

## 432 AND ABOVE EME NEWS JUNE 2004 VOL 32 #6

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THE NL WEB VERSION IS PRODUCED BY W6/PA0ZN AND AVAILABLE AT <http://www.nitehawk.com/rasmit/em70cm.html>

**CONDITION:** The lack of an outstanding weekend where low path loss, high declination and low sky noise align continues to affect turnout. Most reports express concern about low activity rather than propagational conditions. I tried to stimulate some activity with a last minute dxpedition to VP9, but had multiple difficulties and completed no QSOs – see my report. There are several events that should help this month. The activity weekend (AW) on 12/13 June also corresponds to the ARRL's June VHF Contest. There should be stations from all over NA looking for extra grid multiplies on 70 and 23 cm EME. EME is a valid contest QSO. (The contest exchange is the 4 character grid locator and requested on EME by "GGGG..."). OH0/OH3MCK will be operating from OH0 Åland Islands on 1296 EME during the AW – see their report for details.



**K5JL was visited by a tornado – see his report**

**AE6EQ:** Bill [billbailey59@charter.net](mailto:billbailey59@charter.net) is a new 432 EME op. His QTH is 1680 Nipono Ave, Los Osos, Ca 93406. He has w an array of 16 x 14 HB yagis feed with 1.5" Heliac to a 3CPX800 PA with 800 out. Bill is a good friend of K6IBY.

**DL1YMK:** Michael [DL1YMK@aol.com](mailto:DL1YMK@aol.com) was on 1296 on 29 May -- After some time, I tried 23 cm again. Echoes were fine, but not much activity. I managed to work OZ6OL and K9BCT. This was my mere crop for more than 4 hours of continuously calling CQ. Sorry, but I was not able to figure out who called me around 2000. I think it was a G3? It would be interesting to know who it was.

**F6DRO:** Dom [Dominique.DEHAYS@enac.fr](mailto:Dominique.DEHAYS@enac.fr) in (JN03tj) reports that his 432 EME system is on standby -- I need to finish my new amplifier (GS35) and increase antennas number from 4 to 8 yagis, or even 16 if I can find 4 more yagis. I need to 21 el F9FT yagis. The EME system is working surprisingly well on trop even though it is only 3 m in height. I need to increase the height to get really serious. I plan to move the new 432 array to the top of a 12 m tower. I will then use the tripod on which the 432 array is now located for my 3 m dish for use for EME on 6 and 3 cm. I hope to be ready on at least 6 cm in time for the ARRL contest. The 6 cm transverter is ready, but I'm still looking for a way to feed my dish with CP using a Cassegrain feed. Does anyone have an idea?

**G3LTF:** Peter [g3ltf@btinternet.com](mailto:g3ltf@btinternet.com) writes -- Not a lot to report this month. Activity seemed rather low at the times I was on. On 24 April ran with SK7MW on 13 cm. We both heard each other, but Torleif had a bad VSWR on the antenna and we were not able to QSO. On 1 May I was on 23 cm and worked DK7LJ and HB9JAW on SSB and IK2MMB and G4DZU on CW, and I heard UR5LX. On 2 May I worked OH6NVQ on 13 cm. We had been trying to make this QSO for about 6 months and Tomas has been gradually improving his system. His signals are about the same level as my echoes. After this QSO I also worked G3LQR on 13 cm. I'm progressing on my 9 cm project, but have lots of interruptions from other hobbies at this time of year! On the subject of activity and activity weekends, I feel it might be better to choose weekends that have the most "sociable hours" rather than those closest to perigee. I know we could lose up to 2 dB, but this is of no consequence if there's no one on to work!

**I4ZAU:** Vico [i4zau@racine.ra.it](mailto:i4zau@racine.ra.it) who is active on 3 cm with a 7 m dish and 60 W reports – The IQ4DF radio club ran an interesting EME test on 10 GHz on 30 May between 1900 and 1915. They transmitted using "HELL WRITING". To see their signal one is required to use Spectran or another waterfall program. [I believe this scheme uses frequency shift to show call letters on water fall display – where is the software available?] They could clearly see their own echoes. ISPPE also reports copy with his 3 m dish.

**JA4BLC:** Yoshiro [ja4blc@web-sanin.co.jp](mailto:ja4blc@web-sanin.co.jp) reports -- This month I was happy to make 3 contacts on 13 cm. I QSO'd on 23 May G3LTF (O/O) and G3LQR (O/O) for initial #29, and on 29 May VE6TA (O/O) #30 for the 1st ever JA-VE contact on 13 cm.

**JH1KRC:** Mike [jh1krc@syd.odn.ne.jp](mailto:jh1krc@syd.odn.ne.jp) writes -- During May, I have made initial #30 on 1296. Since my shack is located 160 km north of Tokyo, it takes 2.5 hours to drive from my home. It appears that I need to send email to make skeds for possible QSOs on 1296, especially for NA. On 5 April, I called CQ for 3 hours during the NA window, but worked only one JA. I guess no 1296 ops were watching the band before their dawn. I had hoped for more NA stations to be on 1296 on a regular basis. (I wonder if any high power CDMA HPAs usable for this band are available in the US? [There is nothing that I know about for 23 cm. 13 cm is seeing some amps become available.] The availability of new devices could make the 23 cm band more brisk. Younger ops might not be comfortable using the high voltage required for tube PA - no tuning skills - hi.)



**Summer in JA land**

**K5JL:** Jay reports that he is QRT for a while. He was hit by a tornado while traveling on the East Coast and had to return early. His son said "it was like someone running a couple of vacuums - then all went still... Yes, it sounded like a freight train". Jay lost his tropo/HF tower, but his dish was still standing! He did lose his feed and support mounting.

**K7XQ:** Jeff [k7xq@elite.net](mailto:k7xq@elite.net) is QRV on 2, 70 and 23 cm EME with improved systems consisting of a single 9 WL yagi on 432 MHz and the power has been increased to 350 W on 1296 MHz with excellent echoes -- I lost my preamp on 432 EME during a recent sked with KJ7F. I just need to order more MGF-1302 devices and should be back on the air for this band by the time you read this. On 1296 I completed a CW QSO with G4CCH on random on my CQ. No-one else was heard on this band. The new K6KWQ amplifier that utilizes Mats new single GS-15B RF cavity runs great.

**OH0/OH3MCK:** Ari (OH3LWP) [ari.vaisanen@nokia.com](mailto:ari.vaisanen@nokia.com) announces -- A group of OH hams will be joining the Nordic VHF-UHF-SHF meeting <http://www.rats.fi/vushf2004/> to be held in OH0 Åland Islands on the weekend of 12-13 June, and will be ORV on 1296 (and 144) EME with the call sign OH0/OH3MCK during the weekend. We will be operating a field station, so local obstacles blocking moon window and weather can affect activity. On 23 cm we will run a skeds on JT44/65 as the station is marginal with 1.8 m dish and 200 W TX power. 23 cm sked requests are welcome via email to [ariv@removethis.ele.tut.fi](mailto:ariv@removethis.ele.tut.fi).

**ON5RR:** Marc [marc\\_kleyn@mastercard.com](mailto:marc_kleyn@mastercard.com) sends some lines for the NL -- On 6 March, Michel and I worked 5 stations on 2304 and 2320 including ZS6AXT for initial #8. Our RX and TX seems to be working (finally) as it should. The main problem was noise from the PA saturating the preamp. We corrected this problem by the additional of a coax relay. On 27 March my co-op ON7EH and I were back at the station. This time to try our 23 cm gear. We worked 16 stations including SK0UX for initial #106 and PA0SSB for initial #107. We were very happy to log this last QSO. When we were building the station nearly 10 years ago, Jan was one of the first people to invite us to have a look at his setup. We can now say that on 13 cm all is OK, but on 23 cm we still has a problem with spurs. Pulses appear every 2 minutes and deafens our receiver. We do not experience this problem on 13 cm! We are working on some bandpass filters and will check these out during the next activity weekend. We are convinced that something else is wrong. Our reports are much less than expected. We are concerned that our TX lines maybe more lossy than we believe. Our general feeling is that the new location is much quieter with less industrial noise than our old one. The mechanical improvements of the AZ/EL gears seem to be working, and we are now able to make QSOs during winds of

more than 50 km/h! We'll be active in on the 12/13 June weekend and are especially interested in skeds for 13 cm.



**ON5RR's new QTH**

**OZ4MM:** Stig [vestergaard@os.dk](mailto:vestergaard@os.dk) reports good activity on 2304 in May. Stations worked were SK0UX for initial #45, SM3AKW, W5LUA and WA6PY. G3LTF was heard. All copied with good signals. Stig is open for skeds on 432, 1296 and 2300. He reports that as usual he is quite busy around the house at this time, but has planned some changes/upgrades in the dish during the summer.

**SM3AKW:** Carl is in recovery from a hip replacement operation. Please send your wishes for a speedy return to full operation.

**VA7MM:** Mark [lunarlink@hotmail.com](mailto:lunarlink@hotmail.com) notes that VA7MM is technically not a club station, rather a partnership -- I refer you to our recently implemented web site <http://www3.telus.net/public/va7mm/eme/> that provides some background and history of our the station. We are currently upgrading our preamp and intend to be on the air in the ARRL June VHF Contest on 12/13 June.

**VE6TA:** Grant [ve6ta@telusplanet.net](mailto:ve6ta@telusplanet.net) is having fun on 13 cm -- I installed the new 13 cm septum feed in the dish and arranged skeds with WA6PY and SK0UX. Before my sked with WA6PY I listened to SK0UX and WA6PY complete a contact, both stations had very good signals. Then I managed to find SK0UX calling with strong signals and worked Hans and crew on random. They had a very distinctive chirp, but were also very strong peaking 539. I went on to work WA6PY easily on our sked. Paul can hear a pin drop and appeared to have little problem with my puny 90 W. G3LTF also sent a SWL report. Later I got my receive converter working properly on 2330 and 2424 and worked JA4BLC (X-band) and SM3AKW to bring me up to initial #9. I did some tests between the Septum and VE4MA feeds and found only about 1/4 dB difference in sun noise, but feel the circularity is better on Septum as I have no technical means to adjust the VE4MA properly. The MA feed has slightly better sun noise.

**VK4AFL:** Trevor [bentont@acenet.net.au](mailto:bentont@acenet.net.au) writes -- Activity on 432 has been a bit quiet. The May weekend was the slowest I have ever experienced. After a couple of hours worth of CQs and more hours in the receive mode all that I heard/worked over the 2 days was one station only, 7M2PDT with a good signal. I did sked DL8YHR two weeks later for a new initial and his first VK QSO. I'm looking forward to EME 2004 which is now only a matter of a few weeks away.

**WA6PY:** Paul [pchominski@Jaalaa.com](mailto:pchominski@Jaalaa.com) has replaced an 8' dish with 12' dish -- I tested my new dish on 1296. QSO'd OE9XXI and G4CCH. The echoes are definitely louder. Now I am working on mounting an 13 cm feed and hope to test performance on 13 cm by the end of May and in June.

**ZS6AXT:** Ivo [zs6axt@global.co.za](mailto:zs6axt@global.co.za) asked me to reprint his comments on JT44/65 as he felt I edited them too much and misrepresented his feelings -- I am from the "old school", hi, and prefer to make any QSO by the use of my

hands, mouth and ears. If somebody uses for this his computer, this is his problem and I am not going to stop him. I just do not like to be compared with him. Let say - I never heard about a race where are runners competing with guys on motorbikes. Did you? Or take a mountain climber who reached so and so summit to be compared with a guy who got there in a chopper. HI Etc., etc. Let's be fair, otherwise EME initials will lose the present value. We must preserve the historical values and guard them. Too much was lost in ham radio already. BTW - I respect yours and others views too, as long as these are not lowering the above values. Otherwise we can just go and do contacts over Internet. Where is the EME pride? Can we still save it?

**K2UYH:** I logged little EME activity from my home due to an unusual amount of travel the past month. I realized one of my destinations, Bermuda (VP9), had not been active on EME on either 70 or 23 cm. It seemed that I might be able to combine my other activities with some ham radio. N4HY put me in touch with VP9MU. Paul is an OSCAR control station operator and professes little interest in making QSOs, but was pleased to provide his QTH and call for EME operation. This was little more than 2 weeks before my trip and did not allow for proper publicity and little time for preparation. My first idea was to put together a small portable station for 1296 that could be carried with me. Paul had an IC910H with a 23 cm module. I needed to bring an antenna, PA and preamps. N4HY offered a solid state 80 W PA and I built up a small offset stress dish and polar mount. This antenna is equivalent to a normal dish of about 8' dia, but can be disassembled along with the mount and carried in a package 7.5' long by a few inches in dia. For a feed, I used a dual dipole with a quadrature hybrid for circular polarization. This arrangement produced a small sized circular feed, but the feed still was the largest volume piece of the antenna. As a back up, I ordered a 15' loop yagi. The dish appeared to work as planned and yielded > 8 dB of sun noise, > 3 dB greater than the loop yagi. Unfortunately during testing, it was discovered that the PA was not working. This was the first of a string of setbacks. N2UO found that 2 modules were blown, but there was no time to order replacements. (I had one spare). Thus the day before departure, I decided to switch to 70 cm. I had a 33' M<sup>2</sup> yagi for 70 cm and the IC710H produced 70 W. I felt with this arrangement QSOs could be made with some of the bigger stations on CW and more on JT44/65. I took with me the yagi, 2 preamps, relays/control cables, a laptop computer with Spectran and JT44, and a counter as Paul was not sure of his frequency. Amazingly we got through customs without a problem. Paul had warned me to have everything documented because Bermudian customs are very tough. I had two afternoons (29/30 May) reserved for EME. I should have set aside more, but we only had 3 full days on the island. Marty, WB2SZW was traveling with me and helped set up the station. We met with Paul on Friday evening and Paul to the antenna and box of equipment to his QTH, which was about 15 minutes from our hotel by car. Marty and I arrived at Paul's QTH by motor scooter the next day. When we opened the equipment box, we discovered the preamps had been damaged. One was in 2 pieces and the other dented along with one of the relays. I spent the next several hours trying to repair the preamps, but could not make either function. I do not know why. By combining the pieces of the 2 preamps, I had one that looked like it should work, but I could get no noise from it. While I was working on the preamps, Marty assembled the yagi and started setting up the station. We discovered our next problem, the IC910H had no audio. Marty started to trouble shoot it, but we did not have the tools needed to disassemble it. Fortunately Paul had a second transceiver that worked on 432. It did not have the TX power of the 910, so we had to use it for RX and the 910 on TX. At this point it was time for our first sked with DL9KR. We used Paul's 432 yagi, which is only about 8' long and circular polarized. As should have been expected, we had nil results. Jan called on the telephone and we tried to explain the situation. We arranged to try again with him after we had mounted our long yagi. Here is where we discovered the next problem. Because of the location of Paul's tower in relation to the roof of his house, we could not tilt the long yagi without it hitting the roof. The solution was to move the yagi way off center, so that only a few feet of the yagi was behind the mounting point. Paul did not have the materials to do this properly, and we were unable to keep the yagi aligned on the moon. At this point we had run out of time and decided to give up for the day and return to the XYLs. The next day we returned early. Using a broom and some hookup wire, we were able to mount the yagi so that it remained straight and could be pointed at the moon. I felt our best chance for a QSO was with DL9KR and ran with Jan at moonrise and for more than an hour afterwards. At one point I thought we were copying Jan, but it turned out to be a weak birdie that was sending M's! Nil was copied at either end. Testing with DL9KR ran over into PA3CSG's sked slot, and we only listen for Geert on JT65 for a few minutes. This may have been a mistake, as afterwards we tried the JT44 echo mode and were definitely able to detect echoes at Q=10. Jan telephoned and felt that the problem was polarization. He convinced me to try vertical polarization. This was a problem because of the way the antenna was braced our use of hookup wire – nothing else was available. We give it a try, but again heard nothing from Jan. At this point, we were very discourage and decided to close down. We needed some time to pack everything up and preferred to do this when it was still light. My thanks to Paul, for lending us his

house and call and putting for us for two days, and to Mart for his help – this was his first experience with EME. I can promise having built up the portable offset dish and acquiring a long yagi for 70 cm, that this will not be our last EME expedition.



**VP9MU's antennas with yagi used for 70 cm EME**



**7.5' offset stress dish for portable operation**

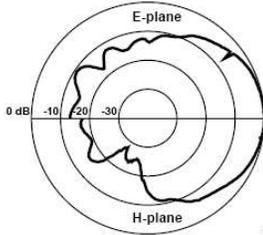
**WEINHEIM VHF CONVENTION** is the weekend of 11/12 Sept in Weinheim and Bensheim. The traditional event with lectures, trade fair and flea market will be held in the Karl Kuebel Schule in Bensheim on Saturday. Sunday plans include discussions with speakers and a mini flea market at the "Wasserhaus" (the clubhouse of A20, the Weinheim branch of DARC, DL0WH).

**TECHNICAL:** OM6AA has been experimenting with Septum Feed designs on 1296 and plans to use a modify Septum Feed with a new bigger dish. Rasto has improved feed efficiency by adding multi-collar rings. To evaluate feed efficiency with a dish, he is using W1GHZ's FEEDPATT software. Rasto has been evaluating his work using the anechoic chamber at Czech Technical University in Prague and reports the results are very promising. He is working

on a detailed article for DUBUS magazine, but sends a preview in the following figures.

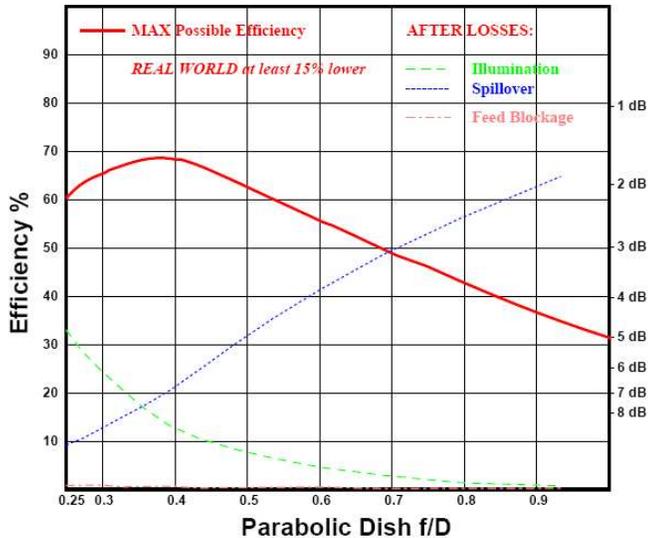


OM6AA's improved Septum feed



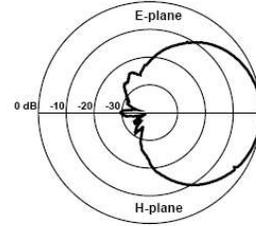
N1BWT 1997

Dish diameter =  $16.4 \lambda$   
Feed diameter =  $0.7 \lambda$



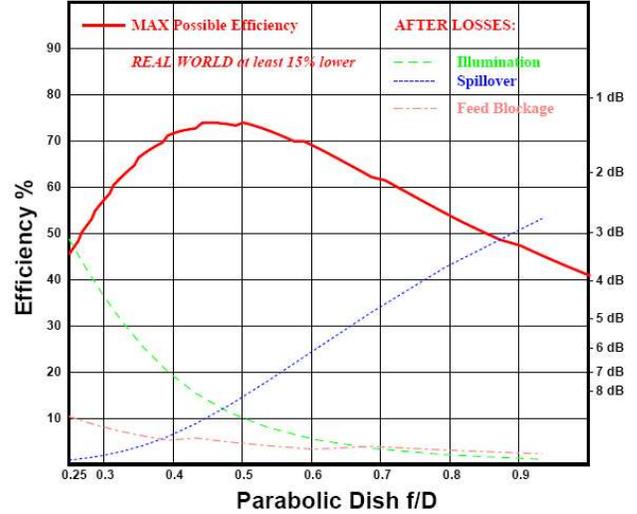
OM6AA's Septum feed with no choke

**JT65 NEWS:** K1JT has released a new version of JT65 with improved signal tracking and several additional improvements, but most importantly it runs Spectran simultaneously with JT65. (Joe worked together with I2PHD to produce versions of Spectran and WSJT that work cooperatively. This feature is not available with JT44). Joe recommends for operation on 23 cm JT65C, not JT65B. The parameter W is the measured width of the sync tone in Hz. If this number is larger than about 5 Hz, the sensitivity of JT65B will be degraded. In 23 cm examples he has been sent none were < 5 Hz, and most were in the range 6-10 Hz. That indicates that JT65C should be used. Since the examples were using an older version of WSJT without the improved AFC feature, there is a small chance that the newest version would lock onto the signal better. But, JT65C is only 1 dB below JT65B in sensitivity.



N1BWT 1997

Dish diameter =  $16.4 \lambda$   
Feed diameter =  $2 \lambda$



OM6AA's Septum feed with choke flush

**ARRL EME CONTEST RECORDS:** Jan [ok1vao@@quick.cz](mailto:ok1vao@@quick.cz) reports that Tonda from the OK1KIR group has updated their ARRL EME Contest Records Table – see end of this NL. They congratulate K5GW team in multi-multi op and OE9ERC in the 13 cm single op categories for new records. They note it is pity that JW/SM2BYU didn't send his log to contest, because it would have been a new record in 432 non-amateur equipment category.

Band	ARRL International EME Competition Contests Records.								
	Single operator		Multi operator		Non-Amateur Equipment				
	score	call	year	score	call	year	score	call	year
Multiband	3,263,500	OE5JFL	1993	3,684,400	K5GW	2003	6,496,000	VE3ONT	1993
50 MHz	8,000	K6QXY-K6MYC	1993						
144 MHz	1,920,000	SM5FRH	1999	1,563,500	KB8RQ	1999	1,554,800	VE3ONT	1994
222 MHz	5,600	K9HMB	1982-1	3,000	WB0TEM	1982-1			
432 MHz	827,200	SM4IVE	1993	632,100	OH2PO	1997	307,100	OK1CA	1994
902 MHz	100	KD5RO	1988						
1296 MHz	343,000	K5JL	2000	255,600	K2DH	1997	24,700	KL7RA	1985
2304 MHz	19,500	OE9ERC	2003	6,400	OK1KIR	1991	9,000	SK6WM	1988
3456 MHz									
5760 MHz	200	OE9XTW-I6PNN	1995	600	OK1KIR	1999			
10.368 MHz	15,400	DJ7FJ	1994	19,800	F6KSX	2001			
24.192 MHz									
From period	1978 - 2003								

**2004 EME CONFERENCE** preparations are on schedule. We have the program, facilities, equipment and location to make this one of the best conferences ever! Even the dollar is low relative to the Euro, making coming to the conference a great buy. All we need is you! Please get your reservations in as it is becoming CRITICAL with the conference only 2 months away. There is still time to get a paper into the conference digest (e-mail it to N2UO) and/or get a spot on the program. We will be providing space for everyone who attends to post pictures and information on their stations. Plenty of time has been set aside for socializing during these poster sessions. We also will have a great surplus session, with a number of dealers exhibiting – tables are free (although we are encouraging door prize donations). Marc and I are looking forward to seeing everyone at the conference.

**FINAL:** I am sorry, but with all my travel and other responsibilities I nearly missed getting the NL out. This NL does not include G4RGK's Netnotes as I did not receive them before I had to leave on another trip... and I may of missed other material... I felt *something was better than nothing*. Things should be getting back to normal after the June AW. I plan to be QRV during the 12/13 June AW and plan to check out my portable stations on 70 and 23 cm. I hope to be working you off the moon. 73, AI – K2UYH