

432 AND ABOVE EME NEWS

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

CONDITIONS: Activity in Jan seemed to have been again spread out around the official activity weekend (AW) on 10/11 Jan with a peak on the AW. Based on the reports, those who missed the AW also missed some excellent conditions. The annual SSB contest will take place on 1296 the first day of the Feb AW and hopefully will boost activity on this band. Also scheduled in Feb is DL00CH's 1296 EME Dxpediton to ZB2 and EA9 – see Bodo's report. Coming up in March is a 70 cm EME Dxpediton to Rodrigues Island, EB9C discussed below and the first leg of the European World Wide EME Contest. It looks like we all should have an exciting time the next few months.

EME SSB CONTEST RULES: This contest is intended to be fun event. Bigger stations should help smaller stations get in on the activity. You don't need to transmit on SSB to participate. CW to SSB are encouraged. The contest starts on 7 Feb at 0000 and continues 24 hours to 8 Feb at 0000. The intention is to give everyone one common moon pass. Operation is on 23 cm only. Scoring is the contact points times number of Grid Sectors (IO, JM, FN, EM ...) worked. SSB to SSB contacts count as 2 points. SSB to CW (or CW to SSB) count as 1 point. The exchange is your Sector. Only the 2 sector letters need to be sent. Operation may be by single or multiple operators from one location. No distinction for scoring will be made. Logs should be sent to the "432 and Up EME NL" by email to a.katz@ieeee.org ASAP. The top scoring station will receive an attractively framed certificate to be presented at EME2004.

W6PO A SILENT KEY: I am very sad to report the passing of another "EME Great", W6PO. Bob had an enormous list of accomplishments including membership of the group that made that made the First Amateur Radio Moon Bounce Contact. He was editor of "The moon bounce notes" published by Eimac, the main source of EME information in the 70's and still referenced today. He also was the author of numerous QRO VHF amplifier articles and a leading EMEer on 144 and 220 MHz.

3B9C DXPEDITION NEWS: The dxpediton to Rodrigues Island www.fsdxa.com/3b9c scheduled from 20 March to 13 April will include 70 cm EME operation. See G0MRF's report later in this NL.

A71AW: Hamad a71aw@hotmail.com is QRV on 70 cm EME with 3 m, 0.38 f/d TVRO dish with a 100 W brick PA at the end of 100' of LDF-40 1/2" Heliac. He primarily uses the dish for AO40 operation and has a tri-band dual circular polarized patch feed. In Dec he QSO'd HB9Q. Hamad is also interested in trying 1296 EME. On 1296 he plans to use MKU-13100 100 W MOSFET PA and MKU-131AH 0.4 dB NF HEMT preamp. He is also considering constructing a Septum feed for this band. He is also willing to try JT44/65. [I suggested he try mounting a 432 long yagi on top of his dish to get around his circular polarization feed problem. He could then still use his mount for moon tracking. He also should move his brick and a good preamp out to the back of the dish where it can be connected to the yagi with a minimum length of feedline].

DL3OCH: Bodo DL3OCH@t-online.de dxpediton plans are on track -- I will QRV from ZB2 and EA9 between 7 to 22 Feb on 1296. Dxpediton details and last minute sked information can be found on my webpage at www.qsl.net/dl3och/zb2.htm. Skeds from Ceuta (IM75) are presently from 8 Feb at 2200 to 9 Feb at 0630. Skeds from Gibraltar (IM76) are on 13 Feb from 0300 to 0830. Operation will be on 1296.044 and use JT44 because it is very safe and I have had good experience with this mode. There is max 100 W allowed so JT44/65 is really the only possibility for EME with most stations. I am sure that I will make some tests with JT65, especially with the B mode. I have run tests on JT65 with DJ9YW. We wanted to compare JT44, JT65B and JT65C. We already previously tried JT65A and I found that the spacing is too small for effective use on 1296. We tested on JT44 first. The weather was very bad. We had some very big clouds in front of the moon and it also was a little

rainy. The conditions seemed bad. The JT44 worked as usual. Signals were about -26 dB and the synch level up to 2. We needed about 6 periods to get complete calls. We then used JT65B. The peak level was much weaker, just up to 28 dB. Once I did see both callsigns correctly, but they disappeared in the next period. Heinrich was also able to decode my signals, but his peak level was weaker than JT44. We then tried JT65C. It seemed to work fine. We needed about 8 minutes to get complete callsigns. The signal seemed a little stronger than before, but the weather was also better and I could see the moon. The JT44 and the JT65 B and C modes all seem to work. If I have to choose, I would pick the JT65B mode for stronger signals. It seems to work excellently, if the signals are on stronger side. But if signals are marginal as yesterday, JT44 is probably the best choice. Even if there is a lot of garbage, after about ten minutes complete calls appear on the average line. Another advantage of JT44 is that you do not have to wait 2 minutes to see the next line. Every minute brings some improvements. However, JT65's shorthand messages work great and you do not have to wait at all.



A71AW's 3 m dish used to work HB9Q with 100 W

DL4KG: Gerald znoyek@t-online.de has bad news – I am temporarily QRT on 70 cm EME. During a very bad windstorm my tower was damaged and the open wire feeder system to my yagis broken. Fortunately the antennas survived. I was able to repair the tower, but temperatures and snow did not allow me to repair the feeder system. I will send notice when I am QRV again.

G0MRF: David G0MRF@aol.com reports that 432 EME operation during the 3B9C dxpediton to Rodrigues Island www.fsdxa.com/3b9c is definitely go – We have shipped 4 x 19 el Tonna yagis, 3 ATF54143 pre-amps (one measured at 0.48 dB NF) and a 100 W solid state amp. Linear Amp-UK has agreed to provide a GS31B based PA capable of 700 W. Unfortunately we'll have to take this with us on the plane; we'll manage somehow. So that's good news and we should be able to work a few more stations now. I'm a little worried about my lack of EME experience. I will be visiting some of the local EME stations and try and get some experience. I also have JT65 running and am trying to find a local station to test that with. I will not have automated computer tracking, so I'll be using a web cam and hoping for clear skies.

G3LTF: Peter 100633.1656@compuserve.com reports on his activity in Jan -- Conditions were good on all 3 bands that I used, but the WX was against us. I had some very strong winds, which severely limited my operating time. On

1296, on 31 Dec I worked G3IRQ (M/O) for initial #203. Peter is using a 2.9 m dish and 160 W. Despite the M report he was good copy at times. On 9 Jan I QSO'd G4CCH (54/54) on SSB, GW3XYW (54/44) on SSB, IK2MMB, DL4MUP and heard UR5LX with good copy. On 11 Jan I worked VE7BBG #204. It was really good to hear that call again on 23 cm. Cor was followed by VE6TA. On 432 on 9 Jan I worked YO4FRJ for initial #378 with an excellent signal, and on the 10 Jan OK2BDO. On 13 cm (2320) I ran a sked with OH6NVQ, but he had a TX problem. My echoes were great at this time! I've made a lot of progress with the 3.4 GHz system over Christmas and hope to do some moon noise tests soon.

G4CCH: Howard howard@g4cch.com was only active on 1296 in Jan for a short while, but found that activity was low and heard no one at all from the US. He worked G3LTF (54/54) on SSB, UR5LX (539/539), DL4MUP (559/549), IK2MMB (559/569). Also heard was GW3XYW in QSO with G3LTF.

GW3XYW: Stuart gw3xyw@thersgb.net asks about random operation on JT44 -- I have not had any success with JT44 random operation on 1296. Possibly I have been on the wrong freq and on at the wrong time. I called and listened on 1296.044. When calling CQ, I always TX'd the first period and listened on the freq of echoes for my own QRA. When monitoring for a signals, I have also listened on 1296.044 corrected for my local echo offset. Are there any recommendations yet on a separate frequency for JT65 random operation on 1296? [Thus far, I have made only one random QSO on 1296 with JT44. This QSO was on 1296.030, and by accident as I was expecting another sked station that never appeared. I have not heard any random activity on 1296.044. I have heard some on 432.044. But, I must admit I have not done a lot of listening. Where to set your RX offset for random operation on 1296 is a real problem. The difference from your local echo offset can approach 3 kHz. I guess the best compromise is to choose an area you expect to hear signals from, select a grid from this area, use it to calculate the mutual offset, and listen there. The mutual Doppler offset frequency calculated by JT44 is quite accurate. You can also use JT44's big waterfall spectral display to look for someone calling way off frequency. Some people use a second computer with a spectral display program as Spectran running all the time. You cannot run both JT44 and Spectran at the same time. Regarding JT65, I think it is too early to set up a separate calling frequency. If the new JT65B or C modes turn out to be effective, just about everyone will switch to this mode, and there will be no need another calling frequency. I have not had a chance to evaluate the B or C modes yet. For weak signals, the A mode is not a good choice on 1296.



G3IRQ is new on 1296 EME - Jan NL

HB9Q: Dan's (HB9CRQ) hb9crq@hb9q.ch activity-update -- We concentrated on 432 in Jan working a total of 18 stations, 4 initials and 2 new QRP stations. Conditions were variable but quite okay. We also worked our first JT44 QSO with N9AB. He called us on random and was using only 20 W. We could hear his signal on the speaker! The stations worked were SK0CC, OK2BDQ, PA5DD, EA3DXU, KL6M, I1PIK (4x31 and 120 W for his first ever EME QSO) on random for initial #232, VK4AFL, PA0BAT, VK3BRZ (4x15 with 120 W for his first ever EME QSO) on sked #233, DL5LF, YO4FRJ, JJ1NNJ, N9AB (JT44), DG1KJG, KL9A #234, DJ3FI, KL7FH #235 and OZ4MM. In Feb we will be QRV on the 6th from approx 2000 to 0000 depending on

activity. On 7 Feb we will be active from approx 1815 to around 0800 (8th) on 1296.016 (or higher up to 1296.040) depending on activity. We may be QRT between 0000 and 0500. We will be participating at the 1296 SSB EME Contest and therefore will not be active on 432 during this moon-window. On 8 Feb we will again be QRV on 432.020 from about 1930 to 0000 (depending on activity). On 432 we will be calling CQ on CW and can be QRV on JT65B on request. We will be focusing on 432 CW QRP stations. Skeds are welcome. We prefer random, however we accept skeds with QRP stations. We should be able to QSO stations running 4 yagis and 50 W, 2 yagis and 100 W or 1 yagi and 200 W. Please let us know, if you would like to work us. We are happy to keep you posted about our exact activity times and frequencies. If you would like to get a last minute update of our activity or a sked, send us an e-mail before 6 Feb.

JA6CZD: Shichiro ja6czd@try-net.or.jp notes the following correction to his report last month. The high rise building to east of his house blocks the moon at elevations less than 25-30 degs, not 80 degs as stated in the last NL. Thus he has little chance of EME QSOs with much of NA. [Tnx JA4BLC for this correction].

JG2BRI: Misa bri@cac-net.ne.jp in (PM841w) is ready to try 70 cm EME. He has an array of 16 17 el yagis and 50 W of power. He is interested in skeds on CW, but may try JT44/65 in the future.

JW/SM2BYA: Gudmund, SM2BYA, <sm2bya@telia.com> sends the following summary of his dxpeditions -- It's now over 3 months since the JW/SM2BYA operation. Christmas has come and gone and we have finally been able to catch up on almost everything that had to be put on the back burner while preparing for the expedition. FYI I'll try to summarise here what went as planned and what didn't, and what is going to happen next: 1) The 32-m antenna did not perform quite as we had hoped. Matching it was no problem. We got the reflected power down to about -17 dB by the addition of a simple open stub - not brilliant but useable. But the optics was another matter... Before we installed our 432 MHz system, we first ran a tracking test using the 500 MHz radar receiver. With a system noise temperature of 65 Kelvin and a nominal antenna gain of 42.7 dBi, we could pick up some 5.5 dB of moon noise. That stayed put hour after hour as the antenna tracked the moon - excellent proof that the tracking software performed! At 432 MHz the noise temperature of the receiver itself was about 33 K and the sky another 35 K, for a total of less than 70 K. But - we got only 6.5 dB excess noise on Cyg-A and just over 1.1 dB moon noise! Assuming a theoretical gain of 40.9 dBi for the 32-meter aperture, this corresponds to a system temperature of 177 Kelvin or 2.1 dB NF. There was nothing we could do about it then and there - we just had to accept that our receiving system was compromised by at least 1.5 dB relative to what we had expected. Trying to analyse the problem afterwards, the best explanation we have been able to come up with is that the feed performance must start to deteriorate dramatically once one goes below 470 MHz. I eventually managed to locate the logs from the antenna acceptance test back in 1996 and the data there confirmed that the antenna noise temperature goes from 7-8 K at 500 MHz to over 30 K at 470 MHz, the lowest rated operating frequency. That trend probably gets progressively stronger as one goes even lower. As a result the aperture efficiency at 432 would suffer due to excessive spillover and the ground noise pickup increase at the same time. Thus we probably had about 3 dB worse sensitivity on RX than we had hoped for (bringing us into the same ballpark as HB9Q and OH2PO), and maybe 1.5 dB less gain on TX. I'm afraid that we may have missed a number of 2-yagi, 50-watt class stations because of this. The smallest stations we worked were in the (2 yagi, 100 watt) or (1 very long yagi, 100 watt) class - which figures! A sad consequence of the loss of sensitivity was that we worked a call that after a long struggle was copied as JJ3JPF. We have now received a QSL from JJ3JHP for a contact at that exact time and so are forced to conclude that this is a NC. We are awfully sorry, Hiro-san. 2) Once we had determined that we were going to be sensitivity limited, we decided to back off on the TX power so as not to present an unbalanced link budget -- no point in yelling louder than we had ears to hear... Settled for running the K2RIW PA in borderline class C (we only had 15 watts of drive, marginal for full class-C), which produced 350 very stable watts of output. The consequence was that our signals were not as strong as people had been expecting (but they wouldn't have been more than 2 dB stronger in any case). On the other hand we managed to work everybody whom we heard calling us (with one or two exceptions). When throttled down like this, the PA ran very cool and there was no thermal tuning drift whatsoever. We actually did not re-tune at all for whole 60 hours, and when shutting down the output power was still 350 W. 3) The tracking ran so smoothly that after a while we totally forgot about the antenna. The antenna controller is a stand-alone VME/Motorola 68040 unit running a large Pascal program under OS-9. It has a basic celestial tracking library built in, but moon tracking is not included. As a workaround, Assar -LTA installed an open source ephemeris software (from NASA) on our main Sun/Solaris server. This produced updated values for RA and DE every 6 seconds. The main real-time control program then poked the updated values into the parameter fields of a

"track-celestial" command and sent that down the LAN to the antenna controller. The procedure essentially amounted to starting a new tracking every six seconds, but worked like a charm. 4) At last (probably final) count the number of completed initials stands at 124. Unfortunately a couple of NCs - never got the RRRs from DJ5BV and messed up the one with JJ3JHP. Many European stations were worked on their rising or setting moon; a number of these were callsigns unfamiliar to me and most probably tropo stations. We snagged SK4BX in this manner at Sunday moonset - the moon must have been halfway below their horizon as we completed! 5) To date we have received and replied to about 40 QSLs. Keep those cards coming - as soon as we have yours, our card will be in the mail within the next couple of days! Please send QSLs to SM2BYA. BTW, our locator was JQ88ad. 6) If everything goes according to plan there will be a talk (with stills and video) at the EME 2004 Conference in Trenton - CU there! If there is enough interest we may start planning for a repeat in a couple years' time.

KL6M: Mike kl6m@ar1.net had a good month on 70 cm in Jan -- I christened my newly built GS35B amplifier and power supply and made the following QSOs using it: S53J (O/O) for initial #131, DJ3FI (549/449), OZ4MM (559/559), DF6NA (O/O) #132, HB9Q (579/549), EA3DXU (549/559), OH2DG (439/559), PAØBAT (O/O) #133, SM2ILF (O/O) #134 and YO4FRJ (549/439) #135. Conditions during the AW on 10/11 Jan seemed to be only average. This may partly be due to strong auroral activity along with less than optimum moon distance. Pictures and facts about the new GS35B PA performance can be found at my website <www.qsl.net/kl6m> under the "New" links menu selection - comments are very welcome. During the ARRL contest I worked 44x23, but my "heard but not worked" list was very frustratingly long. The old K2RIW amp was getting very soft. I am confident that the new GS35B amplifier will remedy this in the next contest. My receive system is working exceedingly well. I have a new 222 MHz 2 x 4CX250 amplifier thanks to WA4NJP and PAØC. I hope to get it fired up and work my first 222 EME this month. 1296 will be next. I have a 2 x 2C39 amplifier close to completion, which is the last remaining task before being QRV 23 cm. I plan to set up numerous 70 cm skeds for the next AI. If anyone wants a sked, please send me an email.

KM5A: Steve smw@rapidnet.com sends an update on his status of 70 cm station -- Since my last report, I've rebuilt the frame that sets the spacing for my 4 yagis. I did not calculate the optimum spacing correctly the first time. I've made several computations showing how having the yagis too close degrades the gain. I had a lot of aperture overlap before. I can tell that the RX system is working better now. I've also built a keyer that sends a one second burst, then immediately listens for 3 seconds, and repeats this pattern until it is turned off. This arrangement facilitates checking for echoes. Stations wanting skeds can contact me by e-mail.

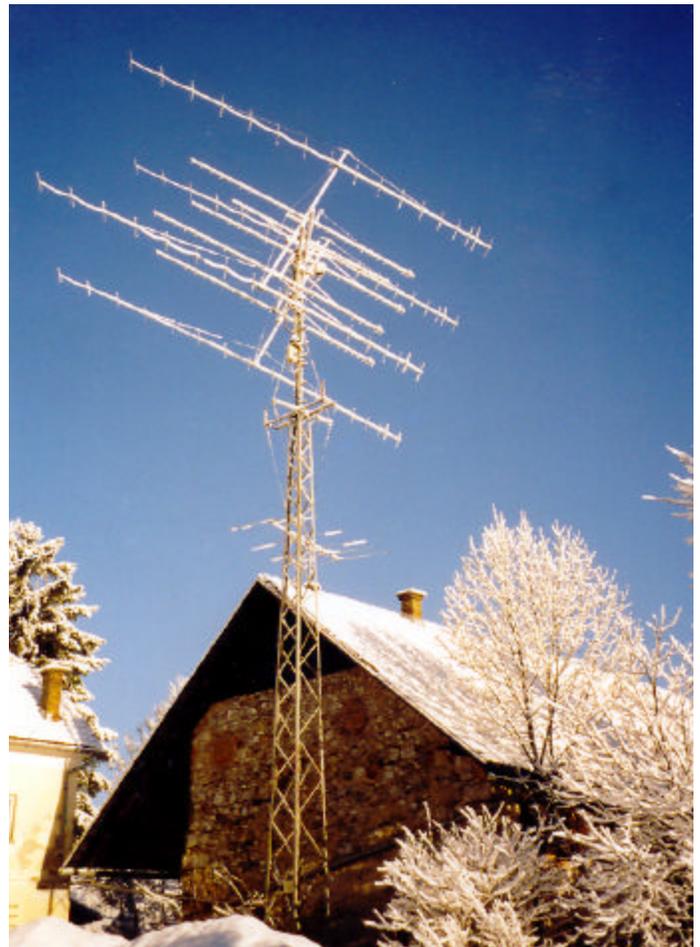
KO1OFF: Robert (SP8RHP) sp8rhp@onet.pl is setting up for EME on 432 and 1296 from Springfield, MA in KO10 -- I will be QRV on EME in April from KO10FF on 432 with 4 x 33el DJ9BV yagis and 750 W output. On 1296 I have a 1.4 m dish with 90 W output. I have MRF1802 preamps for both bands. The dish size may be a little small for CW on 1296, but I want to try JT44/65 and am looking for a laptop with a speed of 166 MHz or more for this purpose. [Robert also has stations in SP and PA/SP8RHP in JO22ia].

LU7DZ: Eduardo lu7dz@yahoo.com.ar in FF78ra is now QRV on 432 EME with an array of 4 x 22 el K1FO yagis and 1.5 kW at the antenna. He is receiving 2 S units of sun noise. Eduardo lives near Cordoba, Argentina. Steve, N4PZ as reported in the last NL is visiting and has been helping with the station. He has to have about 12 degs of elevation to clear the mountains at moonrise.

OH2PO: Jukka, OH6DD jukka.sirvio@vesatel.fi normally provides information. 70 cm tests with JT65 and JT65B by OH2PO were hit by Murphy. The dish decided not to turn under PC control due to low (-25 C) temperatures. The sky was clear and aiming was tried by visual means. OH2PO went out every 5 minutes and instructed OH2HYT to turn the antenna. Because of the beamwidth of their big 16 m dish and high winds, the aiming was somewhat erratic. They could hear their own echoes well, but were unable to decode the signals. The fuses to the carriage blew. This happened because every possible heater was on in order to keep the operating temperature above 0 deg C. It was not possible to replace the fuses at 0200 local time, so operation stopped. Operation was resumed the next day, but after 30 minutes the RX/TX relay at the feed point failed and the preamp became history! All electronics from the system has now been removed and operation will be resumed in the spring, probably in March or April when temperatures should be more cooperative.

OK1DFC: Zdenek was QRV again in Jan on 432 with his 38 el tropo antenna and 1.5 kW on the horizon -- I worked two stations on CW with my single yagi. The first was DL9KR (559/559) followed by OZ4MM (549/539). Stig was little

weaker than Jan but no problem with reading his call. I then had a partial JT65B QSO with EA3DXU. We had full calls, but the moon went below horizon at my site before we could complete. These QSOs count as initials as I am operating from JN79gw. During the summer, I will activate again from my old QTH in JO60rn with 4 x 38M2 yagis and a K1FO PA. I am planning to be active again on moonrise and set during the Feb AW. I will call CQ on 432.034. In April we will have small meeting for OK, OM and SP EME hams. Details can be found at www.ok1dfc.com.



S53J's EME Array -- Yagis for 2 m, 70 and 23 cm are nested

ON5RR: Marc marc_kleyn@mastercard.com writes -- We have been busy, and now have everything moved into our new house except the radio station. In Jan we moving the microwave EME station from the old location (North of Brussels) to a new one, 30 km's away in rural SW of Brussels. Moving the radio station was worse than getting into the new home, hi. We also built a new better insulated shack with antenna support. Basically, the station remains unchanged and includes our proven 3.8 m dish. We will compare the performance between both QTHs. The only enhancements made are the new AZ/EL system and gearboxes. The new location is also in a new grid JO10xr, (we were in JO20cx before), so all QSOs will count as initials. Michel (ON7EH) and I have still checking out the equipment. Our goal is to be active again during the Feb AW. Skeds are welcome on 23 cm. Since we do not have any blockage problems, we'll also be able to run an extended NA window.

OZ4MM: Stig vestergaard@os.dk report for Jan follows -- I spent some time on EME and was QRV through moonset during the AW. I found activity pretty poor on Saturday, but better on Sunday. I worked on 10 Jan, on 432 KL7FH (M/O) for initial #248, KL9A (M/O), DJ3FI(559/559) and KL6M - no others were heard, and on 11 Jan, on 1296 SK0UX (549/569), N2UO (549/569), WA6PY (549/559) and DK7LJ (57/55) - VFB SSB, VE6TA (559/569), VE7BBG (449/569) and heard OE9XXI. As I only then had 10 degs before moonset I decided to quit, but before made a quick RX on 432. To my big surprise, I heard DL9KR working OK1DFC who are running a single 38 el M2 yagi. Quickly the 432 Amp was started and I called Zdenek. We exchanged (539/539) even through my tree blockage at moonset. I also worked HB9Q (579/559). I am very much for a microwave contest, but we want to remember that what we really want to do is improve activity on 2304 and up. It does not

matter if a station is competing in a contest or just making some QSOs for the challenge and fun! It is in everyone's interest to increase activity. In my own case, I keep trying to improve on my own scores from previous years, and to show up for new stations. As for the last few years, I have 4 bands running on EME. I would prefer to have 13 cm and up operation concentrated in one weekend. I believe this would improve activity on all bands. The July AW is too late for a microwave contest because it is too close to summer activities. A more ideal time would be in May.

PA3DZL: Jac Jac.de.Bruyn@12move.nl is QRV again on 70 cm EME from JO21hm after along absence. Using 2 x 21 el yagis, he QSO'd on 7 Jan at 2048 EA3DXU (O/O) using JT65B for initial #128.

SK0UX: Hans (SM0MXO) gustavsson.hans@bredband.net and Viljo (ES5PC) reports on the status of the club 1296 EME station they operate – We still have just 100 W, but the 400 W is in progress. Some problems turned up with temperature drift of the power output. It was not good when trying to combine 4 x 100 W PAs. Temperature stability is especially a concern when a PA is to be mounted outdoors in the Swedish climate. 200 W is easier, but I don't want to give up on the 400 W quite yet. It just might be the 3 dB we need for a QSO. During the AW they worked on 10 Jan at 2036 HB9SV for initial #31, 2140 LX1DB #32 and a new DXCC, 2146 LX1DB on SSB (55/55) and our first ever SSB QSO on EME, 2224 G4CCH, 2253 JA6AHB #33, 2329 OZ6OL and 2339 OE9XXI, and on 11 Jan at 0001 GW3XYW, 0346 K5JL, 0500 WA6PY #34, 0558 OZ4MM and 0616 VE6TA. Heard but not worked were UR5LX, N2UO and VE7BBG. We also had a partial on SSB with DK7LJ who had a BIG signal, but only replied with (22) reports, so no QSO.

UR5LX: Sergej ur5lx@kharkov.ukrtel.net is now a regular on 1296 EME. He has a 6 m dish and 500 W PA. He QSO'd during the Jan SW G4CCH and heard G3LTF, DL4MUP, IK2MMB and VE6TA. Sergej is interested in skeds, particularly with GW3XYW. His webpage is <http://www.ur5lx.vhf-dx.net>.



UR5LX's 6 m dish used on 1296 MHz

VA7MM: Mark lunarlink@hotmail.com reports -- VA7MM was QRV for the ARRL Jan VHF Contest on 23 cm EME. We worked two stations via EME, K5GL on random and VE6TA on sked. We also had 5 terrestrial QSOs. We intend to repeat our 23 cm single band effort in the ARRL June VHF Contest, which fortuitously coincides with an EME weekend.

VE7BBG: Cor ve7bbg@shaw.ca sends the following information – I have received the SETI Beacon when I was using the 7.5', but since last summer I have switched to an 11' antenna. It has a 0.3 F/D, which does provide a very low antenna temp. I sent a Spectran plot to N6TX, which is posted on their website. Lately they seem to be having transmitter trouble again. I find the signal very useful in testing DSP type programs. Spectran seems the most flexible especially with respect to integration, etc. With a full minute of CW, it is an interesting signal to test on. Another way by which it's very detectable is with JT44. If the SETI signal is centered around 1270 Hz, the dB readout on the program will show signal presence. Usually it goes from -33 to -28 and is visible on the "big spectrum" display on JT44. I was going to try using JT65 in the same manner, but that was about the time they started having TX problems. Paul mentioned they were considering adding a JT44 sequence in their 5 min cycle, but that was before JT65 came out. If the B.W. is that narrow on JT65, then that will be where the difference in signal levels probably lies on 1296. I have looked at W5UN's signal on 2 M and there wasn't that much to difference between the 2 modes in signal strength. JT65 was definitely much cleaner copy from his standard CQ message.

VK3FMD: Charlie ibnkarim@bigpond.com has a minimal station for EME on 432 with a single yagi used for tropo and around 150 W in QF22mc. He has

worked several stations on 432 EME in the past on CW. On 13 Jan he QSO'd K2UYH on JT44 with relative ease after trying for more than a year. Charlie believes that this contact is the first successful digital 70 cm EME contact out of VK and should also qualify for a digital national record! He will now try a similar contact on 1296 where he has 20.4 dBd yagi with 120 W at the feed and about a 1 dB NF preamp.

W2ETI: Richard, WA2ILK rcf@eventide.com reports that the 1296 SETI EME Beacon is back on the air -- It had been off as a result of a bad keying relay in the amplifier. Incredibly, I had an exact replacement in stock. It's been pretty reliable since it restarted, although the power is down to about 140 W. You can check the status of the beacon at <http://www.setileague.org/eme/statuspg.htm>. This webpage shows the beacon operating conditions. The TX is only on when the moon is valuable at the beacon's location.

YO4FRJ: Adrian yo4frj@xnet.ro in KN34aw sends his 70 cm EME activity report for Jan – The 2004 year started with a few more 432 CW skeds. I found very good and stable conditions compared with the 2 m band. Local echoes were heard most of the time, and increased my confidence in my nested yagi antenna system compromise. I manage to find and sked in a clean area of the band (432.150). I worked on 3 Jan K1FO (O/549), on 4 Jan K9SLQ (O/O), and on 7 Jan K2UYH (O/O). Later Mr. Murphy decided to visit me; an original Andrew 1/2" exterior jumper blow out and generate an arc in my PA. The jumper was replaced in very cold weather conditions the next day up 20' on the tower, but I lost the skeds with OH2DG and OK2BDQ. Thankfully my PA operation was restored very easy - (thanks to K1FO for his good work and advice). On 9 Jan good echoes returned, but no activity was heard. On 10 Jan conditions with Eur were very good and I finished quickly a sked with G3LTF (559/559) and managed to work HB9Q (559/559) on random in a very noisy QRG. On 11 Jan, conditions were as good as the previous day and I worked on EA3DXU (O/O) very quickly. Jose was a stable and real +10 dB over noise in my Spectran window and FT847'S 25Hz DSP filter. Later in the same day I worked KL6M (439/559) before my moonset. I had 7 moon QSOs in a week mixing 70 cm activity with some 2 m activity as well. I am looking forward to the Feb activity period to try some more skeds. Already on the list are OH2DG and OK2BDQ. More skeds are welcome.



YO4FRJ's EME Array - 432 yagis are inside 2 m array

ZS6AXT: Ivo zs6axt@global.co.za has little news since his bad lightning strike reported in the last NL. He says he feels lucky to be alive, and that it will take at least 2-3 months to get back onto some bands. ZS6WB was hit at virtually same time, but not as badly.

K2UYH: I made two initials in Jan, but was unable to be on for the AW as I had to be in the Dallas area of TX during that weekend. It was a very quick trip, so I did not get a chance to meet with any of the local EME group. I will be back to TX in June for a more extended stay and hope to see more of the gang then. I did try to make some skeds for 9 Jan and the early hours on the 10th, but had no takers and as the WX was not good did not try any random operation. A highlight of the month was finally connecting on 13 Jan at 1315 on 432 with VK3FMD using JT44. After more than a year of trying everything finally lined up. The JT44 signals peaked at -19 dB and were speaker copy at both ends. I am sure we could have worked on CW and will probably try in the future, but we will next try on 23 cm with JT44 (or possibly JT65C depending on test results). I also worked on 7 Jan 0200 YO4FRJ (O/O) on 432.150 for initial #672. The new frequency paid off as Adrian did not copy me in two earlier skeds. During Jan we have had colder WX and more snow than usual. I cannot operate when the dish is filled with snow. I am hoping that the WX improves over the next few

days or else there is a possibility that I could miss the next AW and the SSB contest.

NET/REFLECTOR NEWS BY G4RGK: [KL7FH](#) k7fh@gci.net is QRV on 70 cm with an FT847 and 100 W out to an array of 16 x 12 el yagis. He is looking for skeds from BP51bb. [EA3DXU](#) reports very light activity on 70 cm EME during the Jan AW. He worked only S53J on JT65B, but nothing else. [K9SLQ](#) K9slq@parlorcity.com was active in Jan on 432. Wayne is looking for skeds and welcomes e-mail. [OE9XXI](#) has a new e-mail address rml.peter@aon.at. [WA4NJP](#) also has a new e-mail address wa4njp@bellsouth.net.

FOR SALE: [DL1EJA](#) dl1eja@yahoo.de has an almost new PC-controlled EL/AZ rotor system, type G-5400B, for "smaller" EME arrays for sale. It uses the ARS-interfaces and comprises 2 rotators G400 and G500, which are installed on top of each other with one common control unit and software for WIN and DOS. Contact Oliver by email if you are interested. [WA6KBL](#) reports a source for really good pots for antenna position. They were specially made for position feedback for telescope drives. The resistance goes nearly 360 degs and there is no mechanical stop. They are not waterproof so you will need to enclose them. They are Spectrol 157-9546, 10K resistance and should be good for 1 deg resolution; not better. A Ebay seller has them in bts of five at <http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4664&item=2590708271>. [UX3LV](#) <ux3lv@kharkov.ukrtel.net> has for swap two cavity PAs one for 100-150 MHz (1500 W) GS35B, and the other for 200-400 MHz (1500 W) GS35B, plus additional high power Russian tubes. He is looking for used rigs as the ICOM 706, FT100, FT736, ICOM746, etc. For more information see <http://ux3lv-2003.narod.ru/index.html> or contact Vladimir by e-mail. [W7QX](#) is still in dire need of a schematic for a Siemens RWNH 120 TWT power supply. [DJ5RE](#) thomas.hoeppe@asamnet.de has for sale an EME 23150 23 cm PA using 2 x 2C39s. Typical output is 150 W with 12-15 dB gain at 40% efficiency. [SM0IKR](#) reports worldwide grid maps are available at <http://www.wm7d.net/azproj.shtml>. [F6DRO](#) Dominique.DEHAYS@enac.fr is looking for 2 samples of Stanford Microdevice's SHF-0186 GaAs FETs. [VE6TA](#) ve6ta@telusplanet.net has for sale: 1) a 2 two tube 1296 2C39 cavity PA by EME electronics. He has used this on 1296 EME water cooled but is willing to convert it to air cooling with a blower and shroud. It produced 250 to 300 W out with water cooling. The bias board is not functioning, but have a replacement if needed. He will sell with or without tubes; 2) a 2 x 4CX250 222 amplifier deck with good tubes and without HV supply that he used for 222 EME. It was originally built by W7JF and produces 900 to 1000 W in class C; 3) 4 x 22 el K1FO 432 yagis from Rutland arrays. These were used on 432 EME before he his dish going; 4) 1 to 100 W Bird or Coaxial Dynamics slugs for 2.3 GHz; 5) reasonably priced transverters for 3456, 5760 and 10 GHz; and 6) other items including a PA for 2 m. Please e-mail Grant if there is any interest. [OZ2ELA](#) mrj@danamps.com has a 5.7 GHz 400 W TWTA for sale. It is made by NEC and complete with PSU and service manual in 2 19" rack mount units. Each unit weights around 40 Kg. Input is to an SMA at around 25 dBm. The output is WG137. It is in perfect condition. Email Michael if you are interested. [I5WBE](#) i5wbe@i5wbe.it is looking for a UHF solid state amplifier with > 100 W output.

TECHNICAL: There has been quite a lot of interest in OK1DFC's Septum Feeds. Here are the dimensions for a 3 cm version of Zdenek's Septum Feed.

FINAL: I must apologize for the lateness of this NL. Somehow I looked at the 2003 EME calendar and thought the AW was a week later. I hope this delay does not affect the turn out for the EME SSB Contest.

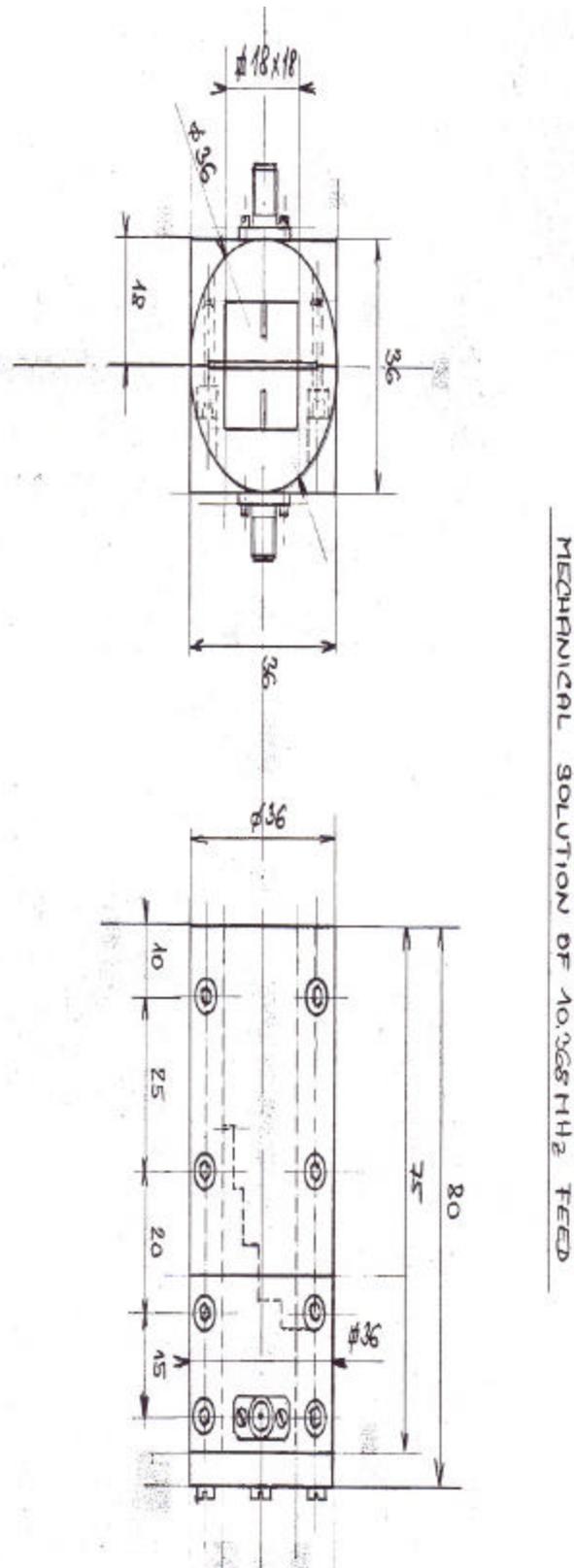
There will be a meeting of OK, OM and SP EME operators in Prague – see www.ok1dfc.com for more information.

Considerable progress was made on the EME2004 Conference <http://www.qsl.net/eme2004/>. We just about have the spouses program finalized. It will include a walking tour of Princeton University and its Art Museum and the nationally known Sculpture Gardens near Trenton, and trips to New York and Philadelphia and shopping opportunities. Registration has been set at \$US80 or 70 EUR. Europeans can pre-register with HB9BBD, Dominique at dfaessler@bluewin.ch to simplify funds transfer issues. The speaker program is also starting to come together. EME2004 Conference papers include: Noise Figure Calculation by WA6PY, JW/SM2BYA 432 MHz EME Dxpedition by SM2BYA, Circular polarization feed with septum by OK1DFC, 2 x G17B 23 cm 500 W amplifier by N2UO, EME in Alaska by AL7EB, Portable EME operation by K2UYH, Multi-reflector antennas by W1GHZ, and Keynote Address by K1JT. Please make your plans to be at the conference on 6/7/8 Aug.

The 38th annual Central States VHF Society Conference will be held July 22-25, 2004 at the Delta Meadowvale Resort and Conference Center in

Mississauga (Toronto), Ontario, Canada, and is looking for speakers. This date is two weeks before the EME2004 Conference. Some of you planning an

MECHANICAL LAYOUT OF 3 CM SEPTUM FEED BY OK1DFC



extended visit to NA might want to consider a "doubleheader" by attending both the CSVHF Conference and then EME2004 Conference. Contact Bob, VE3BFM VE3BFM@csvhfs.org for more details.

W2WD wbutler@comcast.net has had updated version of his EME e-mail address list.

We have HB9CRQ Top List this month. It is important to note that this list is based on updates that Dan receives. If you have worked additional initials, but not reported them to Dan, they will not be shown on the list. You can update your listing by e-mailing to hb9crq@hb9q.ch.

I have received only one comment this month on how and when to structure a new microwave band EME contest, from OZ4MM, and Stig's feeling was that the contest should be in May. How do you feel?

I am again looking technical material. Please keep the news and reports coming too. If the WX improves I shall be looking for you during the SSB Contest on 1296 and on 432 the following day. 73, Al - K2UYH

HB9CRQ's TOP LIST:

70 CM

Pos.	Callsign	Initials
1	DL9KR	796
2	K2UYH	662
3	K1FO	613
4	DK3WG	404
5	N9AB	400
6	SM2CEW	382
7	G3LTF	364
8	SM3AKW	363
9	OK1KIR	358
10	KU4F	346

23 CM

Pos.	Callsign	Initials
1	OE9ERC	282
2	W5LUA	223
3	OZ4MM	215
4	K2UYH	214
5	F2TU	213
6	HB9BBD	203
7	G3LTF	194
8	ZS6AXT	191
9	OK1KIR	189
10	G4CCH	186

13 CM

Pos.	Callsign	Initials
1	OE9ERC	59
2	W5LUA	53
3	OZ4MM	42
4	OK1KIR	41
5	F2TU	35
6	ZS6AXT	31
7	SM3AKW	28
7	JA4BLC	28
8	GW3XYW	23
9	G3LTF	21
10	WA6PY	13

6 CM

Pos.	Callsign	Initials
1	OE9ERC	25
2	W5LUA	21
3	OK1KIR	17
3	F2TU	17
4	CT1DMK	16
5	ZS6AXT	13

3 CM

Pos.	Callsign	Initials
1	W5LUA	50
2	F6KSX	40
3	AA5C	34
4	F2TU	29
5	I5PPE	26
6	OK1UWA	25
7	CT1DMK	22
8	OK1KIR	19
8	G4NNS	19
9	I4TTZ	16
9	PA0EHG	16
10	W6HD	13

SAMPLE SSB CONTEST CERTIFICATE

