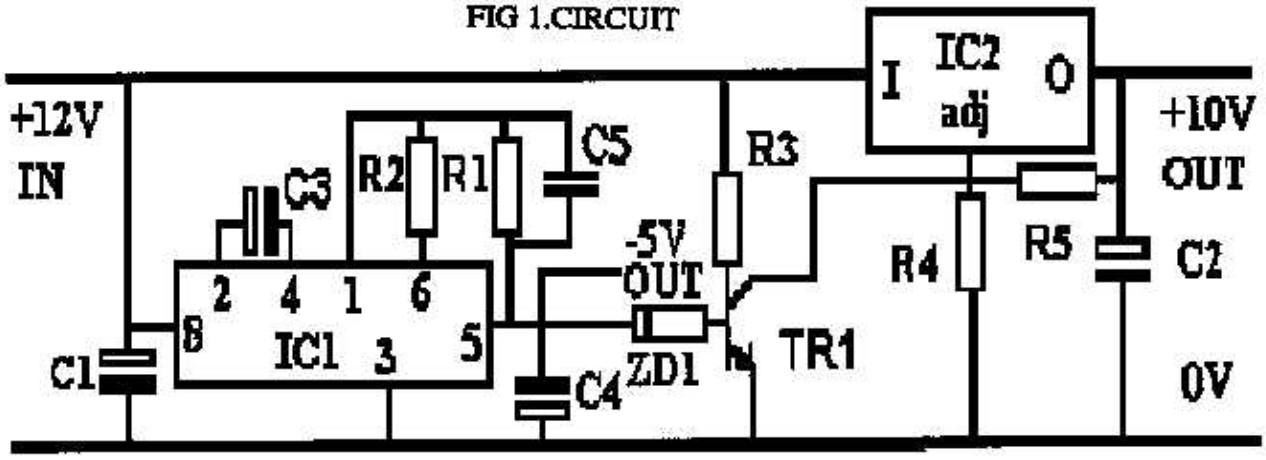
Accordingly, the circuit shown in **Fig 1** was devised. Failure of the negative supply reduces the positive supply to around 1.2V. The component listing is shown in **Table 1**. ThePCB layout is shown in **Fig 2** and the overlay in **Fig 3**. Note that the components are mounted on the track side of the board and that pin 7 of IC3 is chopped off and not soldered to the track below it. Surface mount resistors and capacitors can be used on the board. The PCB was mounted on the back of the amplifier casting (the back of which had been milled flat) taking care to insulate the metal tab of IC2 from ground.

The output voltages of the 3 modules built so far were measured as 9.82 and –4.89. Purists may be tempted to adjust the resistor values slightly to achieve exactly 10.0V and –5.0V. I tried it, but doing so made no difference at all to the Qualcom's 1.1W output power, probably due to its on board bias regulators

References:

1. http://www.ntplx.net/~wz1v/w1ril.html
2. Dubus Technik III pp324-333
3. Dubus Technik IV pp276-339 (also Proceedings Microwave update 1991 and 1995)
4. "Using the California Microwave 11-026700 transmitter assembly" Microwave update proceedings 1995
5. http://www.linear.com/prodinfo/dslist.html

FIG 1.CIRCUIT



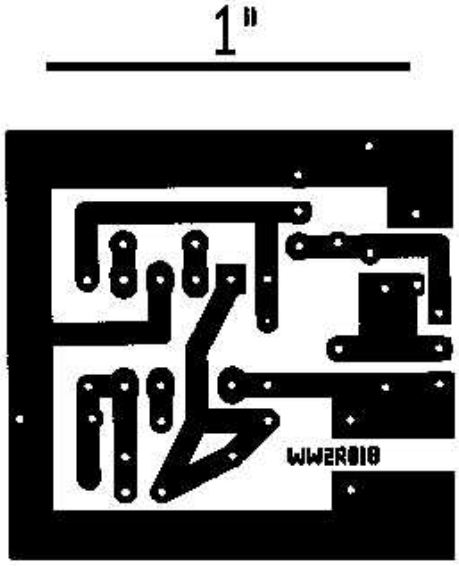


FIG 2. PCB LAYOUT

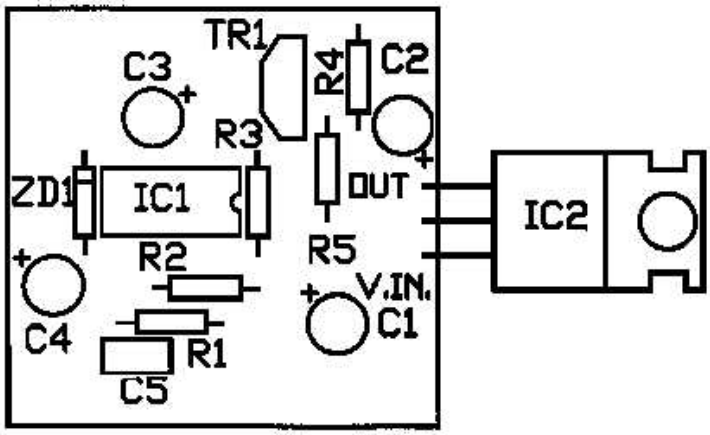


FIG 3. COMPONENT OVERLAY

Table 1: Component list

Resistors	Caps	Semiconductors
R1 100k	C1 10uF 25V	IC1 LT1054
R2 20k	C2 10uF 25V	IC2 LT1086
R3 10k	C3 10uF 25V	ZD1 4.7V 0.4W
R4 820R	C4 100uF 10V tantalum	TR1 2N2222a
R5 120R	C5 2200pF	

Editor's note: This article, reproduced here by kind permission of Dave Robinson, is one of several to be found on his interesting website.:

http://www.flash.net/~g4fre/ww2r.htm

Frequency Display module for a Marconi TF2370 spectrum analyser. I need to find a new display (Burroughs Panaplex II p/n BR09450). Can anyone help, please? Richard, G4ERP
Tel: 01242-674478 or e-mail Richard at... Marshall@BenettonFormula.com

SSB Electronics XRM-1 10GHz receive mixer unit. Fair price offered to repair old system that works well.
Reply to: G3UKV 01952 255416 or e-mail Martyn at… ukv@globalnet.co.uk

23 GHz brick information info on the following Microwave Associates 23 GHz gunn bricks : MA 86501 Y and MA 87811.
Please reply to Herve, F5HRY by email at … F5HRY@aol.com

For bona fide radio amateurs, Wanted and For Sale ads are free in this Newsletter!

Sorry … no trade ads!

Semiconductors
NE32584C ten left @ £3 each
MGF1402 two left @ £5 each
uPC575C2 audio IC @ £2.50
Post and packing £1.20 up to 4oz
Email Michel Monteil GJ6WDEK at...Monteil@aixup.univ-aix.fr

Quantity of TWTs .. All open to sensible offers!
2 @ English Electric Type 4134NYT2 5GHz. wg 15 in/out. 10 watts pSat o/p. Complete with enclosed PSUs, in exc. condition.

1 @ GEC TWC5 . 5.9-6.4GHz (will work on 5.7) with PSU. 5W o/p for 1.5mW i/p. wg14 in/out

1 @ Hughes QRO (100 watts!) wg17 in/out. No details and no PSU. Possibly 12-14GHz.
Contact Peter, G3PHO (address/phone number/email on page 1 of this newsletter)

ACTIVITY NEWS FROM THE WORLD ABOVE 1000MHz

THOSE 6mm MEN HAVE DONE IT AGAIN! UK 47GHz RECORD RAISED TO 133 kilometres..

The 18th of April saw the RSGB Microwave Committee 24/47GHz Contest take place. Several 47GHz stations were out portable. G0IVA/P (Merryton Low, IO93AD) made a 90km contact with G7MRF/P (located at Stiper Stones, IO82MN), thus comfortably exceeding G0IVA's record of 73km made on April 2nd. (see last month's Newsletter) The ssb contact exchanged reports of RS55 both ways. In fact some 40dB of attenuation was needed at G7MFR/P to reduce G0IVA's signal to zero! There seemed to be plenty in hand therefore to make a +100km contact in the near future..

If this were not enough, just a few minutes earlier than the new record, G4KNZ/P and G3FYX/P were breaking the 73km record themselves! They worked each other from Stokenchurch to Cleeve Common over a 78 kilometre path, using wideband Gunn diode transceivers of approximately 100mW output. They were not to know, in the midst of their euphoria that their new record was to be so short lived!

SUCH IS THE COMPETITION ON 47GHz THESE DAYS.....

After all the exciting 6mm happenings over the Easter period you might have thought that the 100km barrier on 47GHz would soon be broken by the same group. You'd be very right! On May 2nd, 1999, G7MRF, G0IVA, G0HNW and G8VZT were out on the hills yet again, determined to beat their 90km distance record.... and break it they did, by a substantial amount. We'll let Dave Woodward (G0IVA) tell the story.....

Martin G7MRF, Dave G8VZT (both with G3ZME group), Paul G0HNW and myself (G0IVA) went out today (2 May 99) for some further tests on 47GHz. Paths worked were:

- G7MRF/P & G8VZT/P (& G3ZME/P) Brown Clee (SO594865) to G0HNW/P & G0IVA/P Winter Hill (Matchmoor Lane SD667120) at
  126 km with signals 41 to 52 SSB (and 57 ish with HNW's hi pwr NBFM)

- G3ZME/P, G7MRF & G8VZT/P Brown Clee (Loc: IO82QL83) to G0HNW/P & G0IVA/P Rooley Moor Nr Rochdale (SD866166...Loc: IO83VP54)
  133 km sigs 419 to 529 CW (and 57 with HNW's hi pwr NBFM)
  SSB was not quite copiable but no problem with CW.

This 133km contact is now jointly claimed by the operators above as a new UK 47GHz record.

For both paths G0HNW's "high power", 25mW, beacon TX was used to great effect for initial alignment/netting.

Congratulations to all stations! ..editor

Now to the emails and letters from around the country...still on 47GHz!

From: Peter Day [peter@g3pho.free-online.co.uk]:
I get the distinct impression that 47GHz goes better than 24GHz where the simple low power rigs are involved. The problems seem not to be propagation but frequency stability, low power output and accurate dish pointing. Maybe the veteran 47GHers will comment. It seems that more progress has been made on 47GHz in the last couple of months than was made on 24GHz it its early days. Both G3FYX and G0IVA said they had plenty of signal in hand for their 47GHz contacts. Since there are hundreds of 100km+ LOS paths around, perhaps we need some dedicated expeditions to them outside of contests if the record is to be extended even further.

Many of us have 47GHz wideband FM systems... is there any mileage in keeping these going or should we ditch our 100 milliwatts of FM in favour of 100 microwatts of ssb??

Since WG on 47 is so small has anyone tried an inline mixer type of TX/RX using a diode multiplier a la JVL system but a simpler (post?) filter instead of iris plates. This would appear to be easier than pcbs and not a great deal bigger and easier on the eye for the senior citizens among us. Didn't you try this Steve (G4KNZ)? Of course the diodes are still a problem.

From: ROY EMERY
[royg3fyx@emery48.freeserve.co.uk] During the 18 April millimetre wave contest I managed to get Steve, G4KNZ, out on to Stokenchurch and worked him on 24 & 47GHz. The 47GHz was wideband and I still had signal in hand so that mode is still worth pursuing. The distance was 78km, so it has pushed the Wide Band record up a bit, although I know the narrowbanders did better!

From: G4KNZ, Steve.Davies@nmp.nokia.com
ref Sunday (18/April) 47GHz:
G4KNZ operated from near Stokenchurch during the morning only and worked G3FYX/P on 47GHz at 78km. Steve was also heard by G8ACE on 47GHz NB. Other commitments prevented operating in the afternoon. The 78km QSO with G3FYX was WB, and there was still a little in hand. For the test with G8ACE, G4KNZ used for the first time his narrowband equipment, with 20mW on transmit. G8ACE was not heard due to some combination of the lower power at G8ACE, G4KNZ's poorer receiver, and G4KNZ running out of time to check everything was set up properly and the dish fully aligned.

Exact details were:
1010 GMT - G4KNZ/P @ SU726957 to G3FYX/P @ SO997246. G4KNZ gave 42 report, G3FYX gave 57 report. Wideband. Distance = 78.2km, LOS.
1130 GMT - G4KNZ/P @ SU711935 to G8ACE/P @ SU374616. Only G4KNZ was heard by G8ACE, report not exchanged (KNZ only had CW available, Narrowband. Distance = 46km, LOS.

As the year progresses, Steve hopes to have more time again for 24/47G, but in the near future he will be for limited periods only.
G4KNZ's 47G gear - I20mW NB now, so far only CW modulation, but will add NBFM when he can spare some time. The receiver currently uses the WB mixer, and it is a bit deaf at 18dB NF! He has the bits and diodes for a DB6NT receiver but no time yet to build it up.

From: Martin Farmer [G7MRF@compuserve.com]
Re: Millimetre wave Contest: 18 April 1999
We initially set up on the Stiperstones in Shropshire at ngr SO 369 979 and worked David 'IVA ngr SK 029 595 over 90.3 km on 47GHz. RS 55 signals were exchanged and similar strengths on NBFM. Tests were carried out using a variable attenuator connected inline with the IF to determine what was required to lose the signal and with 30dB inline the signal could still be clearly heard but with 40dB it was considerably weaker, probably needing CW to make that contact. The 1296 IF connection has been improved after discussions with Paul 'HNW ***(see this issue...editor)***

David G8VZT/P was alongside, with his 47GHz transverter on a BSB offset dish. This was still in its original configuration using the 1296MHz IF matching circuit as per G0IVA/G7MRF write up in the April Newsletter. He could not hear anything from 'IVA.Moving onto the Long Mynd ngr SO 419 946, G0IVA/P IO93AD51 was worked with 59 signals on 24GHz SSB (this is <u>not</u> a line of site path,,,, local obstruction at the Long Mynd end) but his 47GHz signal was heard very weakly. I had another 47GHz contact with David G8VZT (IO82RQ) over 26.5km with David giving a report of my signal of 51 with me taking David 53.

From: John Hazell [hazell@mcmail.com]
Re: 18 April 1999 Millimetre wave Contest
I managed to find Roy G3FYX/P over a non line of sight path, Cleeve Common - Walbury, but found only just enough signal to hear his tone generator....no speech copy and I think maybe my rx was not helping. So no signal report exchange for that one though I'm pleased all the same. I then listened for G4KNZ/P Stokenchurch and his signal, at 49km, was an absolute "needle bender" but Steve was in a hurry and to find his signal was all there was time for. I would have liked to have measured how much there was in hand as with G3PYB at Easter. Steve also has no modulation facility!! A CW man? So again no signal report exchange for the record. Still, the signal shows this band has lots of possibilities. So far if you can hear the 24GHz signal on a barefoot transverter alone it seems to goes on 47GHz.

Tests with G8BKE and G0JMI both negative results. Both these signals more marginal on 24G transverter alone.

G8ACE's 47GHz equipment : Own variation

of DB6NT with 50mw LO drive for Tx using two HP mixer diodes and BFG67 1st IF amp at 2m. Total sprog power out at flange 800uw. WG22 power head at first node in front of horn giving 550uw. Transverter mounted at focal point of dish. 58cm diametre, centre fed.

From: C H Towns, G8BKE [CTowns@compuserve.com]
April 18th 24/47GHz Contest Report:
I was out by 10am at Win Green but had to wait until mid afternoon for the first 24GHz contact! Some folk are still not taking out 10GHz for dish alignment for 24/47GHz. A potential first QSO at 61km with G8ACE failed even though it went on 24GHz. I suspect the first outing for my 47GHz gear was too much for that path length!!... there's always another day..

From: Lehane, G8KMH (g8kmh@mm-wave.com)
Subject: 47GHz equipment
Since the move of QTH, along with the decorating, I've been completing the "QRO" nb 47GHz system. It runs about 20mW out with a commercial Q band balancedmixer for receive - estimated noise figure of 8dB. It should be capable of long paths. G4KNZ and I are going to do some system tests soon... I hope to put a filter on it, once I've swept it, to reduce the Image response. I also have had shipped from the US a commercial noise head for 47G and therefore should be able to measure the rx performance of some systems G4DDK has a power meter head and there are two EIP mixers (mine and DKK's) that we can use at Roundtable meetings for spec analysis. So there is plenty of test gear around!

Despite the non-activity, I have been busy!! Then there is 76G... I'm one bend short of a QRO (0.5mW) system.....

24GHz NEWS

From: ROY EMERY [royg3fyx@emery48.freeserve.co.uk]
On 18 April 1999, using 24GHz I worked G4BRK/P ,G8ACE/P, G7MRF/P and G0IVA/P(1 way)

From: David Woodward [g0iva@dmwoodward.freeserve.co.uk]
During the April 18th mm Wave contest I worked, all from Merryton Low IO93AD, the following:
G7MRF/P Nr Long Mynd 90.3km 59+/59+
G3PHO/P Nr Hathersage 30 km 59/59
G3FYX/P Cleeve Common135 km 419 one way (my sigs hrd briefly)

From: Neil, G4BRK [nwhiting@lucent.com]
18 April 1999 .. Had a very frustrating day on 24GHz. Perfect contest weather, warm with sunny spells, no wind. Went to a site near Gt. Rollright which was good to the North but only found one station (G8ACE/P on Walbury, 53 at 72km) in 1.5 hours of calling! It seemed there was nobody on in the North and a only bit of activity south of the Ridgeway, so I decided to move and went to Sparsholt Firs from where I worked G3FYX/P easily. I was then then called on 2metres successively by G0IVA/P and G7MRF/P. Being further south, I couldn't work either of these on 24GHz (147 and178km obstructed paths from where I was). To add insult to injury, the other southern stations seemed to be QRT too, apart from G8ACE (worked again at 22km, S9+) and Chris,G8BKE. On the second attempt (with frequency guidance from John), I worked Chris for the first time on 24GHz (RS43 at 76km) for best DX of the day - a pleasing result after the other frustrations. 4 QSO's total for the day with a lot of effort!

In retrospect, if I had gone south first and north later, I would probably have made 4 more QSO's, but there was no way I could know this in advance. The roving concept really doesn't seem to work in the South - there are so few accessible sites that I had to go for relatively poor ones. Also there is less chance to work the longer paths - you feel the need to move to the next site after making a few QSO's, without retrying the long paths or finding the more distant stations on talkback.

From: Steve.Davies@nmp.nokia.com
ref Sunday (18 April) 24GHz contest:
G4KNZ operated from near Stokenchurch briefly (AM only) and worked G3FYX/P on both 24 and 47GHz (distance 78km) and G8ACE/P at Walbury on 24GHz (46km).

From: John, G8ACE Results for 18/04/99 Activity Day for 24GHz
Location Walbury Hill IO91GI Note: I work in clock time, BST.
On 24GHz I managed to give out serial No.2 twice!
Equipment, GaAsfet rf amp on Rx, 500mw Tx, 58cm diam dish centre fed.

24GHz

BST	Call	Rpt in	Rpt out	Location	Distance
10.25	G4BRK/P	53001	53001	SP328336	72.2km
11.50	G3FYX/P	57002	59002	IO81XW	73.2km
12.20	G4KNZ/P	58003	55004	IO91MP	49km
13.30	G1JRU		59	No Sig rcd	57.6km
14.00	G0JMI/P	59001	59005	IO91JA	38km
15.00	G8BKE/P	59001	59005	IO80WX	60.8km
15.50	G4BRK/P	59003	59006	IO91FN	24.2km

From: Martin Farmer [G7MRF@compuserve.com]
Re: Millimetre wave Contest: 18 April 1999
From the Stiperstones in Shropshire at ngr SO 369 979 I worked David 'IVA ngr SK 029 595 over 90.3 km. On 24GHz 59 both ways. On moving to the Long Mynd ngr SO 419 946, stations worked were: -
G0IVA/P IO93AD51 59 signals on SSB (this is not line of site path localobstruction at the Long Mynd end)
G3FYX/P IO81XW 87.7 km with 59 signals both ways
G3PHO/P IO93AD took G7MRF/P signal 59 but 'PHO

was very weak 219 being the report using CW!. This is most definitely not LOS path!

All in all a good day with the 47GHz but poor weather and turn out on 24GHz.

From: Steve.Davies@nmp.nokia.com
G4KNZ operated from the Suffolk coast, JO02TD, on Sunday 2nd May, with 2.3, 3.4 and 24GHz, plus 70cm for talkback. Lack of car boot space prevented taking other bands!

On 24GHz, at last (after trying for several years), Steve worked across to mainland Europe, working **PE0MAR/P at 173km**. G4LIP/P, at 111km south, were also worked on 24GHz, which was also probably mostly a sea path. The 24GHz equipment at G4KNZ was 0.5W and 3.5dB system NF, with a 60cm dish.

From: Neil G4BRK [nwhiting@lucent.com]
Re: 1/2 May 1999 Contest weekend
Had a good time at Dover, with G4LIP/P). Good weather and propagation (though not big DX) and finally some **QSO's on 24GHz** from that site after failure on the previous 3 contests.

First (and best) was PE0MAR/P. Failed the first attempt, but later on made the QSO at **211km**. Signals quite weak, but consistent. 200mW their end, 50mW at mine (plus 80cm dish).

Next G4DDK - we have tried a couple of times before, but made it at last over the **96km**. Signals weak at first but good SSB later in the QSO.
Finally G4KNZ/P a bit further up the coast at **111km**. Weak, but completed OK, sending CW to overcome the power differential (500mW at Steve's end). We copied his SSB OK.

I also tried with G3LQR, G0FDZ/P, PA0EHG and ON1BPS/P, but nothing heard on any of these - maybe some would have gone at other times during the weekend.
73, Neil G4BRK

10GHz

Brian Coleman [BrianColeman@compuserve.com]
reports that F1DLT is now QRV on 3cm using a DB6NT transverter and F5FLN amplifier giving 2W o/p. He hopes to add an additional driver stage to realise the full 4W output later. On Sunday 11 April, 1999, Brian and F1DLT went to Christian's portable site The Roche Morey, JN27UR, about 1 hour's drive from his home Pelousey JN27XG. This site which is 440m ASL with a splendid take off in most directions, is equipped with VHF and UHF antennas and rotators, a tilt down tower for fitting microwave gear to and a shack in an old van, permanently parked on site. The site is a small country park and has an excellent restaurant near by. The HB9G 3cm beacon at 147 Km is 59+. They worked F6DKW in JN18CS with Brian's rig at a distance 283Km then F6DKW again and F5HRY (Paris Beacon keeper) in JN18EQ using Christian's rig.

Christian F1DLT, is regularly QRV from the Roche Morey on Sunday mornings from about 7:30 to 9:30 UK time. Look for him around 144.316MHz. Power and Antenna systems on 2m are "adequate". On 23cm 200W to 8 x 35 ele F9FT is available. For 13cm, 20W and a 1m dish is available.

Sometimes, Jean Paul F5EJZ operates from the Roche Morey with 20W and a 1m dish on 3cm but Jean Paul, who works in Paris, has, together with a group of amateurs, purchased a site at Barfleur (near Cherbourg) and we can expect to hear him QRV from there at weekends in future.

Contact details for Christian F1DLT are :-
e-mail: Totems_Chris@hotmail.com
Work Tel 0033 81 59 00 87
FAX 0033 81 59 04 07 FAX
Home Tel 0033 81 55 02 28

From: Don Hayter, G3JHM [d.hayter@virgin.net]
Sent: 24 April 1999 Subject: 10 GHz Activity
With a wet day yesterday I looked forward to a few raiscatter contacts on 10 GHz- NOT available in the UK! Please find attacted a file with the DX cluster 10 GHz announcements ***(this is too large for publication..editor)*** yesterday —about 40 of them -- only G3LQR and I made any contribution from UK. In the late evening) managed to access the CONVERS network where there were a dozen 10GHz ops online– but no G stations other than me. Many DX rainscatter paths were being tried over 200-400 km. A small warm front opening between G-PA accounted for PA0WWM's reception of GB3MHX on 10GHz and G3LQR's home beacon on 6 Cm.

The only 10GHz G station worked was G4NNS (Andover) over a short, obstructed path ... the first time on RS.

Sorry for the gripes but our EU friends keep 10GHz and lower bands alive and also progress to 47GHz. Why cant we do the same and also work the higher bands from HOME locations?
Don G3JHM ***(Comments welcome...editor)***

From: Neil. G4LDR [g4ldr@btinternet.com]
10GHz.Trophy Worked 16 stations in the trophy contest, best DX was F1GHB/P in IN88 at 307km. Conditions east west were quite good early in the contest, working towards the north however prove difficult. Still, no really long DX this year, I haven't worked into PA yet which is unusual. I had hoped that my efforts to improve my system, I now have a 90cm solid dish, would have helped. The bigger dish seems to be giving more that the expected 3 dB gain
over my 60cm mesh type dish. Monday evenings have been well supported down here in the south lately with 7 or 8 stations on at times.

From:Neil, G4BRK [nwhiting@lucent.com]
20 April 1999 Activity
Good activity last night on 3cm - Monday nights seem to be going really well at present. I worked G3GNR and G3LRP, both with a bit of rain scatter, at 54/55 level. Andy, G4MAP is back on from his new QTH - a cracking signal with me (and most others) with his 750mW. Also heard G3KEU, G4NNS, G4UVZ, G8SWZ, G3JHM .

Jack, G3JMB and Allan, G8LSD operated /portable at Chanctonbury (IO90TV34) for the 10GHz Trophy Contest on May 1st. The fine weather was most welcome! Conditons on 10GHz seemed below average but Allan worked G3PHO/P (IO94KF) at 371kmn for the best Dx of the day. It was a marginal one and Jack's gear was just a few dB short of doing the same thing, his best being G3LRP (IO93HO) at 308km. Other good contacts, over 200km were with G3GNR (IO70WT, 261km) and G3ZME/P (IO82QL, 232km). It was nice to work Old Timer Ron, G2DSP who now operates from home in Bognor Regis (IO90PT70). He regularly listens On microwave contest days and would appreciate contacts. He hears many stationson 144.175Mhz so how about putting out a directional call for him.

For most of this year's 10GHz Cumulatives, Jack and Allan will operate from Ashdown Forest, JO01BB14.

Peter, G3LRP (near Wakefield, IO93HO) found the May 10GHz Trophy conditons well below par, although he did work G8LSD/P and G3JMB/P (IO90TV) on CW, at 310km. The Sunday proved better and G4LIP/P was a good ssb QSO at 334km. Peter was pleased to work Bob, G3GNR (IO70WT) over the 363km path on both the 2nd and 9th May. Look out for Peter on Monday nights.

Peter, G3PHO/P (IO94KF54) felt the trip to the North York Moors a bit of a waste of time for the 10GHz Trophy. Both 2m and 10GHz were in poor N/S shape and only 11 stations were worked, the best being G4LIP/P and G8LSD/P at over the 300km mark. Known "sure fire" paths did not work on Saturday but opened up on the Saturday, after Peter had gone back to Sheffield!

1.2GHZ to 5.7GHz REPORTS

From: [g4ldr@btinternet.com]
6cm. I just managed to get my 6cm transverter installed on the dish before the 432MHz-248GHz contest on 1st/2nd May. The feed is an N to waveguide transition strapped to the side of my 10GHz feed, i.e. just open waveguide pointing at the 90cm dish. I was not expecting too much with my 200mW. My first ever 6cms contact was with G4LIP/P at 209km.
I worked 5 stations in total with my best DX being to F1GHB/P in IN88 at 307 km. My last contact of the contest was with G1JRU, but before we could work on 6cm Dell had to make an antenna! He made a quarter wave and stuck it into the SMA connector of his transverter which was sitting on his bench in his shack. His signal was 58 and mine 53, over the 35km path. I look forward to more contacts on 6cm during the coming months.

From: John Quarmby [g3xdy@btinternet.com]
Conditions at the end of April were good, lasting throughout the contest over last weekend.
29 April..
1.3GHz - DH0HAR JO53, PA3FHY JO22, DG2LAB JO54, OZ6OL JO65 (817km), PA5DD
2.3GHz - PA3FHY, DH0HAR (618km), PA5DD, PE1PFW JO22
30 April
1.3GHz - DF7JS JO31, DL8OBU JO42, PE2BD JO21, PE1HWO JO21, DJ6JJ JO31, PA9CW JO21, PA5FH JO22, PE1EWR JO11, DB6BX JO32
2.3GHz - DJ6JJ
1 May (Contest) Condx had dropped by the time the contest started, just a coastal duct evident.
1.3GHz - Various G,ON, PA, DL mostly by QSY from 70cm where I concentrated my efforts Saturday afternoon/evening.
2.3GHz - DK2MN JO32, G6DER IO93, G8VOI/P IO90, M1CRO/P JO01, PA0EZ JO22, PI4GN JO33, G3ZEZ JO01, PA0WWM JO22, PE0MAR/P JO21, G0EMG/P JO01, G4LIP/P
JO01, PA3AWJ JO21
2 May (Contest) Better Conditions on the Sunday with some good DX, but DX signals not too strong.
1.3GHz Highlights: DL5OAQ/P JO42, DC7DM JO40, OK1OKL JO60 (838km), DL3YEE JO42, OK1KIR/P JO60 (856km), DL0GTH JO50, DK8VR JN39, DL3YCW/P JO41
2.3GHz - DJ3FI JO31, DG1KJG JO30, PA6C JO33, G3ZME/P IO82, G3OHM/P IO92, DL3EAG JO31, G4DDK(!), PA5DD JO22, PA0SQE JO21, PI4ZLD JO11.
Total QSOs in the contest - 64 on 1.3GHz, 22 on 2.3GHz. The 13cm gear got a good airing and worked well, with 5 new squares worked in the week(IO82, IO90, JO11, JO30, plus JO53 before the contest).

My rig on 13cm is an FT736R on 144MHz, LMW Transverter, MGF0905 Driver, 2C39BA amplifier by K9EK, 60W output, MGF1402 Masthead Preamp, Antenna 44ele G3JVL Loop Yagi at 45 ft AGL. I'm very happy to try skeds, preferably arranged by email, or by phone (01473 717830). **73 John G3XDY**

1/2nd May 432 up Contest Reports

The Telford Club Report (G3ZME/P)
Martyn Vincent [ukv@globalnet.co.uk]
Here's Telford Club's report for the RSGB's 432MHz to

248 GHZ contest (May1/2), plus the 10GHz trophy for the first 8 hours of the same weekend.

Having been around last year solely entering the 10GHz Trophy contest from the Brown Clee (IO82QL) and watched S. Birmingham group (G3OHM/P et al) working alongside us, we decided it was time to branch out. Mike, G4NKC had been beavering away for months on the middle microwave bands - 6, 9 and 13cm, ordering PCBs etc directly from Kohne (DB6NT) in Germany.

Using club gear (432MHz), G4NKC's rigs and kits (1296, 2320, 3400 and 5700 MHz), we put our plans into action. My own gear (G3UKV) provided 10GHz narrowband, plus Dave G8VZT as always came up trumps with Amateur TV equipment for the same band. To our surprise and pleasure, Martin G7MRF asked if he could join us on the same site with 24GHz and 47GHz gear available, especially as a new UK record might be on the cards from this elevated site (544M ASL). Martin generously agreed to operate under the Telford club group callsign (G3ZME/P), as well as using his own call. So, the scene was set for 8 band operation - with the lowest frequency being 432 MHz - possibly a record in itself !

Everything went surprisingly smoothly, with QSOs on all 8 bands, using 4 modes (SSB, CW, ATV and NBFM). A new 47GHz distance record attempt succeeded, and all of Mike's (G4NKC) gear worked perfectly.

Here's a band by band summary of results:-

432MHz. About 200 watts SSB to a long yagi. 63 contacts, 8 outside the UK. Best DX DF0WD 753 Km.

1296MHz. TS790E -180 watts O/P to a 50 ele QLY.. 43 QSOs, 12 continentals. Best DX DH7DC 697Km in JO31QM.

2.3GHz. 12 QSOs here, but the lowest power with just 800mW to the 1.2 metre dish. However, DL3EAG managed to winkle out our CW at a distance of 621Km (JO31DK), and as with several other bands we worked my favourite callsign - M1CRO/P !

3.4GHz. 15 watt TWT to the 0.9m dish on the club's mobile tower. 5 QSOs all Gs. Best DX G4LIP/P 316Km who we worked on most microwave bands.

5.7GHz. 6 watts output .PHEMT pre-amp, feeding another 0.9 metre dish. 4 QSOs G8IFT/P, G4LRT, G4LIP/P and G6PHJ.

10368MHz. On SSB/CW 20 QSOs, all but 2 of them during the 10GHz Trophy contest on Saturday. Conditions only average, with 311 Km being the best DX (G4LIP/P again!). A receiver fault with about 6-10 dB loss didn't help. Dave G8VZT had rounded up all his Amateur TV mates in the Midlands and north-west, and so he provided a record additional 18 two-way video contacts, which for the 10GHz Trophy contest added lots of points plus 3 multipliers.

24GHz. About 60mW from Martin's (G7MRF) gear to a 60cm dish with prime feed system 2 stations worked on 12mm - Dave G0IVA/P and Paul G0HNW/P, both initially on Winter Hill (IO83RO) and then extended to a site near Rochdale at 133Km.

47088MHz. G7MRF's gear, plus also an improved system belonging to Tony G4CBW, came up trumps. The path to Winter Hill (126Km) was worked quite speedily on Sunday morning, despite 90% humidity , Dave and Paul then QSYd to another site near Rochdale (IO83VP). The distance was 133Km, and signals were becoming marginal on the 0.01mW ***(See earlier pages for full 47GHz report..editor).*** Congratulations to all concerned, and thanks for the points, Dave ('IVA), Paul ('HNW) and Martin ('MRF). Dave, G8VZT has now almost got his own system completed; he was using Tony's (G4CBW) transverter "head" on his offset dish during the May weekend, so there should be 4 fully proven narrow-band 47GHz sytems operational shortly in this corner of the UK !

From: Bob Reeves, G8VOI [bobg8voi@reeves59.freeserve.co.uk]:

May 1/2 Microwave Contest Report

The weather was very nice, just a pity that there was an extremely low level of activity.

I took out all bands from 144MHz to 10GHz (less 1296MHz) for the event, and operated from Butser Hill IO90MX until 9pm on the Saturday evening.

Conditions were generally poor, but there was some tropo enhancement to the South which produced a couple of good contacts with Eric F1GHB/P, IN88IN on both 5.7 & 10GHz with 59+ signals. Also worked on 10GHz for a new one was Jean-Noel, F6APE in IN97QI at 403km for a new square and best DX on all bands for the day.

I managed a couple of scratchy CW contacts with PE0MAR/P, JO21BX on 5.7 & 10GHz at 370km.

Results for the day:

2.3GHz 3 contacts, best DX G3XDY at 193km, my RX is deaf!!, but at least the TX is on the right band this year!!

3.4GHz 2 contacts, best DX G4LIP/P at 165km, a new square IO92 worked.

5.7GHz 5 contacts, best DX PE0MAR/P at 370km, new square IO92 worked.

10GHz 18 contacts, best DX F6APE at 403km, new square IN97.