FROM THE EDITORS

MARCH 1993

Many thanks to all our contributors this month. The input has been so good that we will have to hold over the 1992 DX path maps until next month so that we can publish the technical item that has been kindly submitted by G3LYP, along with the mountains of activity news! By the way we have had a tremendous reponse to our request for details of paths worked last year, including a complete breakdown of the 1992 Cumulative paths. The maps will be our most comprehensive yet.

NEXT MONTH - A VERSATILE COAX-WAVEGUIDE TRANSITION/SWITCH by PETER,G4BCH.....G4BYV'S MAST MOUNTED 10GHz STATION.....SIMPLE MICROWAVE ADAPTER FOR A SPECTRUM ANALYSER

1993 CUMULATIVE DATE CHANGE

Please note the change in the date of the **MAY 10GHz cumulative.** It will take place on **Sunday 30th May 1993** and not on the 23rd as stated in the January newsletter. The mix up was due to your editor being provided with an incorrect list and was not one of the usual gremlins that infests this word processor!

BEACON NEWS

A recent RSGB Microwave Committee meeting noted the following new beacons as being "in the pipeline":

10GHz: GB3CRC (Cambridge)
GB3KBQ (Taunton)
GB3RPE (S.Wales)

10GHz:

GB3SCX (Site change to Nine Barrow Down)

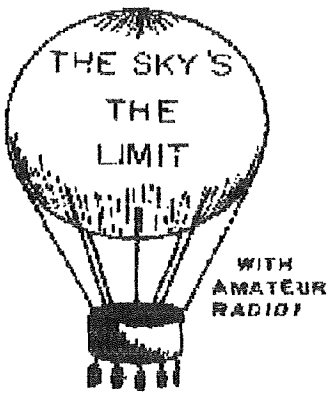
2.3GHz:
GB3WWH is permanently closed down and the gear is on offer for a new site.

24GHz:
The proposed Cardiff beacon on this band has been held back until a decision is made as to the section of the band in which it will operate.

ROUND TABLE NEWS

We hope to arrange a Microwave meeting at Sheffield in the near future, possibly in May or early June. There are one or two problems to sort out as yet but watch this space next month for further information.

NEWS, VIEWS AND ARTICLES ARE MOST WELCOME... PLEASE SEND THEM TO EITHER BARRY, G8AGN, 345 REDMIRES ROAD, SHEFFIELD S10 4LD, OR TO PETER, G3PHO, 146 SPRINGVALE ROAD, SHEFFIELD S6 3NU. **PREFERABLY BY THE LAST FRIDAY OF THE MONTH.**



FOR SALE

HEWLETT PACKARD 340B noise figure meter price £50 (with manual). Contact Les Sharrock, G3BNL at: 7 Clement Bois, BRACKLEY, Northants, NN13 6LH or telephone on 0280 703512, evenings.

10GHz and 24GHz pcbs available for the JE1AAH designs.Buy direct from Toshi, JE1AAH:

Local Osc/multi 2.24GHz in
4.48GHz out
Price: 1500 yen

" " 4.48GHz in
4.48 and 8.96 GHz out.
Price: 5000 yen

T/R module: 10GHz or 5.7GHz at 1280MHz IF, 10mW, 10dB NF (Mixer only)
Price: 5000 yen

LNAs: 10GHz or 5.7GHz.
Price: 2500 yen

HPAs: 10GHz 1 watt
Price: 5000 yen or kit for 53000 yen

5.7GHz 300 mW
Price: 2500 yen

PCBs for 24GHz are under beta tests at present.

GaAsFETs and HEMTS can be supplied for all designs.

47GHz unit with fundamental LO plus LNA is under development!!

FOR ALL THESE PLEASE WRITE TO:

Toshi Takamizawa,
Parktown 21-502 946-16
Kitahassaku-cho
Midori-Ku, YOKOHAMA 226,
Japan.
(Tel/fax: +81-45-931-5757)

INFORMATION WANTED

JOHN, G4BYV would appreciate any information on the following:

CAVITY type 804532/A00 AAL 009-78 with Machless 8533X contact-cooled valve. SMA input and output. The unit looks to be around 1000MHz. Has anybody made one work on 1296MHz? please ring John on 0362-638142, QTHR and in the Microwave Directory.

RSGB VHF/UHF CONVENTION SANDOWN PARK

We were very pleased to meet a number of microwave enthusiasts who visited the Microwave Committee stand at Sandown this year. Committee members attending included G3JVL, G4FRE, G3WDG, G4KGC, G4KNZ, G4DDK, G8AGN, G4EML and G3PHO.

The stand did good business with its Components Service, while G3WDG and G4KNZ present lectures in the afternoon. Your scribe had the pleasure of introducing both speakers to large and interested audiences. Steve, G4KNZ, gave a most interesting talk on 24GHz, covering all aspects of the band from general operating and wideband equipment through to his latest experiments using narrowband techniques.

Charlie, G3WDG spoke on the latest WDG 10GHz modules, bringing the audience right up to date. He has a few 800mW prototype PAs for sale at cost to those who would like to help support further developments, one of which is a 2 watt PA! Charlie concluded with a brief description of his 10GHz EME work (see last month's newsletter). The tape recording of the WA7 CW signal was very impressive!

10GHz Cumulative Results 1992

Pos	Call	Points	QSOs	Locator(s)	Power	Antenna	Best DX	km
1	G3JVL	12612	85	IO90MS	20W	0.9m dish	G3PHO/P	333
2	G8KQW/P	10769	85	IO91GI	50W	1.4m dish	F6DKW	390
3	G3FYX/P	10528	71	IO93BA, 81PH, 91GI	3W	0.9m dish	G3NWU/P	364
4	G3PHO/P	9571	59	IO93EH	0.2W	0.6m dish	G6XM/P	338
5	G3ZME/P	8710	69	IO82QL, 82NN, 82RQ	0.8W	0.8m dish	G3LQR	292
6	G4BRK/P	7513	65	IO91FN	0.3W	1.2m dish	G3PHO/P	234
7	G4JNT/P	7113	53	IO80UU	10W	n/a	G3LQR	295
8	G0API/P	6719	50	IO80UU	0.1W	0.5m dish	G3LQR	295
9	GW4MAP/P	6578	44	IO82JG	0.2W	0.6m dish	G8KQW/P	295
10	G4FCD	4250	39	IO91JV	6W	0.6m dish	G3PHO/P	210
11	G3JMY/P	3640	35	IO81PH	0.3W	0.5m dish	G3PHO/P	211
12	G3JMB/P	2414	29	IO90TV	0.1W	0.6m dish	GW4MAP/P	245
13	G8DKK	2328	25	IO91VX	12W	0.3m dish	G3PYB/P	275
14	G3LYP(/P)	1628	21	IO91OO, 91MP	20W/0.3W	0.4m dish	G3ZME/P	164
15	G0API	1167	12	IO80XS	0.1W	0.5m dish	G4MAP/P	184
16	G8AYY/P	280	5	IO93AD, 93AF	0.01W (wb)	0.5m dish	G3ZME/P	84
17	G4KNZ/P	169	4	IO90MX, 83LC, 93UK	0.001W	0.5m dish	G3PHO/P	85

Congratulations to **Mike G3JVL**, who wins the G3RPE memorial trophy as overall winner, and who was also the leading fixed station. Congratulations also to **G8KQW** who was runner–up, and to **G8AYY**, as the leading wideband–only station. There were no foreign entrants this year. Thanks to G4BCH for the check log.

The contest continues to be popular, with entries slightly up on last year. The number of contacts made and scores are significantly up, by around 50% from last year, reflecting the increasing activity on the band. The number of home stations active is also growing (see Microwave Directory in December's newsletter). Most contacts were made using narrowband equipment, but some wideband contacts are also reported, and several stations out running wideband only.

The logs were generally of a good standard, except that most entrants only sent in logs for the best three events, rather than all events participated in. There seems to be some confusion whether to count cross–band contacts as one or a half QSO – the majority counted the contact as one QSO, and logs which differed were corrected.

G4KNZ

24GHz Cumulative Results 1992

Pos	Call	Points	QSOs	Best DX	km	Power	Antenna
1	G4KNZ/P	483	8	GW4JJW/P	90	50mW	18" dish
2	G8AYY/P	211	4	G4KNZ/P	86	7mW	12" dish
3	G3PHO/P	202	5	G4KNZ/P	85	7mW	20" dish

Congratulations to the overall winner, **G4KNZ**, who had the distinction of being active and making contacts in all 7 activity days! It is encouraging to see an increase in 24GHz activity this year in the contest reflecting the growing interest in this band. From the logs submitted, some 16 stations were active, which must be something of a record. Let's hope for even more activity in 1993 as well as a few more entries please!

G3WDG

PRODUCT NEWS

WG16-22mm CIRCULAR TRANSITIONS

Cyril James, G3VVB, has very kindly sent us a sample of his version of the G8AGN WG16 to 22mm pipe transition, described in the newsletter some time ago, and in Volume 3 of the Microwave Manual, page 18.6. It is basically a length of copper pipe (length approx. 110mm, internal diameter 20mm, outer diameter 22mm). One end has been formed into WG16 section, ready to solder to a suitable flange. This has been produced on a flypress by Cyril and is ideal for those of you who wish to feed circular horns such as the Amstrad type or to experiment with lengths of 22mm pipe as feeder for home station antenna systems. The article by G3LYP this month employs a very similar section of pipe. The sample received by the Newsletter certainly seems to be well made and is easy to incorporate into antenna systems.

Cyril is offering to make these transitions available to any microwaver for the very reasonable price of £2.50 each, inclusive of UK postage and packing. The transitions could be made in longer lengths on request but Cyril has little confidence in our mailing system being able to safely carry lengths longer than 6 inches without damage! Unless you need dozens of these transitions it is not worth the bother of making up the tool described by G8AGN when Cyril can provide you with ready made units!

Cyril may be contacted by telephone: 0726 842368

G3WDG MODULES - UPDATE

G3WDG004 HEMT PREAMP

This module has now been Beta tested and Charlie is open for production model orders. The price is to be announced shortly but you can reserve a kit by giving him a ring (see later for number). The beta models give noise figures typically around 1.0dB at 11.5dB gain.

G3WDG007

The first prototype (using a MGF2415A device) is operating with around 800mW out. A second prototype is being built on the 1st generation layout.

Charlie is likely to have some more 007 prototypes for sale at £65 each. All others have been sold. Phone for details.

G3WDG008

Charlie is now considering this PA module with a target of 2 watts output. He is willing to develop it IF there is sufficient interest. If there are enough people willing to buy the development prototypes he will have sufficient funds to finance the final product. Development costs will be quite high for an amateur project. Get in touch with him if you are interested.

FOR FULL DETAILS AND A CURRENT MICROWAVE COMPONENTS PRICE LIST, RING G3WDG/G4KNZ ON:

0933-411446

USING BSB DISHES ON THE 10GHz BAND -- by Mike, G3LYP

The availability on the surplus market (eg. from Satellite Surplus, Stirchly Lodge, Stirchly Village, Telford, Shropshire.) of 35 centimetre dishes, designed for receiving BSB satellite TV transmissions, at a price of about £15 has made their use on the 10GHz amateur band an interesting possibility, for those wanting a small, but efficient antenna for home or portable use.

The price quoted above is for a new, boxed, kit of parts including the dish, LNB, and a selection of useful hardware for mounting purposes. Second hand assemblies are also available for £7.50.

Over the last few months, a number of experiments have been carried out with G3BEX, the results of which have been sufficiently encouraging to be worth passing on to others who may wish to use this approach.

The assembly of the dish is very simple following the instructions provided in the kit, and it is only necessary to devise a system of mounting the dish on a mast in such a way as to allow adjustment in the vertical plane. This can be done using the hardware supplied, and two "U" bolts to suit the diameter of the mast used. In this case 1.5 inch exhaust fittings, available from car accessory shops for about 50 pence each, were used. Based on experiments with a signal from GB3SEE, it was found that the plane of the dish should be set at an angle of about 25 degrees to the vertical mast (ie. tilted forward by this amount).

An initial experiment using the three stage amplifier in the LNB as a receiving pre - amplifier was not very successful, mainly due to difficulties in getting a good mechanical and electrical connection to the drain of the third GaAsFET on the PCB. As purpose designed amplifiers are available from G3WDG, it was decided to scrap the electronics in the LNB and use only the feed horn in future experiments.

When the PCB and the plastic radome are removed, the polyrod lens is exposed. The purpose of this component is twofold. In the first place, it modifies the radiation pattern from the horn and allows more effective illumination of the small dish. The second function is to allow the antenna to receive left or right handed circularly polarised signals. It will be seen that the pick-up spill on the PCB is set at an angle to the blade on the underside of the polyrod lens. If the antenna is to be used with linearly polarised signals, the spill will have to be parallel with the blade on the polyrod.

The polyrod can be removed from the horn by inserting a piece of dowel, with a "V" shaped notch, into the horn and tapping carefully with a hammer. The shape of the notch must be such, that when placed over the blade of the lens, the pressure is applied on the shoulders, rather than the thin tip of the blade. If this is not done the blade will almost certainly be broken. When the lens is withdrawn, it will be found to have lugs on either side which fit into slots in the top of the horn. Although there are two sets of slots provided, neither of these are suitable for linear polarisation, and two new slots must be filed with a needle file or other small file. The lens will later be re-inserted in the new slots, taking care that the sealing "O" ring seats properly in it's groove. As considerable pressure is required during this operation, to avoid damaging the tip of the lens, a hole is drilled in a block of wood so that the sides of the lens seat on the top of the hole, but it's tip does not reach the bottom of the hole.

The base of the LNB is levelled by removing two small lugs, and the boss on to which the 7805 regulator was bolted, and finally rubbing on a sheet of abrasive paper on a flat surface. A brass plate (16 SWG) is cut to fit over the base, and is attached using the original 3.5 mm screws which were used to mount the PCB. (These screws will have to be shortened by about 3 mm before re-use.) The position of the holes on the brass plate can be accurately placed by using the cast aluminium cover removed with the PCB, as a drilling template. The next job, and potentially the most difficult, is to mark through the horn, the centre of a hole on the brass plate which must be on the same centre line as that of the horn. The first idea tried was to turn a steel rod to be a sliding fit inside the horn, and then turn a sharp point on the rod to act as a centre punch to mark the centre of the hole. Unfortunately the inside of the horn tapers slightly in either direction away from the centre, and so this method does not provide the accuracy originally expected. In the end it was necessary to use a combination of drill, reamer, and half round file to make a hole slightly larger than the outside diameter of the horn and concentric with it.

The construction of the remainder of the transition depends on the type of termination required for connection to the rest of the system. Where an SMA or similar connection is required, a cavity is made by boring a piece of 7/8" diameter brass rod to make a tube with internal diameter of 18 mm (to match the diameter of the horn), and of about 36 mm in length (not critical). A shoulder is turned on one end to allow the tube to seat in the hole in the brass plate. A flat, large enough to allow a two hole SMA connector to be mounted with the mounting holes in line with the axis of the tube, is milled or filed along the length of the tube. A hole is drilled 6 mm from the end of the tube furthest from the mounting plate for the spill of the SMA connector. Initially this hole should be drilled 1.3 mm diameter, and the connector placed in it, while the two mounting holes are drilled. Finally the hole is drilled to 4 mm. The mounting holes can be tapped 8 BA or an equivalent metric size. Three holes for matching screws are then drilled and tapped 8 BA at 5 mm spacing along the flat between the connector and the horn. Finally, a shorting plate is soldered across the end of the tube nearest to the connector, and the whole assembly is soldered to the mounting plate, taking care to avoid solder entering the cavity. The SMA connector is modified by having a piece of copper tube about 8 mm long and 3/32" diameter (1.3 mm I.D.) soldered over the spill (See Fig 1).

Where it is desired to go directly from the horn to waveguide, a modified version of the above transition can be used. In this case, the length of the 18 mm I.D. tube is reduced to about 25 mm, and the end of the tube furthest from the mounting plate is reduced in diameter to be a sliding fit inside a piece of 22 mm copper water pipe. A taper of about 2 degrees is turned on the inside of the brass tube so that there is a smooth transition between the brass tube and the copper pipe. Using a form tool as described in "The Microwave Handbook" Vol 3, page 18.6 by G8AGN, the other end of the copper pipe is transformed from circular to rectangular, with the dimensions of waveguide 16, and soldered to a suitable flange. As before, three 8 BA matching screws are placed at 5 mm spacing on the brass tube in a position where they line up with the blade of the polyrod lens in the LNB horn. Finally, the brass tube, the copper pipe, and the mounting plate are soldered together, taking care that all the components are correctly orientated with respect to each other, and, as before, that solder does not get inside the waveguide. (See Fig 2).

After the polyrod lens is re-inserted as described above, the radome is replaced and sealed to prevent ingress of moisture. The modified LNB is now mounted on the dish using the plastic bracket provided, and the whole assembly set up pointing into free space for adjustment.

Using a signal source on 10.368GHz (eg. a WDG001 module), and a directional coupler ("Microwave Handbook" Vol 2, page 10.18), the matching screws are adjusted to reduce the reflected power to a minimum.

For those who do not wish to tackle the metalwork involved in the above approaches. small cast aluminium horns are available on the surplus market (eg. from Sandpiper Communications, Aberdare, Mid Glamorgan.) which are terminated with a waveguide 17 flange, and which, using one of the transitions described by G3JVL in "Microwave Newsletter", October 1992, page 8, can be connected easily to the rest of the system. The only modification to these horns which is recommended, is the inclusion of three matching screws as in the two designs described above. Although slightly larger in diameter than the BSB horns, they will fit the same mounting brackets as the former, although some risk of breakage is possible, particularly if the plastic becomes brittle through exposure to light and air. (See Fig 3).

Results with the above feed systems have been very satisfactory, and all outperform the slightly larger 18 inch "Practical Wireless" dish fitted with a penny feed. The BSB horns appear to be slightly better than the third type, but the difference is fairly small.

As these dishes are quite small, the possibility of using separate dishes for transmitting and receiving could be considered, thus eliminating the need for costly SMA relays, or bulky waveguide switches.

As a final note, if it is intended to use the modified BSB horns in a permanent installation, steps will have to be taken to ensure that the joints between the brass plate and the aluminium casting of the LNB are well sealed to prevent water seeping into the joint. If this is not done, electrochemical reaction between the brass and the aluminium will result in severe corrosion.

(MANY THANKS MIKE FOR THE MOST INTERESTING ARTICLE .....Eds)

WORKING DRAWINGS CAN BE FOUND ON THE FOLLOWING PAGE

A NOTE FROM THE G4JNT WORKSHOP

I have just completed the breadboard/engineering model of a transverter for 144 to 1296 MHz. The module includes local oscillator, transverter interface (up to 3W) with all DC switching, and low power RF stages for up to 0dBm transmit output. By adding a LNA and Tx power amplifier a complete transverter can be built. The Rf and IF chains are broadband, with the RF band determined by a drop-in helical filter from Cirkit. The whole unit is built using surface mount, is the same size as a DDK004 board and fits in the same size tinplate box.
Other conversions such as 28-432 and (if you must) 144-432 and 432-1296 can easily be catered for by changing the filter. 28-1296 May be possible with an additional filter at the output. One further use for this transverter would be to generate a second IF for 'no tune' (printed RF filter) transverters for the higher microwave bands. This use was suggested by G3WDG who gave me the incentive in the first place. Beta testing will commence soon, and the module should be available through the usual channels.

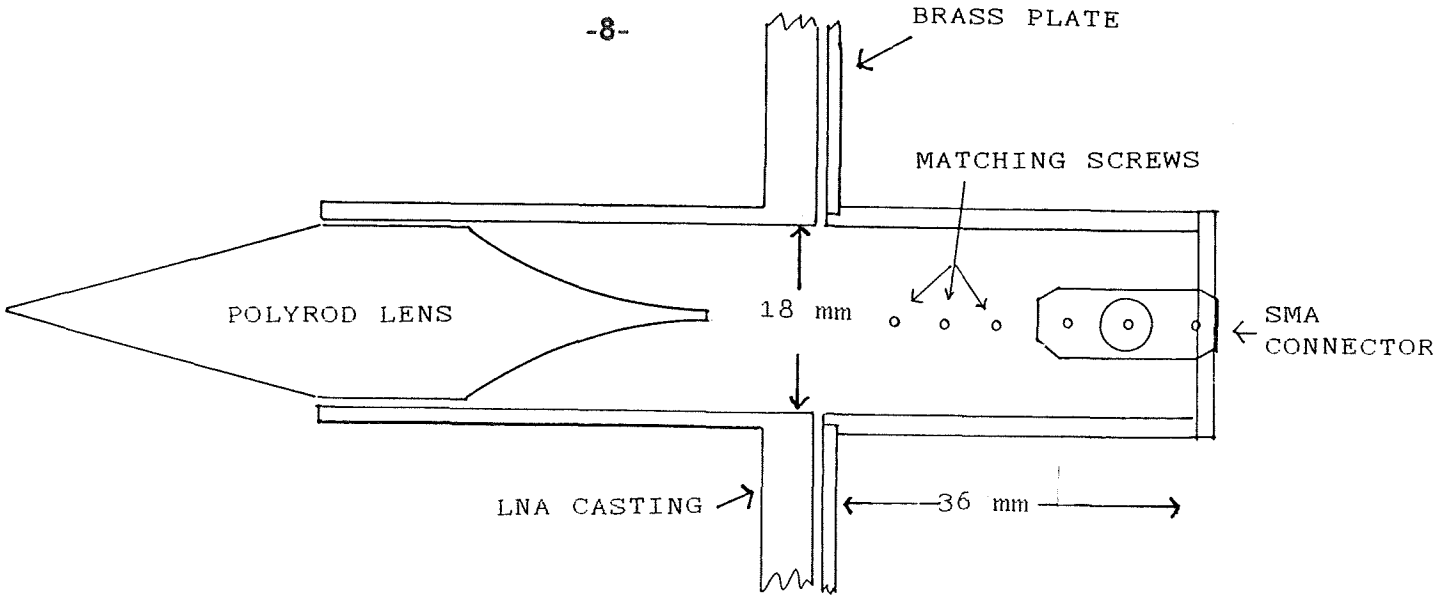
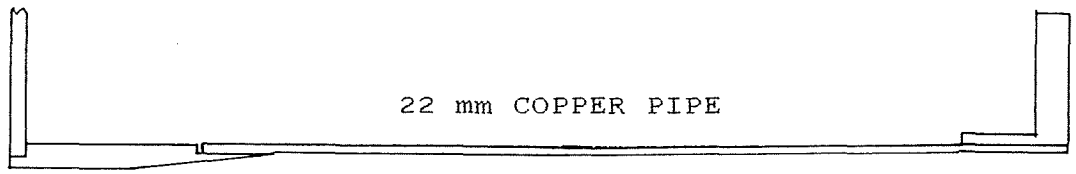
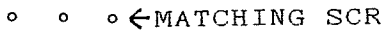


FIGURE 1





WAVEGUIDE 16
FLANGE

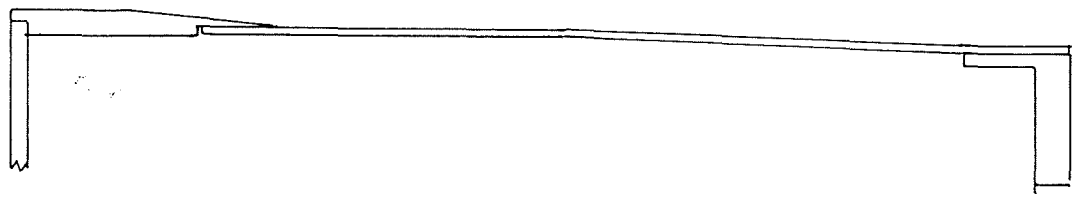
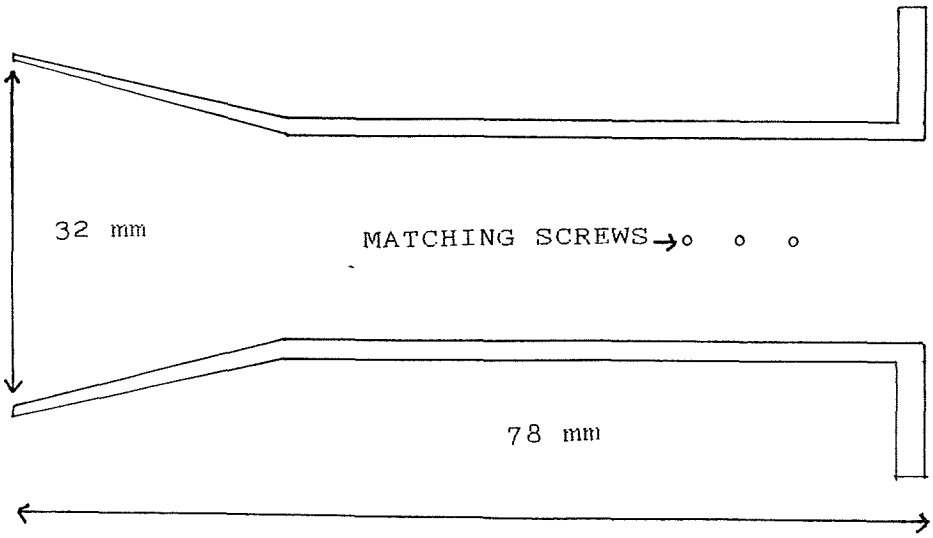


FIGURE 2



WAVEGUIDE 17
FLANGE

FIGURE 3

ACTIVITY NEWS -- NEWS AND VIEWS FROM THE WORLD ABOVE 1000MHz

Lots of news this month, with over a dozen contributors writing in!

First of all though we owe **RAY, G3NKL**, a big apology for omitting his Operating Ladder scores from the final table published last month. This was entirely your scribe's fault as the letter somehow found its way into the "out" tray before I had finished picking it for news. To make up, we publish a revised 24GHz Table (where the biggest change is made by including Ray's score). On 10GHz you can all amend the G3NKL/P score to read 8 stations worked and a multiplied score of 2720. His position remains unchanged.

STEVE, G4KNZ, sends in an entry for the new, 1993 Ladder. We have very few entries for this as yet but we expect a rapid improvement in the situation after the April Cumulative! We will therefore not publish any new ladders until next month at least. Steve reports recent improvements to his 10GHz home station. On transmit he now has a 20 watt TWT running and on receive he has installed a WDG004 HEMT preamplifier (a beta-test prototype) measured at 1.03dB NF. The HEMT is followed by a WDG005 amplifier to ensure there is sufficient gain to overcome the noise figure of the JVL transverter. Steve is located in Bracknell (SU874667 or IO91PJ) in what should be a good site, except to the South, but there are many local obstructions such as trees and houses. As a result he is anxious to try paths during rainscatter conditions and is generally available between 2100 to 2300. Please ring him for skeds (tel: 0344-484744).

Next is an interesting letter from **LEHANE, G8KMH**, who provided the information on JE1AAH's pcbs as detailed on page 2 of this issue. He is not sure that Toshi's 1.2GHz IF for the 24GHz modules if going to catch on over here in the UK as 432MHz would be a better bet.

Lehane has recently finished the WDG/WB5LUA lineup started over eighteen months ago and therefore hopes to be out and about in the contests this summer. His nearest site is the Hog's Back, only ten minutes away from his Farnham home. He is also keen to get going on 24GHz, having a quantity of WG20 parts and plans to try narrow band up there by doubling from a WDG001 on 12GHz. He mentions problems in obtaining silver-loaded solder and cannot get through to Blue Rose Electronics (have they gone out of business?). Your scribe has been using silver - loaded solder easily obtainable from most DIY stores. It is called *EASYWELD MULTIWELD* and comes in a syringe container. The price paid was around £3.99.

From **ANDY, G4JNT**, we get a 1993 ladder entry. the winter cumulatives have already supplied him with seven stations and a best dx of 236km on the 10GHz band. This is his best DX from home and was with G3LQR in East Anglia. Andy has also worked Petra, G4KGC on 10GHz, a pathlength of 160km. Andy has recently changed jobs and for a while wondered what he was now going to do for test gear! The panic is now over however. He has a 6GHz network analyser at work and will have to spend nearly all of this year's budget on a good spectrum analyser but can borrow one from another lab now!(lucky for some, hi!)

JOHN, G4BYV, sends us details of his tower mounted 10GHz system and we plan to work this into a short article in next month's issue. Many thanks John. He reports Simon, G3LQR, working HB9AMH/P on 6cm for a first G to HB on that band. We also hear, down the grapevine, that Simon is building for 10GHz EME. G3WDG has certainly started something!

PETER, G3PHO, is still plagued by back problems but plans to incorporate a 1 watt PA into the /P 10GHs system by the April contest.

24GHz Operating Ladder 1992 final placings

REVISED VERSION

BAND GHz	POS	CALLSIGN	BEST DX (km)	STATIONS WORKED	MULTIPLIED SCORE
24	1	G4KNZ/P	# 136	#..22	# 2292
	2	G3PHO/P	#..136	7	952
	3	G3NKL/P	102	7	714
	4	G3FYX/P	102	5	510
	5	G8AYY/P	86	5	430
	6	G3FNQ/P	59	6	354
	7	G8AGN/P	86	2	172
	8	G3ZME/P	90	1	90
	9	G3UYM/P	45	1	45
	10	GODJA/P	8	1	8

PAUL, G8AYY, did not take part in the January (Winter) cumulative but was hoping to be on for the February event. He sends his congratulations to Charlie and Petra for their outstanding success on 10GHz EME last month. Paul has the power and a dish but unfortunately it doesn't have the 48dBi gain!! Paul enclosed a newspaper cutting regarding the Ionica company and its use of the 3.4GHz band for a new telephone service. He asks if the RSGB Microwave Committee knew of this development. The simple answer is YES! Discussions have taken place at committee level. We suggest you contact the Committee chairman, G3PFR, if you require an update. On the construction side, Paul has rebuilt his 24GHz wideband transceiver with a G6XM block (see a recent newsletter) and is experimenting with a tuning screw made of Delrin (a polystyrene). The iris was made of thin aluminium sheet so as to maintain a uniformity with the rest of the Plessey GDHM32 module. A well-know brand of canned lager provided the material!(When you hear his 24GHz signal this year you'll say, "I bet he drinks C..... B.... L...."!!. The paint was removed with wire wool and the 5mm iris reamed out to avoid tearing the metal. Paul continues to voice serious misgivings about novices using TWTs on microwave bands..comments from other readers?

From **TED, G3JMY**, we hear of good 10GHz conditions on 2 January 1993 when six stations were heard from the home station (Bristol). Ted worked G4UVZ (Taunton), G3GNR (Dartmoor) and GW4LXO/P. He and 'UVZ have had 59 two-way contacts on 10GHz narrowband, 25 of them being in the first forty days of this year! The January Winter Cumulative netted seven stations, five being two-way and the best DX G4KGC at 158km. On the 2 Feb 93 the "water dummy load" was removed from the waveguide(!) and ted was rewarded with further good conditions on the 3rd Feb. He finally worked G3GNR on SSB, with S9+ reports. An attempt with F6DKW (near Paris) unfortunately failed as the duct was too far south. the Reigate beacon has been heard as well as G4UVZ's beacon. Ted's home station runs 800mW output to a 23 inch dish at 30 feet above ground level. He asks that readers add his telephone number to the Microwave Directory (0454 772384).

BILL, G6XM, kindly sends in a useful list of DX paths worked last year. he has not been /P this winter but has been improving his 10GHz gear. 250mW output is now available. He is getting parts together for the G3BNL 24GHz phase-lock system. He would very much like to get information on DROs.(Issues 5/86 and 9/86 of the Microwave Newsletter may be of interest Bill.....editor)

GEOFF, G3TQF, comments on recent Newsletter discussion regrading DX alerting. He thinks that the DX Cluster on packet radio, if it properly supported SHF and microwaves, would have a considerable part to play as it allows a rapid exchange of activity information across the whole of the UK and into Europe, without the restrictions of a telephone warning network. A wider use of packet by microwavers could possibly improve input of news to the Newsletter as Geoff thinks it easier to hit the keyboard rather than stick a stamp on a letter! He uses GB7LRG BBS.

In reply to this, your editor can only say that packet holds absolutely no interest for him. A short spell on RTTY convinced him that keyboard communication is very impersonal (even CW has more personality!). It also ties up expensive gear such as a computer (which has to be next to the radio and not in a separate room as at this QTH). Many microwavers do not possess computers or even TNCs and therefore would have some financial outlay they may not wish to afford. Almost all of us are on the telephone though and if those readers who are listening when there is a lift to the Continent could spare the minute or two to ring their nearest member of the Telephone DX Warning Net (see last year's newsletter) we might find a lot more UK stations getting into the "action"! As we have noted before, those of us who have to work at home during the evenings cannot find time to monitor the bands all of the time. Anyway, let's not get too serious...it's only a hobby!

BOB, G3GNR, worked F6DKW on 10GHz during February. He has taken down the PW dish with penny feed and replaced it with an Amstrad SDX 80cm offset type at 35 feet above ground. Conditions seem to have been very poor ever since! (Don't worry Bob, the Amstrad dish is much, much better than the old PW!). he hopes to acquire a TWT eventually and would be keen to hear from anyone who operates a TWT in a mast head system.

A long and newsy letter arrived from **JOHN, G0API,** who was very pleased to experience his first real 10GHz enhancement in the form of what he thinks was a stable duct between his IO80XS location and the GB3SEE beacon (IO91VG). On the 2nd of January this year he heard it between 2100 and midnight over the 146km path. The gear in use at the time was a PW 18 inch dish (with penny feed) into a 3dB NF satellite LNB feeding downconverted 10368.950MHz into an exhumed 1975 Short Wave Magazine 432/144 project downconverter!! GB3SEE was S9+40dB even though it was running only 5mW at the time due to a PA fault. John has also been hearing G4UVZ (TAUNTON) for the first time and hears the 'UVZ beacon on a daily basis over 85km, usually averaging S1-2. John took part in the first two winter cumulatives and took the WDG system to pieces after some level instability during the first contest. For the second contest he thought everything was working well, with 150mW at the dish **BUT** after fitting the transverter to the elevation platform on the mast he got no RX noise and only a minute amount of RF out! After taking it down and into the shack he found the gear worked perfectly, only to cease functioning again when put outside. A beer or so later he decided the local oscillator was dying in the cold weather outside and so strapped three 10 ohm/11 watt, wire-wound resistors to the module lid and crammed the housing full of foam rubber. With DC on the resistors he got 6 watts of heat (resistors in series) to keep the transceiver nice and warm in its external home. It was given a "soak test" on the front door step for three hours, where it was eventually covered with a three inch layer of snow! Next day it was up the mast for the second winter cumulative and worked perfectly....a contact with G3JVL was just about 100% on SSB. On the 29 Jan he worked G3JVL and G3KEU/P two way, with G4KGC for a one way.

73 de Pete G3PHO

VERON VHF COMMITTEE BEACON LIST version 18 10 1992

CALL	LOC	QRG (MHz)	Po(W) to ant	Ant Ga/Dir	Ant agl/asl	Mod type	Identification	QSL to:
PI7PRO(6)	JO22LN	144,840	5	3 dB/Omni	20/20	F1	(6)	PI4VRZ
PI7ZWL	JO32BM	144.870	1.5	5 dB/Omni	30/30	F1	Callsign and 5 sec. space	PA2SDL
PI7CIS	JO22DC	144.935	50	6 dB/E	8/18	F1	Callsign and QTH	PAoCIS
PI6SHF(1)	JO22MG	432.642	1	6 dB/S	150/150	F1	Callsign and QTH every 50	PAoPLY
PI6UHF(2)	JO21VX	432.675	1	Omni	30/50	F1	Callsign and QTH every 60 sec.	PA3FPQ
PI7QHN	JO22GH	432.905	1	3 dB/Omni	40/50	F1	Callsign and QTH every 100 sec.	PAoQHN
PI6ASD(3,5)	JO22KH	1296.636	1	Omni	30/30	F1	Callsign and QTH every 180 sec.	PAoAWP
PI7DIJ	JO33BC	1296.816	1	5.5 dB/Omni	15/15	F1	Callsign and QTH every 30 sec.	PAoDIJ
PI7QHN	JO22GI	1296.921	4	6 dB/Omni	50/50	F1	Callsign and QTH every 36 sec.	PAoQHN
PI7GHG	JO21GW	2320.857	4	20 dB/SE	49/49	F1	Callsign and QTH every 110 sec.	PE1GHG
PI7TGA	JO21WU	2320.885	1	10 dB/NW 10 dB/W	50/75	F1	Callsign and QTH every 75 sec.	PAoTGA
PI7QHN	JO22GI	2320.930	0.2	6 dB/Omni	20/20	F1	Callsign and QTH every 45 sec.	PAoQHN
PI7PLA	JO33IC	2320.936	2.5	6 dB/Omni	30/42	F1	Callsign and QTH every 30 sec.	PAoPLA
PI7SHF	JO22JH	3400.020	2	6 dB/Omni	100/90	F1	Callsign and QTH every 130 sec.	PAoEZ
PE1BLE(5)	JO22KH	10368.16	0.01	12 dB/Omni	30/30	F1	Callsign and QTH every 10 sec.	PE1BLE
PI7SHY	JO21SK	10360.039	0.05	21 dBi/NW(4)	45/56	F1	Callsign and QTH every 75 sec.	PAoSHY
PAoTGA	JO21WU	10368.098	0.05	16 dB/W(4)	50/75	A1	Callsign and QTH every 75 sec.	PAoTGA
PI7GHG	JO21GW	10368.278	0.25	16 dB/N(4)	50/50	F1	Callsign and QTH every 60 sec.	PE1GHG
PI7EHG	JO22JH	24192.01(7)	0.01	25 dB/S(4)	100/90	F1	Callsign	PAoEHG

notes
1: Transponder (2320.3 to 432.62 MHz) beacon
2. Transponder (1296.65/5760.35 to 432.65 MHz) beacon
3. Transponder (432.55 to 1296.65 MHz) beacon
4. Antenna direction changed upon request
5. Temporarily out of service
6. Not a beacon but condx warner. Only QRV for warning
7. Temporary frequency

Please send remarks to PAoEZ, Elkenlaan 11, 1213 SG HILVERSUM. tph. +31 35 241408