An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

Formerly the RSGB Microwave Newsletter and now published by the UK Microwave Group

2006 FEBRUARY

Did you see this on Ebay?

This interesting antenna system was recently auctioned on www.ebay.co.uk at the remarkable starting price of only £42. Did any of our readers buy it? Let us know!

In this issue ...

Latest News ...

- **IO93FK-JO01HR on 24GHz tropo!**
- **Excellent tropo on all bands in early February**
- **Microwaver W5ZN becomes ARRL President**
- **French Millimetre Band Activity Day in late March**

MANY THANKS TO ALL OUR CONTRIBUTORS THIS MONTH ... WITHOUT YOU THERE WOULD BE NO SCATTERPOINT!

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From the Editor's Desk

Hello once again.
It promises to be an exciting year with a number of UKuG projects coming to fruition. Our annual "**Proceedings"** is well underway and should be available in late April. We are also planning a more enterprising book, a **Microwave Technical Compendium** that hopefully will be published towards the end of this year. In April we have our Spring Microwave **Roundtable meeting** at RAL and the first of the UKuG sponsored **Microwave Beginners' Workshops**" will take place in Sheffield at the end of May.

Members sometimes ask for other things to be done like setting up a components and kitset service. This we would love to organise but please remember that all these initiatives depend entirely on voluntary work. Our committee members are largely still in full time employment and microwaving is, of course, a spare time pursuit, not a way of life! So please be patient ..."Rome was not built in a day" but UKuG's committee is trying to get near that time schedule!

UKuG membership is steadily growing and I'm particularly pleased to see that there is a growing number of amateurs new to microwaves joining us and experimenting with **wideband FM on 10GHz** and some are combining it with **Summits On the Air** expeditions ... more on that in next month's issue.

73 from Peter, G3PHO, Editor

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News, views and articles for this newsletter are always welcome. Please send them to G3PHO (preferably by email) to the address shown lower left. **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.

AN APOLOGY

I must apologise for an error which I made on the front page of last month's Scatterpoint. The callsign of the silent key was incorrectly listed as G8JMG and should have read G8JMJ. It was printed correctly in the obituary in the ensuing pages. I sincerely hope that no distress was caused to anyone, especially the relatives of both parties concerned, when they read the incorrect version. I am led to believe that G8JMG is certainly and thankfully still with us.

I managed to correct the error on just a few copies of the newsletter but unfortunately most copies had been posted before I was alerted to it.

Peter, G3PHO, Editor

SUBSCRIPTION ENQUIRIES SHOULD BE SENT TO THE UKuG GROUP SECRETARY AT THE ADDRESS SHOWN AT THE TOP OF THIS PAGE AND NOT TO THE EDITOR OF SCATTERPOINT

R.A.L.MICROWAVE ROUND TABLE
Preliminary notice

This year's microwave meeting at the Rutherford Appleton Labs is scheduled for Sunday 30th April, a couple of weeks later than usual because Easter Sunday falls on the date the event usually takes place. The meeting will open at 10.30am and close around 4.30pm.

Full details will appear in Scatterpoint well before the event but it is important to know that you'll need to register your intent to attend. This can be done via the website of Dr.Mike Willis, G0MJW, who has just put the initial 2006 RAL Roundtable pages online at:

http://www.mike-willis.com/RAL2006.html

Note that he says that registration doesn't start till March. A link to that site is also posted on the UK Microwave Group website, www.microwavers.org.

A programme of lectures is being arranged as this edition of Scatterpoint is being put together. The usual range of facilities and activities will also be available.... test gear to at least 24GHz and possibly an antenna test range (unconfirmed). There will be an opportunity to swap or "horse trade" surplus microwave items but please note this is NOT a suitable venue for traders to attend. The venue is a research establishment and its continued free use for this annual meeting depends on us applying common sense when bringing along items for what might be called "bring and buy" at other gatherings of microwavers.

There will be a dinner, organised by Geoff, G3NAQ, at a nearby hotel, on the Saturday evening. Details of this will appear on the website. However please note that RAL is not a two day event like Martlesham.

For those who have not attended before, RAL is near to Didcot in Oxfordshire.

UK Microwave Group Proceedings 2006

The compilation of this year's Proceedings is already underway and it's hoped to have the book ready in time for the meeting at RAL in April. Covering last year's RAL event and the roundtable meeting at Martlesham in November 2005, together with some extra papers, the book will be a valuable reference for those who did not manage to get to the meetings (and to those who did!).

There will be a limited number printed. Last year we sold all 100 copies and it may be that we need to print more this time. If you are definitely interested in a copy (possibly priced at around £5 or so, depending on this year's printing costs, **plus postage**) then email G3PHO at the address shown on the front page of this issue. Do it now so that we can make a fair estimate of the print run we need.

UKuG MICROWAVE TECHNICAL COMPENDIUM

Your committee is working on a collection of technical articles that have appeared in the past ten years or so of Scatterpoint and the former RSGB Microwave Newsletter. We propose to publish them in a Microwave Technical Compendium sometime later this year. At the moment we are making the difficult decision of just what to leave out of the book as there is far too much available for the size of book we envisage! Many of the articles have not appeared in any other publication and all will be chosen for their practical application to amateur microwaves.

We have no firm details of date of publication and price yet but the book **is** on the way. Watch this space over the next few months and be sure to reserve your copy when the time comes!

A 96MHz Direct Frequency Synthesis source

By Sam Jewell, G4DDK

One of the features of my home brew 23cm transverter is that it has the facility to connect an external high stability local oscillator at 96MHz in place of the built-in 96MHz OCXO. This could be a frequency locked source, such as one of the various Reflock units, another free running OCXO or a DDS based unit. However, I have been intrigued by the idea of the 'old' technology of direct frequency synthesis for some time and when Brian, WA1ZMS, described his DFS systems at the Martlesham RT; I thought it was time to try the idea for myself. This technique is capable of extremely low phase noise, coupled with high stability and 'unfussy' design.

The DFS is basically a fixed frequency generator. The need for extensive filtering can make frequency changing a real problem. A DFS can, in principle, be built for any frequency requirement. However, some frequencies can require extensive frequency manipulation, not to mention filtering. For this reason it may not be practical to design and build a DFS for, e.g. a beacon where the final frequency is an odd 'offset'. Most local oscillator base frequencies are relatively easy to generate from a 5 or 10MHz high stability source.

Figure 1 below, shows the block diagram of the 96MHz DFS while Figure 2 shows the circuit schematic of the DFS.

Figure 1:

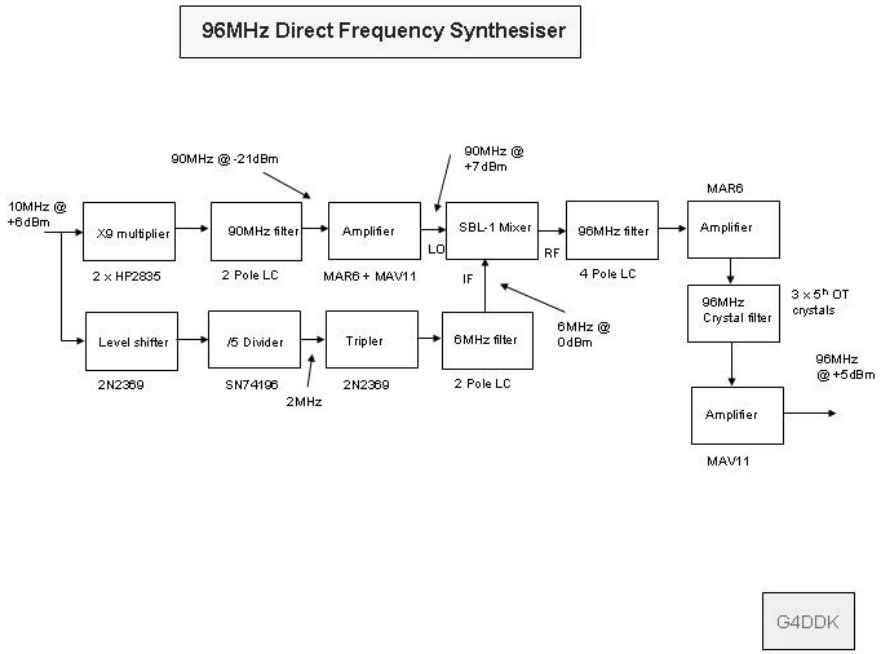
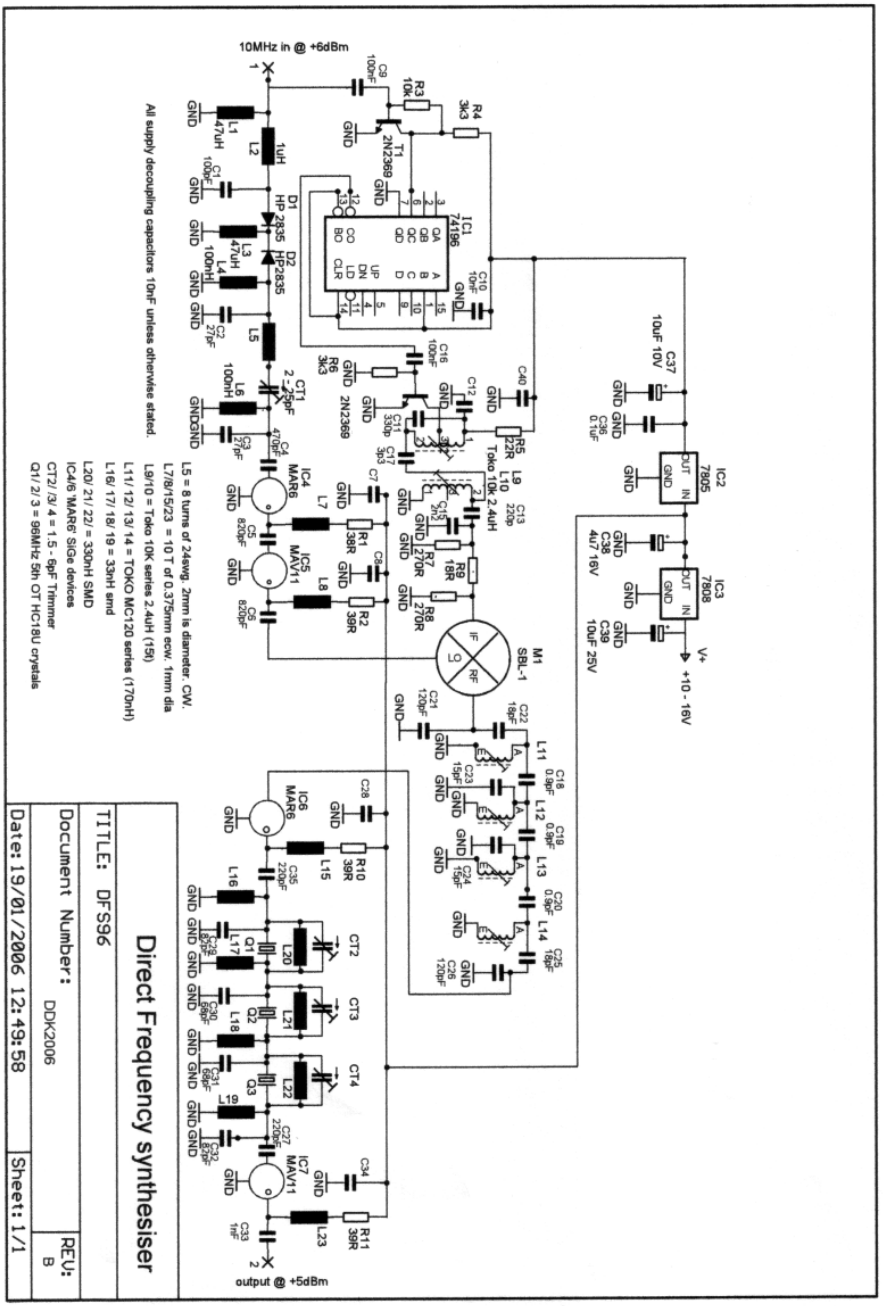


Figure 2 :


Direct Frequency synthesiser
TITLE: DFS96
Document Number: DDK2006
REV: B
Date: 19/01/2006 12:49:58
Sheet: 1/1
10MHz in @ +6dBm
output @ +5dBm
All supply decoupling capacitors 10nF unless otherwise stated.
L5 = 8 turns of 24swg. 2mm is diameter. OW.
L7/8/15/23 = 10 T of 0.375mm ecw. 1mm dia
L9/10 = Toko 10K series 2.4uH (15t)
L11/ 12/ 13/ 14 = TOKO MC120 series (170nH)
L16/ 17/ 18/ 19 = 33nH smd
L20/ 21/ 22/ = 330nH SMD
IC4/6 'MAR6' SiGe devices
CT2/ '3/ 4 = 1.5 - 6pF Trimmer
Q1/ 2/ 3 = 96MHz 5th OT HC18U crystals
IC1 74196
IC2 7805
IC3 7808
IC4 MAR6
IC5 MAV11
IC6 MAR6
IC7 MAV11
M1 SBL-1
T1 2N2369
2N2369
2N2369

In my unit, the 10MHz source is a high stability, low noise, GPS disciplined OCXO. The 10MHz signal is multiplied by 9 using a pair of Schottky diodes to produce 90MHz. The diodes produce a comb of frequencies at 10MHz spacing and the following filter selects the wanted harmonic at 90MHz. A two-stage amplifier increases the level to +7dBm (easily – some attenuation is needed). The first stage uses one of the ubiquitous 'MAR6' devices that were made available at a recent MUD and which are quite plentiful, even in the UK. These particular MAR6s are believed to be SiGe devices and have a very respectably low noise figure at 90MHz. This is followed by a MAV11 to increase the level into the SBL1 mixer LO input.

In parallel with the x9 multiplier the 10MHz is also fed to a 2N2369 level shifter (to TTL level) before driving the clock 2 input to the SN74196. Drive level is not too critical with this arrangement.

I used an SN74196 because I had some and SN7490s are getting hard to find! CMOS can be too noisy in this application. 74F series would be better for low noise but weren't readily available.

The SN74196 divides by 5. The resulting comb, with strong fundamental at 2MHz, is then tripled in the second 2N2369 stage before filtering to select the wanted 6MHz signal. This is connected to the IF input to the SBL-1 mixer.

The RF output from the mixer contains not only the wanted 96MHz (90MHz + 6MHz) signal but also the various other products of mixing. Two-stage filtering is used to clean up the spectrum. No attempt has been made to provide wideband termination of the mixer.

A four pole (three would do, but who's counting?) LC filter removes all products well-spaced from the wanted 96MHz prior to the first amplifier. The output of the LC filter is then amplified in another 'MAR6' before the signal enters the 3 pole crystal filter. This is the stage which intrigued me the most. I hadn't built a VHF crystal filter previously and I was keen to try out the technique. I exchanged many e-mails with Brian, WA1ZMS, about these filters and tried several techniques including the 'phasing' design used by F5CAU in his 96MHz DFS. Whilst the phasing filter gave similar filtering characteristics to the LC matched designed used, insertion loss was a major problem due to the high termination impedance.

One of the secrets to the filter is to use small value trimmers across the small inductance across the crystal. These trimmers need to be carefully adjusted for best filter response and each interacts with the others! Adjustment can be tedious, but it is worthwhile persevering. Finally the filter is followed by another MAV11 to achieve the desired output level of +5 to +7dBm.

The TTL chip and both transistors are fed from a 7805 regulator, whilst the MAR and MAV devices are fed from a 7808 regulator.

Construction does not use a PCB; instead a half Euro-card (160mm x 100mm) with copper ground plane on one side and with IC pads and power tracks on the other was perfect for the job. I housed the DFS in a Maplin extruded aluminium case with a BNC connector for the 10MHz input and an SMA for the 96MHz output.

References:

F5CAU Web page - www.perso.wanadoo.fr/**f5cau**/page_10.htm

WA1ZMS – ARRL Proceedings of Microwave Update 2004, Irvine, Texas

WELL KNOWN U.S. MICROWAVER, W5ZN, BECOMES ARRL PRESIDENT

Editor's comment:
UKuG are delighted to see Joel Harrison, W5ZN, take the reins at ARRL. We know he'll have all microwavers' interests at heart in this important job. It's well worth reading the ARRL news bulletin below to see what he has to say about attracting newcomers to this technical pursuit we love so much.

ARRL HQ, NEWINGTON, CT, 20 Jan 2006:
ARRL First Vice President Joel Harrison, W5ZN, of Judsonia, Arkansas, will be the League's president for the next two years. He'll succeed Jim Haynie, W5JBP, who chose not to run for a fourth term in the uncompensated, volunteer post. Gathering in Windsor, Connecticut, for its annual meeting, the Board voted 10 to 5 to choose Harrison over ARRL Central Division Director Dick Isely, W9GIG, the only other nominee. Harrison, 47, said he believes Amateur Radio is looking at a different society--and pool of potential licensees--in the 21st century than in the past.

"One of the things we need to do over the next few years is realize that Main Street USA is not the Main Street USA it was years ago," Harrison commented after the vote. "We all remember those days when we became interested in radio and the magic that it provided to us. The magic is still there, but Main Street has changed." Harrison says this means that the League needs to focus on doing a better job of attracting the average person on the new Main Street of today "into the magic of Amateur Radio."

First licensed in 1972 as WN5IGF, Harrison says he's interested in virtually all aspects of Amateur Radio, from HF DXing and contesting to VHF/UHF/microwave and moonbounce. He's an ARRL Life Member. His wife, daughter and son all are Amateur Radio licensees. He'll become the League's 14th president since its founding in 1914.

Harrison said the ARRL's initiative to create an improved entry-level license also will be among his top priorities as he assumes office: "It is imperative for the Amateur Radio Service that we have an entry-level license that provides a wide variety of privileges for an individual to get into radio and learn a little bit about all of it," Harrison said during a break following the election. He said the League believes this approach will keep new licensees interested in ham radio.

Saying that the Technician ticket "is not attracting or keeping newcomers in its present configuration," the ARRL has asked the FCC to consider modifying the Technician license to provide limited HF phone, data and CW privileges.

Harrison also says he will promote the League's ***Petition for Rule Making*** (RM-11306) to have the FCC regulate Amateur Radio allocations by bandwidth. "Right now we do that by mode, and we're one of the few countries in the world that does that," he pointed out. "We need to change that and move forward with this initiative of regulation by bandwidth instead of mode."

…… Congratulations to Joel Harrison from all at UKuG ……

DIGIMODES AT MICROWAVE FREQUENCIES

Some interesting discussion recently took place on the USA Internet Microwave Reflector, administered by Tom Williams, WA1MBA. Here are just some of the emails that were posted. They may be of interest to readers and especially beacon keepers/planners:

From: KD7TS

W7LHL and I ran some tests a few years ago on 10 GHz. I don't recall if there was a JT65 mode at that time. We ran JT44, and I think we tried some other JT mode, which was less successful. It does work. See:
http://members.ispwest.com/kd7ts/html/tropo/wsjt1.html and the parent page:
http://members.ispwest.com/kd7ts/html/tropo/tropo.html
Mike KD7TS

From: W6GHV<kburt6@comcast.net>
It appears to me that the reception range of beacons could be significantly increased by going to JT65. I visualize a JT65 sequence as all or part of the beacon xmit sequence. Couple that with a DSP10 system for rcv and you are really in business.
73, Ken, W6GHV

From: G4DDK, SAM JEWELL <jewell@btinternet.com>
Our 'grand daddy' VHF beacon in the UK, GB3VHF, on 144.430MHz will be running JT65B in its sequence as soon as we re-install the new hardware. This is planned for the next few weeks. The source DDS and PIC controller have been built by G4JNT, and details of the work are on his web page (You'll need to Google for it!). We believe that the advantages of this approach are likely to be very significant, but time will tell. RTTY in the sequence didn't go down too well with users!

If the use of JT65 works (and is accepted) then we plan to add this facility to more beacons in the UK in the future.
73 de Sam, G4DDK

From: Peter Freeman, VK3KAI <Peter.Freeman@sci.monash.edu.au>
You might be interested in some experiments that took place some time ago. This is all from memory, as I am currently in Singapore for a couple of days and do not have access to all the details. All of the dates below are from the WIA web site where the record contacts are available.

There were several Digital microwave contacts made in one evening in VK3:
2.4GHz DIGI VK3FMD VK3WRE/3 20/12/02 143.5km
3.4GHz DIGI VK3FMD VK3WRE/3 20/12/02 143.5km
5.7GHz DIGI VK3FMD VK3KAI/3 20/12/02 143.5km

The DIGI refers to the Digital mode record for VK. Almost all of these contacts were made with JT44. There were some issues with the contact on 5.7 GHz, resulting from the LO instability at VK3FMD. Ralph (VK3WRE) and I were out on the local hilltop and conditions were reasonably good. There was no problem with signal strength - all signals were well above the noise and clearly audible. The contacts were made just to set initial digital mode records for VK. They still stand at the moment - nobody else has bothered to try to break them!

Additional records in VK currently are:

10GHz DIGI VK3TLW/3 VK3WRE/3 28/12/02 114. km
23cm DIGI VK2KU VK3KAI 28/05/03 625.2km.

The 23cm band contact was made between home stations. JT44 was the mode and Aircraft Enhancement was the propagation mode. It took almost 1.5 hours for us to complete the exchange - we had to wait for the appropriate flights to cross the path! I was tail-ending on the end of another attempt. If it had been a scheduled contact, I am sure that we would have completed earlier.

The biggest issue with any of these contacts was LO stability! So good luck - give it a go!

Peter VK3KAI

USING MMCW ON 23cm

From: LU6DW, Marc Franco <lu6dw@yahoo.com> Date: 25 Oct 2005

I had a great time operating 23cm EME this weekend. I worked 29 stations. I also worked four initials including LA9NEA, W6IFE, OK1DFC and RW3BP; Sergei's is the smallest station I ever worked off the moon. **He has only a 2.4 m dish, linear polarization and 25 W**. I have a 3m dish and circular polarization. I cannot see him with Spectran at all. He sees a weak trace due to my higher power **but cannot copy anything by ear.**

We used the MMCW Exchange software that Sergei (RW3BP) and a friend developed for 47GHz EME. It is a lot of fun to use it. We run 5 minute sequences, and we reduced the bandwidth to 25 Hz, at 12 wpm. The processing gain achieved by the signal averaging and the narrow bandwidth provides clear CW copy of signals that are so weak they do not even show up on Spectran. The receive audio is continuously fed to the computer speakers, but as time passes by, what you hear is the averaging of the previous transmission, so the signal "builds up" until it becomes readable. When Sergei sent for about 3 and a half minutes I started to copy my call, and at 4 and a half minutes I had complete calls. Morse knowledge is still required because the operator has to decode the information, like in a regular CW QSO.

The gain that can be achieved with this CW software is such that very small stations can also try CW EME on 23 cm or higher bands, where the coherence bandwidth is an issue. However, if a large station listens to the QSO, the operator will be able to copy the signals by ear (no computer needed), if the antenna gain is high enough. As I said, the transmission uses regular Morse code.

If anybody is willing to try this software, it can be downloaded from Darrel's web site at: **www.ve1alq.com**

It also has a simulator and an "echo" mode to check your own signal off the moon and perform system adjustments. I will be happy to set up a sked.

73, Marc N2UO/LU6DW

45 Million Miles from Earth

A free event presented by the Institute of Electrical Engineers.

In this, the first of the 2006 programme of IEE Lectures in Bournemouth, Radio Amateur Paul Marsh describes how he built and used a home made receiver to successfully receive signals from NASA's Mars Reconnaissance Orbiter, transmitting in X-band, at a staggering range of 45 million miles from Earth. As NASA's 'New Horizons' mission to Pluto gets underway, for how long can amateurs keep pace with the space race?

Speaker: Paul Marsh, IBM and keen Amateur Microwaver
Venue: Allsebrook Lecture Theatre, Bournemouth University
Date and Time: Tea/Coffee from 6:30pm. Presentation from 7pm, Thursday 2nd March 2006
For further details, please contact the local convenor at: **richard.atkinson@clickairport.com**

FT290R Switching Voltage

The FT290R uses 6.8V for its RX/TX switching logic and not 9V as is sometimes thought. This voltage is applied to the antenna socket during transmit to control a linear amplifier or transverter if required.
It can be easily checked by connecting a DVM to the telescopic whip during SSB transmit while NOT speaking into the microphone.
A problem I found when trying to check the VSWR between my FT290R and 10GHz transverter was that a diode in the SWR bridge shorted out the 6.8v signal to the transverter. The bridge uses the positive half cycles of the RF voltage on the line and cannot be easily modified to use negative half cycles ! **73 Paul G8AYY**

MICROWAVE WORKSHOP FOR BEGINNERS

... A UKuG Initiative ...

Peter Day, G3PHO

I've just booked **Saturday 27 May 2006** (10am-4pm) at the Burton Street Project in Sheffield, S6 2HH for a Microwaves for Beginners Workshop**. If you know of anyone within an hour's drive of Sheffield who is interested in making a start in microwaves I would appreciate you showing them this information.**

The Workshop is intended **only for newcomers** to microwaves... ie I don't want it to be a gathering of experienced folk like we get at a roundtable. The only experienced people there should be those of us who are involved with the instructing!

The suggested format of the day is shown below. I would very much appreciate other ideas for activities! (email me at **microwavers@blueyonder.co.uk**) Nothing is 'set in concrete' yet and I'm open to all input. If anyone in the region can come along I'd appreciate you giving a talk and/or demo, etc. I hope we can have lots of things to see such as equipment, simple test gear, photo displays, books, newsletters etc.

I also hope to have some freebies (goodie bag?) in the form of a sample Scatterpoint, CD of the talks, information leaflets, etc). There's lots to arrange before the event but I'd like it to be something really useful so others might do the same around the country.

In view of the room hire charge and the need to make up what would appear to be a "freebie" bag I'd probably need to levy small charge on those attending, say £2. I think UKuG would also subsidise the event.

Finally, in view of the limited space available, I have to have a **limit of 16 to 18 attendees** (not including instructors). The Burton Street Project Centre used to be an old Victorian school building and we have a large ground floor classroom, with white board, tables, etc. It's not palatial by any means but serves the purpose admirably and is very economical to hire. Next door is a canteen, available to us on a self-catering basis and outside is a large tarmac yard/carpark on which we could do some practical demos. I hope we can arrange to have a beacon or even a local (G3LRP ??) come on for a contact.

Provisonal programme:

10.00: Open up the place (set up visual display, projector, etc) ready for a 1030 start.

1030: Brief Intro followed by a 1 hour (+ 10 minutes for questions) talk on amateur microwaves, based around a club lecture I've given in the past.

1145-1230: Making a simple microwave transmitter/receiver (dare we do wideband FM here???)

1230-1330: Lunch (Sandwiches, tea and coffee could be available but there are two pubs very near for lunches!)

1330-1430: Practical demonstrations... hopefully arrange one or two skeds with local microwavers on 23cm and 10GHz. Using wideband gear in the large yard outside the meeting room.

1430-1530: Talk: Simple microwave antennas or: How to operate /portable or: Using Surface Mount components or: "what have you" (suggestions please?)

1530-1600: Open discussion... question and answer session with a panel of "experts"

1600: Close.

Aim of the day: To give attendees the microwave "bug" and make them want more!

This will be the first of the UKuG Microwave Workshops that the committee decided to stage at the last AGM. We hope other members of UKuG around the country will arrange similar meetings, for beginners only, across the nation. Come on folks.... put something back into amateur microwaves and recruit some new microwavers!

OPTICAL FOCUSING AND ALIGNMENT METHOD FOR MICRO-WAVE REFLECTORS

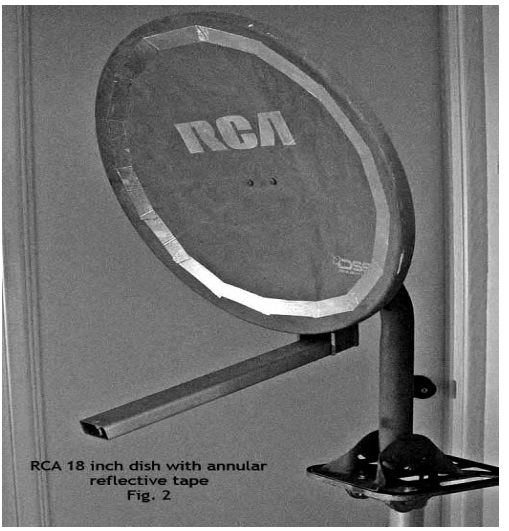
RCA 18 inch dish with reflective cross pattern
Fig. 1

A simple visible light technique for use in focusing the feedhorn for microwave dish reflectors is presented here.

Summary: A simple focusing and alignment method is described which uses strips of reflective tape applied to the surface of a parabolic dish. The method can be used to accurately find the optical focal point. The dish feed can thus be properly located. The feed can then be finely positioned via RF so that the focus will be inside the feed's phase centre. The same optical method can be applied for aligning other reflectors in the transmit/receive path, such as the "Flyswatter".

The setup requires a distant light source (light bulb) pointed at the virtual centre of the parabolic dish. Best results occur with a collimated source. From a suggestion at MUD 2005, you may also get results with a simple LED key ring light.

For most off-axis parabolas, the virtual centre is at the bottom of the dish. The dish is mounted so that its bottom is the same height as the light source. With the dish mounted for horizontal reception, the focal point is easily found by means of a piece of cardboard, moved toward and away from the dish surface. The best optical focus will represent where the phase centre of the dish feed should be placed. Final adjustments using RF can be made to optimize performance.



RCA 18 inch dish with annular reflective tape
Fig. 2

Credits:

1. Dr. John Laros, U. of Arizona, (Ret.) The basic approach was John 's idea; I just expanded upon it.

2. Proteep Mallik, Graduate Assistant, U. of Arizona. Proteep pointed out possible diffraction limitations with the partial reflective coverage of parabolic reflectors.

(continued on the next page ...)

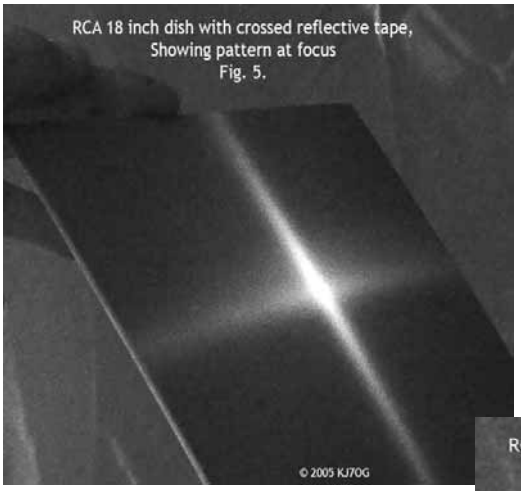


PHOTO LEFT:

The correct pattern when the light source is focussed

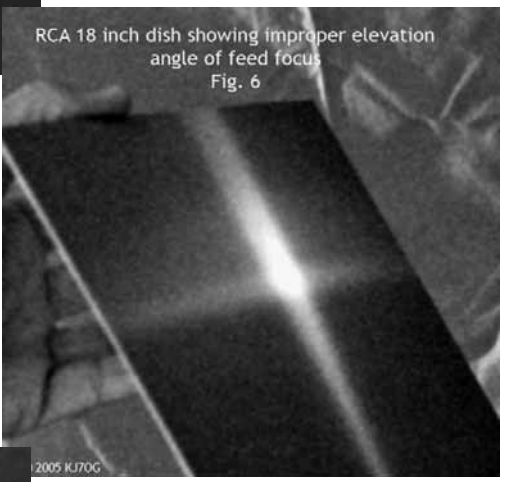


PHOTO right:

The pattern when angle of feed is incorrect

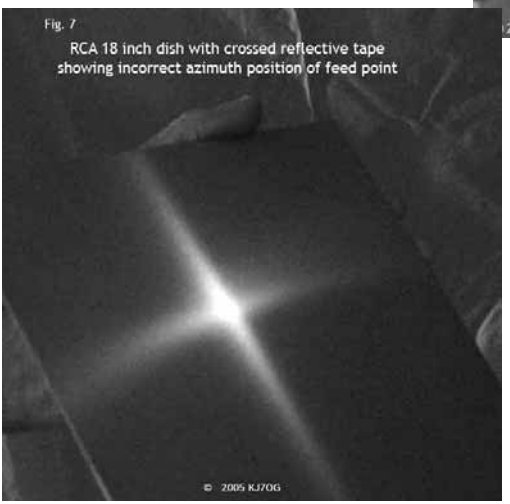


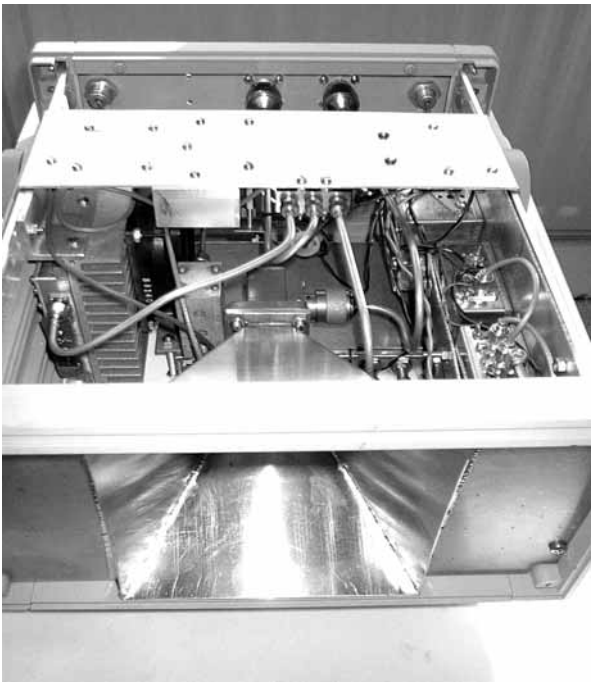
PHOTO LEFT:

The pattern obtained when the feed point is not correctly positioned in azimuth

COMPACT 5.7GHz TRANSVERTER USING THE NZ SSPA

... from notes by John Hazell, G8ACE

I have built a new 6cm rig with the NZ PA, this time with an internal horn for rapid rigging for local contacts.



The radome over the front of the horn is 1/32" fibreglass PCB with the copper etched off, not shown in picture. Return loss is a little over 20dB with the PCB in place, better without it. I calculated the horn with the W1GHZ program HDLANT and Brian, G4NNS, kindly folded the copper and soldered the transition. The largest size I could make was 13cm high, to fit the case but also 13cm wide. If I made it wider the E & H phase centres would go berserk!

I put the transverter on the roof and had signals bouncing off a reflection point to the east of me (possibly somewhere on the ridge 20km away) then back to G4NNS behind to the NW and G4LDR west behind me. The signal was almost good enough for FM, with some shunting.

So the 16.8dbi calculated gain is quite potent for a our local contacts by reflection.

The photo above shows the transverter with the top cover and radome removed. The basic transverter and LO are just visible in the bottom of the box.

FRENCH MILLIMETRE BAND ACTIVITY DAY

In March this year, a "journée d'activité", devoted to 24GHz and up, will take place in France:

Saturday, 25 March: from 1700 to 2300z
Sunday, 26 March: from 0600 to 1700z

Generally , Sunday morning activity is much higher than Saturday afternoon.

Please come on from the UK and other parts of Western Europe to support this activity day!

73 from Dom, F6DRO

So you didn't go to Microwave Update last year?

Don't worry ... the photos of the event are now online at: http://www.microwaveupdate.org/ along with PDFs of all the lectures. There are some fascinating photos of portable equipment and dish mounts.

This year's event is at Dayton, Ohio on the 20-22 October 2006

HANDY WORKBENCH AID

(and some tips for soldering Surface Mount Components)

… by Rick, K7LOG

In **Microwave Update Proceedings 2003**, I remember seeing a picture of G3PHO bent over his bench, working on a PC board. I also remember him saying something about using small lengths (1 to 2mm) of thin solder rather than the reel itself. It only took me a minute or two to find the page on how he built the DB6NT 3.4GHz transverter. The same article can be found on his website at **www.g3pho.org.uk**

I took Peter's advice to heart and it has helped me quite a bit. One modification that I did was to have a small bottle of rosin flux handy. I paint the two pads where the SMT chip will be going with the flux. My reason for this is two fold. The most obvious is to help the solder flow but the secondary reason is that the flux has a positive effect on anchoring the part. Of course you still have to hold it down with a good pair of tweezers.

So my steps in soldering a component to a pcb are:

1. Paint the pads on the PCB with flux
2. Drop the SMT chip on to the pads
3. Add a solder segment to each pad/chip electrode
4. Hold the part down with tweezers and solder one end of the component
5. Solder the other end of the part.

As Peter said in his article, it takes almost more time to explain it than to actually do it!

Like he has done, I will soon be building a small riser to go on the workbench to lift the pcb a little higher. This will make it easier to avoid getting neck ache when bending over the work wearing a headband magnifier!

Last week, whilst working on the KA7EXM power meter I knocked over the baby food jar of rosin flux on my workbench. Luckily there was very little in it so the spillage was limited. This

led to a little creative thinking about how to prevent this in the future. The result is shown in the photo on the previous page. For lack of a better moniker, I call it my soldering "helper". I built it out of plywood. It has the following.

- Water (blue bottle) to keep the soldering iron sponge damp
- Alcohol (clear bottle) to use with the QTips to clean up stuff if/when necessary
- QTip holder (1" copper water pipe coupler)
- rosin pot for sticking the soldering iron tip into from time to time (******)
- Small bottle of rosin for dipping the brush into (the bottle is similar in size to a nail polish bottle)
- 35mm film container of solder segments. I make mine using 0.020" solder (0.5mm if you prefer)
- Brush holder to keep the bristles off the wood

(******) A word about the rosin pot. Back in the early 1970s, I worked for a while at MIT Lincoln Labs where a lot of defence-related RF gear was researched and developed. One of the "old timer" technicians kept an open jar of hardened rosin flux on his work bench. When doing a lot of soldering he would occasionally stick the tip of the soldering iron into the flux and then immediately tin it. He claimed it made his tips last longer. I have been doing it ever since. The only difference is that this time I made the pot out of a 1" copper pipe cap. We'll see how that works out. I am still building up the flux in the pot. As the volatiles evaporate, the level drops. I suspect that it will take a week or so for it to get to the point where I can jam the soldering iron into it.

Good luck with your next project!

73 from Rick, K7LOG

Details of the new Satellite Transponder project recently announced by AMSAT-UK can be seen at:

http://www.uk.amsat.org/ and also **http://www.southgatearc.org/news/february2006/amsat-uk_new_transponder_project.htm**

A presentation on the satellite and transponder will be given at the **AMSAT-UK International Space Colloquium** that takes place from Friday 28th until Sunday 30th July inclusive at the University of Surrey, Guildford, England.

PLEASE HELP THE NEW MICROWAVERS ...

From: MW1FGQ "John Owen" <owen.home@ntlworld.com>

I know you publish any technical articles you get in Scatterpoint but I personally like small useful snippets such as RadCom's Tech Topics or the old Wireless World "Circuit ideas". I'm sure the more experienced members would have a fund of these to share in their useful circuits and ideas files and I know that we newcomers would appreciate them....

How about it you experienced people out there? Let's have your favourite idea, no matter how short!...editor

PA0EZ STEPS DOWN FROM THE CHAIRMAN OF IARU REGION 1 VHF/UHF/MICROWAVE COMMITTEE

The end of an era has arrived with Arie, PA0EZ, stepping down from a long period of extremely effective and efficient chairmanship of this important committee. Amateur microwavers everywhere will wish to thank him for his hard work and dedication, working for us "behind the scenes". Here is what he had to say in his final IARU Region 1 VHF/UHF/uW Newsletter:

Looking back at almost 40 years in the committee of which three terms as chairman, I think we did mostly what could be expected. But, of course, some things can be better, like more attention to action items between committee meetings and also a better contact with, for example, the microwave amateurs. Be aware that they are experimenting with advanced technologies but are very conservative in operational matters, like bandplanning.

I wish Michael [OE1MCU] a lot of fun as committee chairman . He represents the younger generation but I am happy that an old hand like Ivan will provide support where required.

I have left the committee, but not amateur radio! Microwaves and contesting will keep me busy.

Arie

First some overseas news .... Microwave activity in the Land of the Long White Cloud (NEW ZEALAND to the rest of us!)

The latest FUN newsletter from Kevin, ZL1UJG, has an interesting account of progress being made in the North Island ....

There were a number of new distances achieved on the Microwave Bands as the following reports show.

A new NZ 10GHz record, on CW between Ted ZL2IP, and Steve ZL1TPH was made on the 16th December, 2005. Ted operated from his home QTH in Inglewood, Taranaki and was using 1 watt to a 1.2m dish while Steve, using 6 watts to a 75cm dish was in the vicinity of Manganui Bluff , Northland. Both stations use prime focus dishes. The distance is just over **396km**. A contact was started on SSB, with 51/ 53 reports exchanged, however QSL details and hence confirmation could not be completed. They decided to go to CW to initiate the contact again, so that reports and confirmation details could be transferred.

On his way home, Steve also exchanged carriers from another location, where the path is predominantly over land. A lot of hard work, over many months, and a high number of previous contacts between them on 10GHz have resulted in this new Record contact:

5760 MHz Distance extended to 485Km (a report from Ralph, ZL2TV):

In the last days of 2005, the plan was activated to bring up the previously worked distance to a margin that was at least greater than that existing for the 3cm band. Steve ZL1TPH and I were now equipped with SSB capable gear and 3 to 5 watts power, up by 10dB on the 2001 effort. Transverters were used in conjunction with 144MHz low power IF transceivers, and different frequency offsets to prevent IF breakthrough. Antennas used were parabolic dishes, 60cm and 75cm diameter. Sites were carefully chosen to make all available use of possible forward scatter propagation, although other commitments and new subdivisions restricted activities on the day to a more marginal path. Our other option would have been to climb some very high and cold mountains, and we have decided to leave that project for teams with expertise in that area. Steve operated the northern end at Muriwai whilst John ZL4JY accompanied me to the southern site, at Makara, where I had first started work as a radio technician at the now abandoned NZPO HF receiving station.

We used a GPS to get the required aiming heading, Steve acquired our carrier as soon as it was radiated and, after a slight delay due to finger trouble with manual Tx/Rx transverter switching, the first contact was established using CW. SSB, although audible, was difficult and it was thought it best to at least complete the contact in CW first. A lower loss coax was then fitted and after repositioning the equipment to reach the feed the SSB voice contact was established and completed fairly easily. There were quick fades to the signal but it was enough to operate the S meter, 5 x 2 both ways. John ZL4JY (ex ZL2TRV) also made a separate contact before we dissasembled the equipment. A call was then made on 144.2MHz using a 4 el Yagi as the halo I normally run on the vehicle was not sufficient. Fine weather prevailed although the Hepburn charts for the day showed no enhancement conditions for the area in NZ. The distance between stations, pending verification, was **485 Km**.

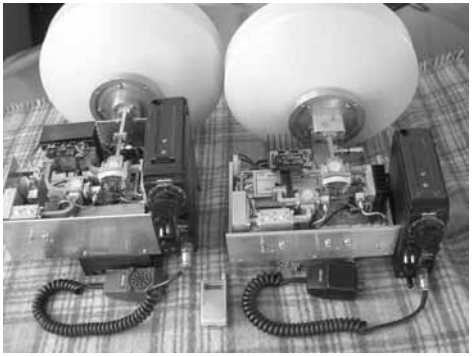
Simon ZL1SWW and Harry ZL1BK have been using the DXR700 equipment (5760 MHz) for **mobile to mobile contacts** (probably the first in ZL). They mentioned that the signal flutter was really bizarre and reflections were off many objects. ZL1UJG, in Hamilton, has been experimenting with a 25 km path to Tom ZL1THG (Gordonton). The signals were bounced off the hills near Taupiri and strong signals were received. The scribe was using a N1BWT (W1GHZ) transverter and PA into a small circular feedhorn, while stationary mobile. Tom is using a DXR700 transverter converted to Xtal Oscillator operation. He has converted the Oscillator multiplier to X5, instead of x3.

24GHz in NZ ...

The millimetre bands on NZ have always been sparsely populated (there was no one on 24GHz when your editor lived out there in the late 70s!) but nowadays, with the availability of those excellent waveguide switches from the Wellington VHF Group, DB6NT kits and the 2 watt PAs from the USA, there's no reason for not being on the band. So it's very interesting to read what is being at the other side of the world from the UK, particularly as UKuG has several members down there.

Steve, ZL1TPH, sends this interesting email outlining recent developments:

Hello to my microwave associates and amateur friends. Also to my friends in Europe, Peter G3PHO, John G8ACE, and Palle OK8AFC with also the inspiration from the UKuG microwave group members. I have just completed and tested another 24GHz



transverter (Photo above).

It's a combined project with the help from Brian ZL1AVZ and Ralph ZL1TBG and Kevin ZL1UJG and also the Wellington VHF group to get another station here in New Zealand up and QRV on 24GHz. Ted ZL2IP, also a member of the Wellington VHF group and who lives in the Egmont region has inspired this project. I will send this transverter down to Ted very shortly.

Ted's unit is the one on the right in the photo while mine is on the left.

Hopefully we can inspire others from the South to become operation on 24GHz. Myself and Brian ZL1AVZ will wish to attempt contacts with Ted not only in NZART contests but also activity sessions and NZART distance record attempts.

Thanks for all the help in this project to my amateur friends both overseas and local to increase more activity in New Zealand on the 24GHz amateur allocation. Lets push NZART and the Wellington VHF Group at the leading edge!

Editor's comment: *Many thanks Steve. You are an inspiration to fellow ZLs and to folk over here in Europe also. Building two transverters for the same band is not something that many of us do but to give one to another amateur to create activity is even more rare!*

NEWS FROM THE UK and EUROPE

Perhaps the highlight of the past few weeks was the tropo lift during the first week of February. Several reports indicate excellent conditions on all bands from 23cm right up to 24GHz.

First of all we'll look at the 24GHz news

where exciting things have been happening, almost on a weekly basis, at the QTH (JO01HR) of John, **G4EAT** He reports: "On December 11th I was hearing via tropo GB3KBQ which is rare and also GB3SCX at 599+10. At 09.20z I looked for GB3SCK and amazed at peaks of **599 over 220km**. It was a misty morning but the very low temperatures (reducing total water attenuation) and temperature inversion/ducting made me wonder how far 2W ERP can travel !!

Later I tested 24G with Maurice F6DKW JN18CS in Paris. **Maurice was hearing me over 348km** at 539 on peaks, despite only being just 59 on 10GHz. Unfortunately I could only copy Maurice at best 219 for a very short time and no qso as a result. Maurice runs 500mW so next time, hopefully, either he will have more power or I will be using a 60cms antenna."

On the 24th January John worked **F6DWG/P in JN19 over a 279km path**, easily the best UK Dx on this band this century! On the Sunday afternoon before the opening, 29 January2006, when **G3PHO/P** operated from the rare grid of JO03AE on both 10GHz and 24GHz, the aim being to give G4EAT, G8KQW/P, G3UYM/P and G0EWN a new square on 24GHz. 10GHz was taken along for antenna line up purposes. In the event, G8KQW could not make it due to illness and the path to G0EWN on 24GHz proved too difficult. **CW contact was made with G4EAT over the 168km path to JO01HR** at RSTs around 339/519 and with **G3UYM/P in IO92XA (127km)** at 559/519. 10GHz SSB contacts were made with G4PBP, G0EWN, G4BEL and G4EAT. John was delighted with the new square of course but the best was to come during the following week when the excellent tropo conditions extended to 24GHz to give him a home station-to-home station overland DX contact with **G0EWN in IO93FK, a distance of 241km** and what must be an **overland UK record for the band.** John, G4EAT, was running 2.5W into a 30cm dish and has a sub 2dB receiver NF.

Gordon, G0EWN, in Sheffield, runs around 1 watt to a 60cm offset temporarily set up just outside an upstairs window. At the time of this amazing contact, the signals between to the two stations on 10GHz were end stopping on SSB and were the strongest G4EAT had ever heard from a station outside his immediate locality (ie G8APZ). On 24GHz, the signals were S9 on ssb! Needless to say, your editor was deep inside a TV programme at the time and missed all the goings on!

John's 24GHz resumé now looks like this:
9 LOCATOR squares in 3 countries, worked with 3 squares 1-way; heard by F6DKW in JN18; heard GB3SCK beacon in IO80; heard ZXO/P in IO90 ... pretty good, eh!

John's local QRM, **Robin G8APZ (JO01)** is making the final push to be operational on 24GHz . He sent the following "saga" as he put it, about his efforts to get on the band:

I originally bought a WG22 relay from NZ for this project but when I acquired the Spinner 4 port relay, I decided to stay in WG20. I passed the WG22 relay on to another chap who needed one, at the price I paid for it, so I've sort of burned my bridges! Besides, I don't have enough WG22 or flanges to do what I need to do. The 24GHz projects here have been :-

1. Plessey Gunn FM unit in the late 80s. I had some QSOs on it across the Thames estuary from Herne Bay to Southend, and further up the Essex coast, but there were too few stations to make it worth going out portable with!

2. I built all the Mk1 DB6NT units including the 12GHz oscillator and 100mW PA about 10 years ago, but was unable to complete the project due to not locating any suitable DC blocking Tecelec 0.2pf SMD caps. The final death knell for that project was the band change from 24192 to 24048MHz !

3. I started accumulating all the ancillary bits and pieces during that project, but decided in October last that as life is too short, it was time to bite the bullet and throw some money at it! So for my third attempt, I have bought all the DB6NT modules ready made, and a 2.5W PA by mmTech from Paul Drexler. I have a brand new 33db horn antenna, which was checked at Martlesham and I now want to get it all built without further delay! So now I'm fired up, and enthused, I don't want to lose the impetus! **(see the wanted ad on the back page if you can help Robin further ...ed).** I'm hoping to get 24GHz on the mast as a home station setup, and if all goes to plan, will also take it out at Walton on the Naze in May (M1CRO/p - G0VHF/p).

John, G4EAT, passes on the news that **Denis G0OLX** is also very close to completion on 24GHz and **Andy, G4MAP**, is looking at how to be operational from his home garden.

The bands below 24GHz ..

From Martyn, G3UKV ,ukv@ukv.me.uk> IO82RR:
I concentrated on 23cm, as from experience I know 3cm gets stopped by the local ridge of hills towards the Continent. I first noted the lift on Tues January 31 and picked up beacons as follows:-
GB3MHL 1296.830 5/9/9.
DB0JO 1296.854MHz JO31SL upto S8.
DB0VC 1296.920MHz JO54IF upto S6.
OZ1UHF 1296.955MHz JO57FJ upto S3.
SK6MHI 1296.800MHz JO57TQ upto S5.
SM6UHI 1296.805MHz JO57TX upto S4.
GB3ANG 1296.965MHz also upto S3 - not bad for 3W output!
These kept coming in for 3 days, until the morning of 2 February. I worked the following:
31 Jan: DK3BU JO33NO (651Km), SM6ESG JO67CC (900 Km),
1 Feb: ON4IY in JO20IV, DK6AS JO52JJ (1000Km), DJ6JJ JO31LG, and finally HB9AMH/P JN37OE for a new country/ square.

Many other ops. worked much more exotic DX, but I was well pleased from this poor location. Also had a few on 70cm. I did try with 3 stations on 3cm, but no QSOs resulted. **73 Martyn G3UKV**

Nick, GM4OGI (IO85DX .. A nice LOC!) sends in a mouth watering log of stations worked between 30 Jan and 1 Feb. We can only make a précis here but many of them were around the 700—1000km distance mark on both 1296MHz and 10GHz. His average distances worked over that period were 898km on 1296MHz and 852km on 10GHz!

First of all here is his detailed weather and propagation report on the lift:

I have been busy chronicling the event in one of my many notebooks for future reference. I find much of my time is spent listening around for weak beacons and trying to identify trends. The system efficiency is hampered by having an antenna that needs to be set outside by hand so it takes about 5 minutes to set up a contact, by which time propagation has changed .... but, no excuses, it was fun! So a very quick summary:

30th January 2006
07.30utc - SK6UHF, SK6UHI and OZ1UHF all present on 23cm at reasonablesignal levels (549)
11.00utc - OZ1UHF and DB0VC only present on 23cm at about the same signal levels
13.00utc - DB0VC appeared on 3cm at 579
16.30utc - worked OZ1FF on 3cm (740km) very strong signals - he was 59+40 and I was a mere 59 with my 200mW
16.51utc - heard SK6MHI on 3cm at rst549. Note very strong RADAR interference on 23cm from about 123 degrees

31st January 2006
Conditions remain excellent to the East and South-Easterly directions on 23cm. Very strong RADAR on all headings SK6MHI, SK6UHI, OZ1UHF, OZ5SHF and DB0VC all good signals with slow qsb of the order of 15mins). Freezing fog arrives at about 05.30 covering antennas in the region with very think layers of ice. It remains that way all day until early evening.

1st February 2006
Very much the same conditions as the two previous days with the same collection of beacons being logged, although propagation is markedly biased towards the South-East. No beacons heard on 3cm. It was noted that DB0JO and DB0JK beacons being heard by Ray, GM4CXM, in IO75

I worked Heino DJ6JJ for the first time but only when I pointed the beam at about 110 degrees. No signal heard on the direct path.

From about 20.00utc GB3MHL was audible at good strength for an overland signal (rst529). Worked G3XDY for the first time on 23 and understood that Sam G4DDK heard my signals although nothing was heard from him.

2nd February 2006
Quiet day.

3rd February 2006.
Conditions clearly moved to a North-South path although SK6MHI, SK6UHI, OZ1UHF, OZ5SHF and DB0VC are audible at times but far weaker than previously logged. GB3MHL was a consistent good strength and I noticed throughout the day an absence of aircraft scatter signals from the beacon. Astonished to hear a consistent and weak (troposcatter) signal on 1296.220 that proved to be HB9AMH. It was present all morning but weakened as the day progressed. Had we been able to concentrate on 23cm early in the day I am sure we could have worked each other, if not me then Ray GM4CXM.
17.00utc - GB3MHL remains at the noise level and all other beacons seem to have disappeared.

4th February 2006.
Conditions appear normal.
Since changing a couple of rf lines and generally checking the health of the 23cm system I am surprised to be able to see a positive trace of GB3MHL on Spectran but it is far better defined using SpecJT (part of the WSJT package). The signal is definitely that of the beacon as I heard the callsign on one of the many tropo peaks. The signals sits at about the detectable noise floor so provides me with a decent indication of conditions. **One point I must make is that the best dx seemed to arrive from the direction where most noise was detected**. This noise level varying by about 3dB.

Aircraft scatter signals have returned to GB3MHL. Now that I have the direct tropo reference signal visible I note that the majority of scatter signals start at about 600Hz lower in frequency. **Regards Nick - GM4OGI**

The best of GM4OGI's log entries are:
1296MHz:

DL0SHF	(JO54CG)	903km CW	
SM6EAN	(JO57WQ)	964km SSB	
SM6ESG	(JO67CC)	981km SSB	
DF9QX	(JO42HD)	909km CW	
DK6AS	(JO52JJ)	1021km CW	579/579
DK3WG	(JO72GI)	1250km CW	
SM7GEP	(JO77IP)	1132km CW	

On the 31 Jan he just missed out on a full exchange with OK2POI (JN99AJ) on 23cm CW. It would have been a fantastic

DX contact at 1629km!

10GHz:

OZ1FF (JO45BO) 740km CW/SSB
SM6EAN (JO57WQ) 964km CW

New UKuG member Ray James, GM4DXM (welcome Ray!) **in IO75TW** fowarded a similarly long list of microwave DX worked over the tropo lift period. He covered the period 28 Jan to 1 Feb and opened up his 1296MHz logs with a 911km CW QSO with DJ6JJ(JO31LG) on the 28th Jan. Over the next few days he made some really excellent contacts, the best being with DG1KJG at 950km (J030NT), OZ7IS at 1040km (JO65DQ), SM6EAN 1009km (JO57WQ), DF9QX947km (JO42HD), DK6AS 1061km (JO52JJ), **DM2AFN 1319km** (JO61WB), DL1SUN 1038km (JO53PN), SM7FMX 1078km (JO65KN), SM7ECM 1092km (JO65NQ), SM7LCB 1294km (JO86GH). **All these were CW qsos using just 10 watts to a 23 element Tonna yagi at 11m agl !!! What a wonderful list of 23cm DX!**

Ralph, G4ALY(IO70VL) reports as follows:
During the big opening at the end of January 2006 and the beginning of February I worked three new countries on **23cm** - Denmark, Germany and Switzerland stations worked OZ1CTZ 1089.8km , DJ6JJ 786.9km and HB9AMH/P 910.2km. On **3/6cm I worked HB9AMH/P on ssb 910.2km. This is new personal ODX on those bands.** Pity I am west of Dartmoor or I think I could have got into SM this time.

From: John Randall M0ELS <m0els@tiscali.co.uk>
On the 30th January , there was a good tropo opening on 23cm and I worked several SM & OZ stations, running 20w to a 23 ele yagi. Some stations like OZ5KM were 5/9+ for long periods.

I did notice severe fast, sometimes slow fading at times. A good evening was had by myself and, to cap it all off, my 23cm amp kit arrived from across the "Pond". So, in between rubber-necking the kit, I was working dx on 23cm! The 23cm pa is 2x 2C39ba tubes with 10W in and 150W out. Another major addition is a 55 ele tonna, which is waiting for warmer weather. I have also added some pics to my webpages.....

Here are some of the stations I worked as indicated with 20w to 23 ele yagi above roof peak

30/01 OZ6OL 5/9 5/5 JO65DJ
30/01 SM6ESG 5/7 5/3 JO67CC
31/01 PA3GFY 5/5 5/3 JO23SB
31/01 OZ2OE 3/3 5/3JO45VV
31/01 OZ1KFZ 5/9 5/9 JO56AA
31/01 SM6EAN 5/5 5/5 JO57WQ
02/02 GW3PKH 5/5 5/4 IO81JN

73 John - M0ELS

NEWS FROM NEW UKuG MEMBERS

From John Owen, MW1FGQ(IO83):
10GHz WBFM - since my recent test with Graham GW8RAK I've managed to zap my TDA7000 (don't ask), I didn't have a spare so I've just bought one of those cheap FM personal receivers for 49p! They are based on a TDA7088T which is the successor to the TDA7000, it's probably been done before but so convenient if it works well.
10GHz NB - Martyn G3UKV sold me his SSB transverter in November last year and I've just stripped out an old Pye box for a housing, I'll probably get it running with the bare 200mW first before trying to sort the input levels for my 1W Qualcomm amplifier - assuming it works.
Optical system - Not much progress yet but all I need to make a start is the wood for a housing and a photodiode, I have the lenses and most other bits, I've just sent off the money for a Datong FL2 filter which came cheap,I hope it'll take care of all my receive filtering needs.
23cm - my only contact during the recent good conditions was with DK3BU at 690km, he was very surprised that I was only running 2W - I measured it afterwards at 1.6W key down - he was "only" running 100W into a 90cm dish, I heard a lot of very strong stations but they weren't listening or I was hearing a side lobe.

From richard@herbert.gb.com:
After an elephants gestation period I now have an operational 23cm station in IO82SQ, about 200m ASL.
As this is my first microwave station I had to learn a lot of things on the way as I transition from long wires to long yagi's most of which was collected information in other peoples heads.

The problems are not only electrical but also mechanical as I had to devise a lean over mast to access the antennas (yes 23cm is being kept company now by siblings at 70cm and 2m).

My thanks go to Martyn G3UKV for help on all counts including the foot at the bottom of the ladder!
In this project we also learned a lot about suitability or otherwise of commercial antennas for the bands they claim to operate in.
Thanks, Richard

From: Eric, EA5GIY<ericvo@telefonica.net>
Activity is still scarce here, with 6 stations QRV on **10GHz**, 3 near Barcelona, EA3XU, EA5YB/3 and EA3FLX, 2 near Alicante, EA5JF and myself EA5GIY, 1 in Melilla (North Africa): EA9HA
We all have portable stations and EA3XU and myself have also fixed stations.
On 24 GHz: EA5YB/3 and EA5JF are QRV, EA5GIY assembling a station.
On 5.7GHz,I'm still alone ...
So, basically, all active Spanish SHF stations are on the Mediterranean coast. Most activity is between May and October, especially the last week-end of every month when the French and Italians have their SHF activity days.

June and July are the months of many dx-expeditions in the Mediterranean area, allowing us to work new squares and sometimes new countries. Various contacts of 900 or 1000 km with well equipped stations are not uncommon during a typical summer week-end. EA3XU and EA5YB/3 even worked into Malta last summer from a hill near Barcelona !
Best 73 Eric EA5GIY

From: F9OE <F9oe@wanadoo.fr>
I'm ready on 23 cm (15 W / 23 el.) and 3 cm (150 mW/ dish 48 cm) from **IN78QG.** I'm retired ... skeds possible !
DX G3XDY on 23 cm and G4ALY on 3 cm.
73 fm F9OE/P Brittany.

WANTED....

JOHN RANDALL <m0els@yahoo.co.uk>

I have aquired a gs35b 23cm amplifier, which will put me on the map no doubt, so I look forward in working many of you soon with 400w up the spout. All is need is the ht side so, I am looking for a ht transformer either 3500v@1.5A or 1750@1.5A as well as a 20uF 5-6kv oil capacitor and a voltage doubler pcb at reasonable and not silly prices! I can collect within a good radius.

NEWS AND VIEWS FOR NEXT MONTH BY 13th MARCH 2006 AT THE LATEST PLEASE!

73 from Peter, G3PHO

BEACON NEWS

ON0KUL/B (JO20KV) beacons on 13 and 3cm are now finally on the air with the new call sign on 3cm, and 13cm operational as well.

For more info go to: http://www.qslnet.de/member/on4iy/on0kul.html

Reports will be much appreciated. Send to: Christophe, ON4IY at:
christophe.huygens@cs.kuleuven.ac.be

LA4SHF on 23cm was having problems this last week so I took it down 2 days ago (04 February 2006). It was giving out only 0.5 watt and had sub carriers +/- 16kHz centred at 1296.901.

I trimmed it up yesterday and trail tested it from my home qth from 2000GMT yesterday to 1130GMT today. Then I drove down to the beacon site and put it on at 1330GMT. It now is on 1296.890 (+-3 kHz due to temp drift) and is transmitting 5.2 watts rf out or >50erp s.w direction (200 degrees).

It sends it's call sign 2 times with downkey in between, and then call + qra locator....
Also today I modified the 3cm beacon with a 1 Watt pa....it is on 10368.850MHz with a south/north 2 x 13 db horn.

73 from Jan, LA3EQ <lustrup@start.no>

AN UPDATED uWAVE BEACON LIST

can be found at **www.g3pho.org.uk.** The 23cm list is particularly accurate and up-to date, courtesy of Nick, GM4OGI who is constantly monitoring many of them and receiving beacons news from all over Western Europe. The 23cm list is also available as a downloadable PDF file at the same website.

www.wa5vjb.com

Is the URL of the website of our very own UKuG Committee member Kent Britain. As many readers will already know, Kent has designed a range of pcb microwave antennas that may be used in their own right or as a dish feed. You can now find out about them all and download data sheets about them, as well as purchase them online, at the above web address.

FOR SALE:

Yaesu FT 897D HF/VHF/UHF all modes transceiver with YF 122C 500Hz CW filter. In very good condition - 18 months old and little used - the plastic film is still on the LCD display! Manuals, mic, power lead etc, are included but no box. See http://www.yaesu.com/ for specifications

Note that with this rig, the display can be set to indicate the true output frequency when driving transverters - all the way up to 3cm! It makes an excellent IF for car portable microwave use, and gives you 2m and 70cm talkback all in one box!

Reason for sale - in a moment of weakness I bought a TS 2000!

Price: £550 ono - please call me, Dave G4HUP, on 01473-737717 or e-mail at:
g4hup@btinternet.com

WANTED

Waveguide WG20/WR42 - I need some 90 degree twists, H plane elbows (especially if tight radius), E plane bends, an SMA transition, and some spare flanges (choked or plain).

Please email details with price required to :- Robin Lucas, G8APZ
<g8apz@g8apz.org.uk>

WANTED ANOTHER PREAMP !

Another 24GHz preamp/gain block like those nice surplus ex-digital link jobs 22-24G, with preferably WG20 or WG22. Gain >10 dB
NF < 5dB. SMA job acceptable if nothing else!
Contact me :- Adrian Ball, G8PSF, ENFIELD.
tel: 020 8 366 5164 or email me at:
adrian.g8psf@blueyonder.co.uk

MORE USEFUL SURPLUS FROM NZ

I have just had an email from Leon at the NZ Wellington VHF Group. He has some NICAM Encoders for sale on behalf of the Group at a price which might make them very attractive to serious ATVers. I'm not involved in ATV but I know some of you are and their sale might help the cause of VHF ->light in NZ.

The surplus list can be found in the Wellington Group's web site at:

http://www.vhf.org.nz

73 from Chris GW4DGU