

## 432 AND ABOVE EME NEWS MARCH 2005 VOL 33 #3

EDITOR: AL KATZ, K2UYH; ENGINEERING DEPARTMENT, THE COLLEGE OF NEW JERSEY, PO BOX 7718 EWING, NJ 08628  
TEL (W 609-584-8424) OR (H 609-443-3184), FAX (609-631-0177), E-MAIL [a.katz@ieee.org](mailto:a.katz@ieee.org)  
PROD/MAIL: BRIAN MULLANEY, KB2TIS (609-883-6390), E-MAIL [mullaney@mccc.edu](mailto:mullaney@mccc.edu)  
NETNEWS EDITOR: G4RGK, DAVID DIBLEY, E-MAIL [g4rgk@btinternet.com](mailto:g4rgk@btinternet.com) (based on K1RQG's Netnotes and Reflector News)  
EME NETS: 14.345, 10 AM ET SATURDAY AND SUNDAY (AFTER VARO NET ENDS ON SUNDAY)  
NET CONTROL AND SKEDS CORDINATOR: JOE, K1RQG, TEL (207-469-3492), E-MAIL [k1rgq@aol.com](mailto:k1rgq@aol.com)  
EME DIRECTORY: <http://www.dl4eby.de/>, DL4EBY/DK0TU, KLAUS TIEDEMANN, TEL (49-30-7955467), E-MAIL: [tklaus@snaflu.de](mailto:tklaus@snaflu.de)  
NL EMAIL DISTRIBUTION and EMAIL LIST CORD: WARREN, W2WD [wbutler@comcast.net](mailto:wbutler@comcast.net) [TXT OR PDF OR "ON WEB" NOTICE ]  
EME STANDINGS: DAN GAUTSCHI, HB9CRQ/HB9Q E-MAIL [hb9crq@hb9q.ch](mailto:hb9crq@hb9q.ch) OR SEE HIS WEBPAGE AT [www.hb9q.ch](http://www.hb9q.ch).  
THE NL WEB VERSION IS PRODUCED BY W6/PA0ZAND AVAILABLE AT <http://www.nitehawk.com/rasmit/em70cm.html>.

**CONDITIONS:** This year's SSB Contest was a rough one with the moon at apogee! It has been said that the position of the moon does not make that much difference and that EME QSOs can be made at all moon distances. This observation is certainly true. But when you are trying to work a marginal station on SSB, 2 dB is a hug difference! This loss is what the SSB contest fun makers had to put with this year. On top of the moon path handicap, weather was not cooperative in many parts of the world and definitely affected activity level. Despite these problems activity seemed up from last year. A list of reported score is shown below. G4CCH is by far in the lead, but may have some competition from LX1DB and OE9ERC, both of who were quite active with big signals, but have not yet submitted scores. The top fun maker will be decided next month after hopefully more scores are received. 70 cm activity may have suffered from the 23 cm SSB activity, but there were definitely people on as shown by the reports. We get a break from the contests in March, and then on 16/17 April the focus turns back to 23 cm and 3 cm up for the 1<sup>st</sup> part of the EWW EME Contest. The 70 cm part does not occur this year until June.

**EARLY 1296 EME SSB CONTEST RESULTS:** G4CCH = 495 points, K2UYH = 410 points, ON7UN = 360 points, SX0UX = 342, K9SLQ = 315, OZ4MM = 256, WA6PY = 220, G3LTF = 192, GW3XYW = 165 points.



ZS5LEE 1296 cm 3.8 m dish with OK1DFC Septum feed

**2004 ARRL CONTEST Scores:** The complete results of 2004 ARRL EME contest are now available at <http://www.arrl.org/contest/s/results/2004/eme.pdf>. F1EFN reports that there is an error in the 10 GHz scores. His group, F6KSX is listed as a single operator entry, but they are a club multi-operator entry and should be listed as such. This change means that OK1UWA is in first for the 10 GHz single operator class. F6KSX should be list in second place in the 3 cm multi-operator class. Jean-Jacques also notes that the write-up incorrectly states that WA7CJO set a new 10 GHz Contest QSO record. F6KSX had 18 QSOs back in the 2001 contest and thus still holds this record.

### **PROGRESS IN EME TECHNOLOGY – GUEST EDITORIAL BY K1JT:**

In a guest editorial entitled "EME Contacts Using Digital Modes," G3LTF asserts that "the latest releases of JT65 have renewed the controversy about how digital modes are used in EME." It seems necessary for someone representing the loyal opposition to respond, so I will do my best. At the start I should point out the obvious: JT65 was designed to optimize EME on the VHF bands, and the vast majority of its users are on 2 m. Many are not regular readers of this newsletter, and most are quite unaware that any "controversy" exists. They are having far too much fun making EME contacts to have noticed. Of course I understand and share the sense of personal accomplishment one feels after digging an unknown weak signal out of the noise by mental concentration. I

admire and appreciate the heroic achievements of many EME pioneers over the years, and the skills and techniques they've developed to enrich this aspect of our hobby. What I *cannot* understand are the apparent wishes of any who have done these things to throw obstacles into the path of a new band of experimenters who use different coding and modulation to accomplish the same things. To maintain consistency with other EME practice, these hardy souls use exactly the same long-established criteria for what constitutes a valid QSO. They employ a sophisticated, state-of-the-art coding scheme that under the right conditions, and in the hands of a skilled operator, can eliminate nearly all errors of data transmission, even with inaudible signals. They modulate their transmitters in a way known to be much more efficient than on-off keying. To make it interesting, they embellish their QSOs with more information than is used in most other EME contacts, routinely exchanging both signal reports and grid locators, and often finishing with real numerical signal reports or conversational chit-chat. I am sure that the happiness of a ham who works his #13 EME initial with 150 W and a single yagi is no less than that of the big-station operator working initial #813. In some ways, the little fellow can feel an even greater sense of accomplishment, since he has pulled it off with signals some 10-15 dB weaker than those required for a CW QSO. Like the pioneers of earlier EME days, the trailblazing users of JT65 also experience the thrill of discovering extremely weak signals from unknown stations, decoding them, and making random QSOs. Some of the new pioneers become so fascinated by what can be done that they begin to study the mathematical aspects of information theory that make the new digital techniques possible. I am not the only old dog among us who has spent many recent hours learning new tricks in the art of communicating. I am certainly not the only one of us who, fascinated as a youngster by the technical aspects of our hobby, went on to a productive and fulfilling life in science or engineering. As has been true of Amateur Radio in the past, the games we play might even make some significant contributions to communications technology.

Where is the problem in any of this? Why would anyone who loves EME want to deny others the pleasure of doing the same things in a slightly different and demonstrably more efficient way? Why would any forward-looking amateur want to minimize the achievements of this new breed of pioneers, or suggest that their EME QSOs are somehow less worthy? G3LTF suggests in his essay that the EME community might want to "develop a standard for the way in which a ... [computer] program ... for EME should be designed and built." I think this is a ridiculous idea, and I've already shared my views on the matter privately with Peter. It would be particularly silly if the standard were to be proposed by individuals who do not like and do not use such programs, and who have never designed or built anything comparable themselves. To encourage the spirit of innovation and experimentation that has made Amateur Radio great, it will be far better for us to let all flowers bloom, and see which ones become popular and survive. Peter further asserts that "we should put real effort into reaching agreement amongst ourselves on what is acceptable for a digital QSO." We already have such agreement: our existing standard for valid QSOs works admirably for all propagation modes and any method of signaling. The guideline makes no mention of how one's information should be coded or one's carrier modulated, for the simple reason that these details are quite irrelevant to its intended purpose.

Let's be up front about it. If JT65 did not work much better than CW, the traditionally popular digital method, we would not be reading guest editorials that find fault with it. The protocol does work well, conforming to long-established EME procedures with a remarkable level of efficiency, and therefore some find it threatening and even "unfair." This is no more rational than concluding that HEMT preamplifiers, dual GS35B's, or arrays of 24 yagis are "unfair." We who struggle for fractions of dB's have always admired good engineering. These days, not all good engineering is done with hardware. By all means, everyone should adhere to long accepted guidelines for what constitutes

a minimum QSO. By all means, let us encourage random operation because of the extra thrills it brings. But let's remember that these worthwhile goals have nothing to do with anyone's choice of coding and modulation techniques. Let's put aside the sociology and concentrate our group discussions on technical matters, where we have much to learn from one another. One further point: in conversations and email exchanges with others on these matters, I have observed that many have formed conclusions about the internal workings of JT65 that are based on inadequate understanding and faulty assumptions. To reduce the possible latitude for any such misunderstandings, I have prepared a very thorough technical document entitled *The JT65 Communications Protocol*. It is available on the WSJT web site at <http://pulsar.princeton.edu/~joe/K1JT/JT65.pdf>, and in due course a version will be published in the open amateur literature. With best regards, and absolutely no hard feelings – Joe, K1JT

**DL3OCH:** Bodo [dl3och@gmx.de](mailto:dl3och@gmx.de) brings us up to date on his activities and plans – I have been very busy. I graduated moved to Pforzheim and started a new job in the antenna development. It's very interesting, but also a lot of work. Heinrich did some tests to compare the sensitivity of the new version of JT65. It didn't work very well as he reported last month. The "deep search" in JT65 is different to work with than JT44. We found that the frequency has to be more stable for JT65 than we had realized. We ordered a TCXO for the IC706 that we both are now using, and plan to do more tests. We have already tried a QSO, but it didn't work well. We could decode some periods, but I think that was just good luck. The frequency drift of the IC706 was one fault. The strong QSB was another. The signal changed from "nothing to hear" to "loud and clear" without moving the antenna. The dynamic range does not appear to be as wide as with JT44. We should see a difference with the new TCXOs and will do some more measurements on 1296 EME. [K1JT believes that the poor performance display by JT65 relative to JT44 was primarily due to TX/RX stability issues. It shall be interesting to see Heinrich and Bodo's results after the new TCXOs are installed. Joe also reports that the latest version of JT65 corrects the problem with sending extended calls used by dxpeditions.] I was in 3A, but there was no possibility for EME during the day when the moon was up. There was just too much traffic and noise. Operation has to be at night – the later the better. I was there for a weekend and made 1300 QSOs on the low bands. I am investigating locations for future 1296 EME operations. I would like to operate from Ireland again. As far as I know there is no 1296 EME activity from EI or MI (northern Ireland). I could operate easily from two completely new DXCC locations without all that trouble that I have in 3A. EI would not be much further. I will have to use an expensive ferry. I may do a trip for two weeks there in the summer. I want to connect this operation with the IOTA contest. MI is a big country and has plenty of room for my mobile EME station. I try to be better prepared and work more stations than in the past.

**DK3WG:** Jurgen [dk3wg@darf.de](mailto:dk3wg@darf.de) was QRV in Feb worked on 70 cm CW skeds S53RM (549/539) and UT2EG (539/539) to bring him to initial #410.

**DL9JY:** Ruediger [R.Knorr@t-online.de](mailto:R.Knorr@t-online.de) was QRV on 432 for a few hours only in Feb with his station in JO31mk. He worked HB9Q, NC1I, UA3PTW and OZ4MM. Heard were VK3UM and G4ERG (CWNR). His station comprises 4 x 29 el yagis, GS35B Cavity 1 kW PA and FHX35 0.35 dB NF LNA. His web page is [www.dl9jy.de](http://www.dl9jy.de).

**G3LTF:** Peter's [g3lft@btinternet.com](mailto:g3lft@btinternet.com) Feb EME report-- I now have the 6 tube ring 1296 PA working well again and giving 800 W in the shack. It worked fine on SSB. I was only able to get on for the end of the SSB Contest at 0030 on 20 Feb. In one and a half hours I worked K2UYH, LX1DB, K9SLQ, OE9ERC, G4CCH, OZ6OL, ON7UN, W7BBM, K5GW, K4QI and HB9Q. All were good copy on two-way SSB. VE6TA and WA6PY were QSO'd on CW/SSB and later KL6M on CW. Later in the day, still on 23 cm, I had a long CW chat with G4CCH and also worked IK3COJ. My 432 system is working well again, I've built a new high dynamic range receive converter, replacing one built in 1980! I tried 432 several times during the week before with excellent echoes on CW and SSB, but didn't find anyone to work. I did work DL9KR on the 22nd, again a proper CW chat. For those who still believe that a Digital Mode QSO in which the default short message report (O/O) - transmitted by two alternating tones - used as the report actually represents an exact equivalence to a UHF band CW QSO; I went back through my log and in the last 420 EME QSOs (which includes 3 contests) covering 4 bands, in only 33 of them was an (O/O) report used and of that number 15 were on 2 m where of course (O/O) is the norm. Thus 96% of the QSOs used a standard, unknown report. I'm sure that this breakdown is not untypical. Think about it!

**G4CCH:** Howard [howard@g4cch.com](mailto:howard@g4cch.com) sends his report for the SSB EME Contest and a mid week test to check his equipment (also EU activity night) – I worked on 15 Feb at 2011 IW2FZR (O/O), 2024 SK0UX (569/569), 2035, K9SLQ (579/579) and 2043 SM2CEW (569/569), on 18 Feb at 1940 ON7UN (569/569), 1950 IK3COJ (539/449), 2106 F1ANH (539/549), 2112 K4QI

(569/559) and 2119 W7BBM (54/55) on SSB, and during the AW and SSB Contest on 19 Feb (all QSOs on SSB except those with reports) ON7UN, SK0UX, HB9Q, 1647 HA5SHF (539/559), LX1DB, F6KHM, OE9ERC, 1802 LA9NEA (549/559), F1ANH, GW3XYW, OE5EYM, 2029 IK3COJ (539/549), OZ6OL, K9SLQ, N2UO (CW/SSB), K5GW, K4QI, K2UYH, W7BBM, OZ4MM, K5JL, HB9SV, K0YW and G3LTF, and 20 Feb VE6TA (CW/SSB), WA6PY, VA7MM (CW/SSB), 0221 KL6M (O/O), G3LTF (569/569) and IW2FZR (O/O). Gotaways were WB5AFY and F5HRY. I made 21 x SSB QSOs and 3 CW/SSB QSOs for a total score in the SSB contest of  $11 \times 45 = 495$  points, plus 4 x CW only non counting QSOs. Hard work, but I'm very pleased with the result... I also tried on 21 Feb a test with ZS5LEE who was using a 3.7 m dish and 10 W. Lee did not hear me, and suspects tree blockage and pointing accuracy may have been the problem... Maybe with a better window and more power at Lee's end, it will be possible.

**G4ERG:** Peter [g4erg@g4erg.karoo.co.uk](mailto:g4erg@g4erg.karoo.co.uk) worked during the 19/20 Feb AW G4RGK, RK6MC for an initial (#), W7AMI, HB9Q, UA3PTW, N9AB and WA4NJP. He heard DL7APV, OK3BDQ, K1FO, NC1I, KORZ, RA3LE, and possibly DJ9JY. Peter is now running Spectran in his shack, and is open for any sked requests.

**G4RGK:** Dave [g4rgk@btinternet.com](mailto:g4rgk@btinternet.com) was on 70 cm for a total of 6 hours during Feb AW, but only worked 3 stations. He QSO'd NC1I, G4ERG and UA3PTW. Heard were DL9JY and OK2BDQ.

**GW4DGU:** Chris [chris@chris-bartram.co.uk](mailto:chris@chris-bartram.co.uk) is now QRV on 10 GHz EME -- After making the decision to go for 10 GHz EME in 1982, I've finally made it! I worked Jim, WA7CJO on 20 Feb for my initial QSO. A lot has happened in the last 23 years, including making 6 CDs of English traditional music. It wasn't until we moved to Wales to escape the music that I really became active in this wonderful niche of the amateur radio hobby once again!! To work Jim I was running just 10 W from an SSPA into a 2.4 m (8') ex-VSAT offset dish. The preamp was an FHX05 measuring 1.1 - 1.2 dB NF, which with second stage, changeover relay losses (I do the whole thing in coax) and feedhorn noise contribution, gives a Tsys of ~135 K. 'Could do better' as teachers used to say about my performance in school, but not awful. Jim was a huge signal. I sent (535) as a report once I was sure that he'd copied me, but in retrospect it should have been at least 555! I can just detect my echoes at apogee - I don't currently see the Moon at Perigee and I see about 0.8 dB Moon noise, which seems to agree with the estimated and measured station parameters. I now have a TWT running at ~30 W, although there's a little bit of work needed to put it on the antenna. The power supply I'm using isn't right for the tube, but it's usable, and (I hope) I'm not about to burnout the helix. The collector voltage is about 20% low. I'm working on a new PSU that should put me in the 40 - 50 W class. I've also started putting-out feelers for a significantly bigger tube/amplifier. I currently have severe window limitations. I need the Moon to have >40 degrees elevation here in IO71 to see above my house. I'm working towards getting planning permission for a permanent installation of the antenna, in which case, I'll have a much better horizon. I'd be very happy to receive sked requests. As part of the planning application, I'm also proposing a 16 yagi 432 array. I haven't forgotten my first love, 70 cm! I'll also be building a 1296 feed for my dish. I've designed and prototyped one element of a 4-device 250 W SSPA for 1296. I've also worked-out how to feed my rather eccentric 0.935 f/D offset dish on the band. Hopefully that work will come to fruition sometime in late summer.

**GW3XYW:** Stu writes that his activity has been split during the past year between 2 m and 23 cm. Ho 23 cm he QSO'd on 22 Jan OH2DG, SK0UX and DF3RU, on 23 Jan JA6AHB and OZ6OL, and on 19 Feb during the SSB EME Contest F6KHM, ON7UN, OE9ERC, HB9Q, SK0UX, G4CCH, OE5EYM, F1ANH, K9SLQ, OZ6OL, HB9SV, ON7UN (dup), K4QI, OZ4MM, W7BBM and K2UYH. All his QSOs were on CW except during the SSB contest when they were all on SSB. He ended with a score of 15x11 for 165 points. Stu operates JT65B on 2 m EME and has developed a technique that helps accelerate the completion of a QSO once calls and grids have been exchanged. He feels this technique may also be helpful to those operating JT65 on 70 cm and above. He uses a cardboard template to decode ORs, Rs and 73s from the Spectran display. These exchanges appear as squarewaves of different amplitude on the Spectran waterfall display because they have different frequency shifts (RO = 107 Hz, R = 161 Hz and 73 = 215 Hz). Thus it is possible to quickly spot what the other station is sending using his template, and modify one's reply without waiting for the full decode. The template is calibrated by placing it up against Spectran's frequency scale and could probably be implemented in software as an on-screen display. Stu's 10 GHz activity is QRT. His 10 GHz Varian TWT failed. He is looking for a replacement or switching to an SSPA.

**I0UBG:** Mario [mario.alberti8@tin.it](mailto:mario.alberti8@tin.it) writes that he planned to operate the EME SSB Contest along with other Italian 23 cm EME stations, but that during the

two days of the contest all Italy was under snow, especially the internal part. This is why there were no I stations active in the contest.

**K0RZ:** Bill [k0rzeme@aol.com](mailto:k0rzeme@aol.com) reports he was QRV on 70 cm for both the Jan and Feb AWs. He called CQ for several hours each day in Jan AW and only worked NC1I on 1/21. High winds limited his FEB AW operating time, but QSO'd on 19 Feb HB9Q, and UA3PTW. Bill will be QRV for the March AW.

**K0YW:** Bruce [k0yw@frontier.net](mailto:k0yw@frontier.net) writes that he was active on 1296 during the pre AW -- Nil was heard from ZS5Y during my sked. I did hear another station come on and call K2UYH for one listen sequence, but he didn't return. It definitely wasn't Derek. The good news is that I added 3 initials during the weekend - ON7UN, LA9NEA (559/569) - great signals from him and OH6NVQ (O/529). He had just finished with PA3CSG. I listened to the WA6PY-ZS5Y sked and heard WA6PY, but nothing from ZS5Y. I also heard some JT on 034. I was seeing 22.1 dB of sun noise and 0.58 dB moon noise on 23 cm in Feb.

**K3MF:** Wayde [k3mf@aol.com](mailto:k3mf@aol.com) in FM19xp (Maryland) is now QRV on 432 -- It is official now! I worked Andy, N9AB this morning on 432 using JT65b. My set-up is still QRP, so this proves the antenna works. 8 x 13 quagi's and 50 W at the rig. Andy reported a -27 dB signal and he was -20 dB at my end and audible most of the time. I am still working on the el/az system, and using Armstrong system at present. I need to put the preamp at the antenna. I am also modifying an K2RIW deck to accept a pair of 4cx400 tubes, which should yield around 800 W output. I hope to be QRV on 1296 this summer. I have a 12' solid dish and I am building a G17b amplifier.

**K4QI:** Russ [k4qi@aol.com](mailto:k4qi@aol.com) writes - I got on for the SSB contest and worked the following on SSB/SSB: K5GW, G4CCH, GW3XYW, OE9ERC, SK0UX, LX1DB, K2UYH, OZ4MM, K0YW, HB9Q, ON7UN, OZ6OL, K9SLQ, WA6PY and G3LTF, and on SSB/CW: K5JL, DJ9YW and VE6TA. I ended with 33 contact points in 8 sectors for a score of 264. I also worked on CW/CW VA7MM and KL6M. The strongest signal was LX1DB who was kicking the S meter up to S5 ~ S6. The only station heard that was not worked was HB9SV, who was also quite strong. I was surprised at the lack of activity especially in the US.

**K7XQ:** Jeff [k7xq@elite.net](mailto:k7xq@elite.net) is QRV on 432 EME again from his new QTH in CM97qi with 4 X 9 w/ yagis (23.3 dBd) and 800 W. He is now starting work on mounting a 14' dish for 1296 EME. He has an AZ/EL mount and is looking for ideas on how to attach his dish to the mount. Pictures of what he is working on can be found at [http://www.elite.net/~k7xq/2005\\_Dish\\_Project.htm](http://www.elite.net/~k7xq/2005_Dish_Project.htm).

**K9SLQ:** Wayne's [k9slq@parlorcity.com](mailto:k9slq@parlorcity.com) reports the following EME SSB Contest QSOs from EN7ØKK on 23 cm: On 19 Feb at 1924 SKØUX JO (54/55), 1931 OZ6OL JO (54/55), 1935 ON7UN JN (54/55), 2021 GW3XYW IO (55/55), 2049 G4CCH IO (56/56), 2139 OE9ERC JN (56/56), 2205 K2UYH FN (55/55), 2212 OZ4MM JO (55/56), 2220 HB9SV JN (54/57), 2224 K5JL EM (55/56), 2246 LX1DB JN (56/56), 2300 WB5AFY EM (55/55), 2317 W7BBM DM (55/55), K4QI FM (55/55), 0040 G3LTF JO (55/56), 0053 VE6TA DO (559/56) on SSB to CW, 0117 HB9Q JN (56/54) and 0157 WA6PY DM (55/55) for score of (17X2+1)x9 = 315 points. I also worked KL6M on CW/CW for fun. He is weak, but getting to have Mike back on 1296.

**KL6M:** Mike [melum@customcpu.com](mailto:melum@customcpu.com) is back on 23 cm, but is disappointed with the performance of his system - I have something drastically wrong with my system on 1296. Signals should be much stronger than they are. My amp is putting out 150 W, but my own echoes are very weak. It almost seems that I am out of focus. I worked K9SLQ (O/O) and several others during the AW, but made no SSB QSOs.

**LX1DB:** Willie had a big signal and was active during 1296 EME SSB Contest, but we only have his report for the first few hours. At that time he had made 8 QSOs, but found no JA 23 cm activity. He did work IOUGB on SSB for a new one and heard SK0UX on CW. Willie has a new email address - [wbauer@pt.lu](mailto:wbauer@pt.lu).

**NC1I:** Frank [frankp@gcq.net](mailto:frankp@gcq.net) was QRV on 70 cm during the 18/19 Feb moon window and called CQ from 1800 to 0500 almost continuously, but only had 3 takers, UA3PTW, G4ERG and K2UYH. He also heard K4EME and notes that his echoes were huge. Frank was disappointed by the turnout.

**OH6NVQ:** Tomas [tomas@multi.fi](mailto:tomas@multi.fi) was active on 23 cm the pre AW - In Feb I QSO'd K2UYH (O-549/449) on sked, PA3CSG (O/O) and K0YW (O/O). The moon was really going down and in three tops, but I still managed the last two QSOs on random. I have never worked this low through the woods before! I need use a chainsaw to minimize losses in the NA direction.

**ON7UN:** Eddy [ejspers@on7un.net](mailto:ejspers@on7un.net) reports on the 1296 EME SSB Contest - This was the first live test for my new final amplifier. I installed the TH327 amplifier in the equipment shelter two weeks ago. The equipment worked without any problems. The tube was on heaters and HV for a week, to condition the PA. A number of Plisch/R&S TH327 cavities like mine went into the EME community the last years. Modifications to these cavities for use on 23 cm EME can be found on my website [http://www.on7un.net/23cm\\_hpa.htm](http://www.on7un.net/23cm_hpa.htm). In the contest I worked 20 stations all on SSB and added 7 initials. My log read as follows: Feb 19 at 1355 HB9BBD (33/58) JN, 1420 OE9ERC (55/55) JN, 1442 LX1DB (57/56) JN, 1522 SK0UX (56/56) JO, 1611 HB9Q (55/54) JN, 1627 G4CCH (55/53) IO, 1637 F6KHM (57/55) IN, 1714 OZ6OL (54/54) JO, 1748 GW3XYW (54/44) IO, 1933 K9SLQ (52/55) EN, 2100 K5GW (56/56) EM, 2147 HB9SV (58/56) JN, 2155 W7BBM (53/55) DM, 2224 OZ4MM (56/55) JO, 2231 K2UYH (55/56) FN, 2238 K0YW (54/55) DM, 2358 K4QI (54/55) FM, 0005 K5JL (52/55) EM, 0020 N2IQ (54/54) FN, 0111 G3LTF (53/56) IO for a score of 40x9 = 360 points.

**OZ4MM:** Stig [vestergaard@os.dk](mailto:vestergaard@os.dk) writes - During the last AW on 19-20 Feb I was QRV on both 432 and 1296, but for a limited time. I found fair activity, especially on 1296 due the SSB contest. On 432 I worked VK3UM (549/559), SM2CEW (559/569), VK4AFL (559/559), RW3PX (439/339), UA3PTW (559/569), DL9JY (549/449), G4ERG (559/549) and RK6MC (O/O) for initial #267. Prior to the weekend I found water in one of the dual dipole phasing lines. I'm sure it helped my signal when I changed the cable. On 1296 there was great activity on SSB. I'm only sorry I was not able to be more QRV. I worked OZ6OL (44/54), GW3XYW (55/56), OE9ERC (57/56), K9SLQ (55/56), G4CCH (56/56), F6KHM (57/57), ON7UN (55/56), LX1DB (57/57), SK0UX (55/56), F1ANH (44/43), K0YW (54/56), W7BBM (54/55), HB9SV (57/56), K2UYH (55/57), K4QI (55/55) and HB9Q (55/55). I also QSO'd VE6TA (549/569) the next day after the contest ended. My SSB contest score was 16 (SSB QSO) x 8 grid sectors (JO, IO, JN, EN, IN, DM, FN, FM) for 256 point. I should be on in March for the activity weekend too. Any skeds are welcome.

**RK6MC:** Sergei [rk6mc@mail.ru](mailto:rk6mc@mail.ru) is located in Taganrog, KN97kg and is ex UA9XEA, which was located in Ukhta, LP63VM. He is active on 432 with 8 x 23 el yagis, a GS35B 1.1 kW PA and MGF1302 preamp. He is receiving about 13.5 dB of sun noise. He QSO'd in Feb HB9Q (539/539), UA3PTW, G4ERG, S53RM and K2UYH. Because of TVI problems, Sergei can only transmit between 2100 and 0800.

**SK0UX:** Hans (SM0MXO) [gustavsson.hans@bredband.net](mailto:gustavsson.hans@bredband.net) reports on his clubs 1296 SSB EME CONTEST results -- We were only QRV from around 1500 and went QRT at around 2240. At that time we did not hear any stations that we had not already worked. It was a fun event and we enjoyed listening to and working all the great signals off the moon. Our log reads as follows: 19 Feb at 1517 ON7UN JO (56/56), 1517 HB9Q (57/54) JN, 1523 OE9ERC JN (57/54), 1538 LX1DB JN (56/56), 1630 G4CCH IO (56/55), 1645 OZ6OL JO (54/54), 1655 F6KHM IN (57/55), 1730 OE5EYM JN (56/55), 1756 F1ANH IN (53/31) 1814 GW3XYW IO (54/54), 1845 LA9NEA JO (53/54), 1920 K9SLQ EN (55/54), 2055 HB9SV JN (57/57), 2103 WB5AFY EM (53/54), 2120 K5GW EM (56/56), 2159 K2UYH FN (54/55), 2207 K4QI FM (54/55), 2227 K0YW DM (52/55) and 2230 OZ4MM JO (56/55) with all on SSB for a score of (19x2)x9 = 342 points. The operators were: Viljo, ES5PC, Lasse, SM0KAK, Pontus, SM0SBI and Hans, SM0MXO. The station was 6 m dish with VE4MA feed, 350 W SSPA and 0.37 dB NF preamp. How about another event like this on 13 cm? I think it would be just as much fun. We would be on for sure!

**SM2CEW:** Peter was also QRV during the Feb pre AW on 1296 and made 3 initials with OH6NVQ, WB5AFY and ON7UN. Peter is looking for RK6MC and UT2EG on 70 cm EME.

**S53RM:** Sine [s53rm@lea.hamradio.si](mailto:s53rm@lea.hamradio.si) has finally completed a high power 432 PA using a YL1055. It delivers 1 kW in the shack and 700 W at feed. He worked in Feb UA3PTW and UT2EG, and heard EA3DXU, but no QSO.

**VK3UM:** Doug [tikaluna@ycs.com.au](mailto:tikaluna@ycs.com.au) reports on 432 during the Feb AW -- My Sun noise measurements for 18/19 Feb between 2330 - 0000 indicated an SFU of about 140, but later NOAA figures indicated only about 105. Suffice to say the Sun was quite active by my measurements and I expected to see this reflected in increased libration and deep fading of signals off the Moon. This was not the case. There was only one short period where libration was severe (at 1427 on the 19th) when I was working I5CTE -- Not even a calls database could beat a good CW brain here! Faraday was approximately 45 degs at moonrise on the 19<sup>th</sup>, 0 degs at 1427 and back to 45 degs at moonrise on the 20<sup>th</sup>. Echoes were consistent and quite normal (~17 dB in a 120 Hz BW) throughout this period. On moonset on the 19th Faraday was swinging between 90 and 45 degs before almost "jumping" to 0 just before moonset. At 1442 - 1444, my noise level rose about 8 dB above my ground noise level in both polarities. Checking

with SM2CEW revealed that he did not hear any additional noise at that time. I confirmed later that although Taurus was in the "ball park", it was too far away to be the origin of this noise. Activity was only so during my sole Eur activity period from 1307 to 1506 with the following worked: HB9Q (CWNR 50, 150 W), SM2CEW - several chats, UA3PTW, EA3DXU - QRZ, RW3PF, I5CTE and OZ4MM - very loud. Also heard were DL9JY and VK4AFL. A couple of other guys also called me right at 0.5 degrees and missed out. Sorry, there was no tropo bending here! Overall, I would rate conditions as "pretty normal".

**W7UPF:** Don [donsay2@cox.net](mailto:donsay2@cox.net) in AZ (DM42) was active on 2 m EME in the past. He recently returned to EME, but is now QRV on 23 cm with a 10' dish and 200 W (mounted on the dish). He has already made random contacts with a few 1296 EME stations on CW and SSB and is interested in skeds.

**WA6PY:** Paul [pchomins@san.rr.com](mailto:pchomins@san.rr.com) in DM13la was active in the SSB Contest. He QSO'd on 19 Feb at 0107 LX1DB (55/55) JN, 0116 PY5ZBU (44/56) GD, 0124 K2UYH (55/55) FN, 0127 K4QI (55/55) FM, 0134 K5GW (55/55) EM, 0137 G4CCH (55/55) IO, 0148 G3LTF (55/55) IO on CW/SSB, 0151 W7BBM (55/55) DM on CW/SSB, 0155 K9SLQ (55/55) EN, 0207 HB9Q (56/55) JN, 0214 VE6TA (55/44) DO on CW/SSB and 0224 OE9ERC (56/55) JN. All QSOs were on SSB unless noted and Paul TX'd on SSB. He ended with a score of  $(2 \times 10 + 2) \times 10 = 220$  points. Paul's 1296 station consisted of a 3.6 m dish, f/D = 0.36, W2IMU feed with circular polarization, manual Moon aiming, TX of 2 x 7289 to a TH238 to TH327 for 1 kW at the feed, and LNA - cavity input two stage with ATF35076s.

**ZS5LEE:** Lee [lee@zs5lee.co.za](mailto:lee@zs5lee.co.za) is QRV from KG50jf on both 70 cm and 23 cm with modest systems. On 70 cm he has worked HB9Q and N9AB with 2 x 9 w/ M2 yagis and 100 W from a 2 x G17B PA using JT44 and JT65B respectively. On 23 cm he has worked OE9ERC and on 18 Feb DJ9YW on JT65B with a 3.8 m dish and OK1DFC septum feed, but only 10 W PA. He also had a partial with K2UYH in Feb. Lee's moon window is limited at lower elevation by trees. [In last month's NL the was a report on ZS5Y, who is also QRV on 70 and 23 cm EME. Derek has a 3.7 m dish and 60 W on 23 cm. Lee web page was mistakenly referenced at the end of ZS5Y's report].

**K2UYH:** I was QRV on 12 Feb on 1296 for a JT65C sked at 1700 with ZS5Y. I received nil, but worked at 1738 F1ANH (55/55), 1745 W2UHI (55/55) and 1751 SM2CEW (56/56). I tried again the next day (13<sup>th</sup>) with ZS5Y with the same results, and worked at 1723 LA9NEA (54/55) and 1758 OH6NVQ (54/55) on sked for initial #234\*. During the AW I QSO'd on 70 cm on 18 Feb at 2315 G4ERG (54/54), 2340 N9AB (55/55) and 2354 UA3PTW (55/55), 19 Feb at 0010 QRZ (?), and 0050 NC1I (55/56). The next day I operated the SSB contest with Bob, N4HY. We QSO on 19 Feb at 2140 OZ6OL (54/55) JO, 2151 G4CCH (55/55) IO, 2157 SK0UX (55/54) UO, 2200 K9SLQ (55/55) EN, 2207 OE9ERC (57/56) JN, 2212 F6KHN (56/55) IN, 2221 GW3XYW (55/54) IO, 2231 ON7UN (56/55) JO, 2240 LX1DB (58/55) JN, 2253 OZ4MM (57/55) JO, 2257 K5GW (57/56) EM, 2306 K0YW (55/55) DM, 2310 K5JL (55/55) EM, 2324 HB9SV (55/55) JN, 2328 K4QI (55/55) FM, 2342 HB9Q (55/53) JN and 2353 W7BBM (55/55) DM, and on 20 Feb at 0015 N2IQ (55/55) FN, 0032 G3LTF (57/56) IO, 0056 VE6TA (55/52) DO CW-SSB, 0123 WA6PY (55/55) DM, 0234 KL6M (44/9) CW-CW and 0611 N7AM (54/55) CW-CW. My score in the contest was  $(20 \times 2 + 1) \times 10$  for 410 points. I tried on 20 Feb with ZS5LEE using JT65C on both 70 and 23 cm. Calls were copied both way on 23 cm, but due to a software glitch I had loaded the wrong call and thus we did not complete a QSO. On 70 cm Lee copied me, but I heard nil probably due to a combination of my polarization rotator being frozen and the very high noise level. I also tried several JT65C skeds with K3MF with nil results, but did work on 432 on 26 Feb at 0320 WA4NJP (55/55) and on 27 Feb at 0430 RK6MC (44/9) for initial #690\*. I will be traveling during the AW in March and thus will not be available for skeds during the prime weekends.

**NETNEWS BY G4RGK (BASED on K1ROG's Netnotes):** W2UHI worked K0YW, ON7UN, F1ANH and K2UYH during the Feb pre AW on 23 cm. NA4N is making progress on combining cavities for 1296 and is hoping for 600-700 W out. W2DRZ was not QRV in Feb due to snow in his dish. RN6MT is working on making a new antenna and will be QRV in the spring from KN97In. JA6AHB could be on for the EME SSB Contest. JA6CZD was not QRV for the SSB Contest either due to problems with his dish's elevation drive. Shichiro hopes to be QRV again soon. ON4AME's email address is now [ON4QX@pandora.be](mailto:ON4QX@pandora.be). ON4ANT is now [ON4IQ@pandora.be](mailto:ON4IQ@pandora.be). [ON4AME and ON4ANT are planning to operate from St Martin (FS and PJ7) on 2 m EME. Maybe someone could get them to consider 432 operation as well?] ZS6AXT. Ivo also has a new e-mail address [zs6axt@global.co.za](mailto:zs6axt@global.co.za). W9IIX was not QRV on 23 cm for the Feb AW due to loss of TX in his xvtr. WA9FWD was on 2304 calling CQ during the Feb AW. Hr heard echoes ok, but no takers. FR5DN wants to become QRV again on 70 cm EME and is looking for 8 yagis. UT2EG

is located in KN67pw. Vladimir is running a 16 x 17 el yagis array with mechanical rotator ( $\pm 90$  degs) and GS35B PA. K5SO reports steady progress in NM and now has readout in shack, but has not yet mounted his 28' dish on the tower. SM3AKW had damage to his antennas in a recent winter storm. KY5R will be picking up a 12' dish in the near future and looking for parts and info on EME. MOEME is moving his 100 W brick to his antenna to improve performance. He has heard signals but has had no QSOs yet. RW1AW is now in KP50da and has 8 yagis on 70 cm, but is not QRV yet.

**FOR SALE:** LU8EDR has a K2AH 4 x 7289 cavity PA for sale for \$US500 and 6 new 2C39Bas available in original boxes U\$30 each. Contact Daniel at [lu8edr@uolsinectis.com.ar](mailto:lu8edr@uolsinectis.com.ar). W5GLD, Richard [Richard.Ruhl@student.oc.edu](mailto:Richard.Ruhl@student.oc.edu) has caught the EME bug from K5SO and is looking for a large dish (> 4 m) and a PA for 1296. K7LNP has for sale a Coaxial Dynamics Wattmeter that uses Bird elements with a super big meter. It is in excellent shape, but does not include a manual for \$US140 shipped in SA. Contact Pat at [ka9lnp@prodigy.net](mailto:ka9lnp@prodigy.net). K5YWL has 70 cm Henry 3004 [8938] PA available. He is located in AR and asking \$2000 - pick up only. Contact Elmo at tel 870-420-3937. VK4AFL [thenton@bigpond.net.au](mailto:thenton@bigpond.net.au) is looking for a 1296 VE4MA feed. HB9JAW [hb9jaw@bluewin.ch](mailto:hb9jaw@bluewin.ch) has available 4 HP432 power meters (tested). The price will be about EUR160.

#### **XI ITALIAN ARI EME 2004 CONTEST RESULTS BY MARIO, IANP:**

The 11th EME contest is now history. Its modes remain limited to CW & SSB, notwithstanding the technical progress for which we must thank K1JT, we feel that operator ability must remain the main resource. The situation is evolving, during the first Italian EME meetings it had been forecasted by Andrea IW5BHY (who had built his first DSP systems in 1990/91) that in the near future it would be possible to have a QSO with a 16 element antenna and 100 W. At our last EME meeting IOFTG has shown the possibility of SSB QSOs at low power levels. When the present situation will have evolved giving new advanced possibilities but still with the operator's intelligence as the key factor, and without assistance by Internet, we will be happy to add these new modes. At present some operators make inappropriate use of information exchanged via the web. On 11/12 Sept 2004 the propagation was very bad due to polarization rotation in 432. Participation was penalized by the small number of US stations who took part. Fortunately all the rest of the EME world takes active part to the contest. Europe is now the world center of EME activity and new stations are emerging.

<b>432 MHz</b>	A) 1° JA9BOH	2 - 20	4 x 2.8 mt. (11.2 m.)
	B) 1° SK0CC	2 - 20	8 x 2.5mt. 17 el. (20 m.)
	B) 1° DL7UDA	2 - 20	4 x 21 el. DK9ZB (21.2m)
	B) 3° EA3DXU	1 - 10	2 x 38 el. M2
	C/D) 1° S52CW	8 - 80	8 x 7.7 WL DJ9BV (43.2m)
	C/D) 2° SP2JLW	7 - 70	8 x 32 el. DJ9BV
	C/D) 3° JA6AHB	4 - 40	Dish 7 m.
	C/D) 4° S53J	1 - 10	4 x 28 M 9WL
<b>1296 MHz</b>	1° G4CCH	17 - 3223	Dish 5.4 m
	2° VA7MM	5 - 50	Dish 3 m

No log was received for the higher bands, though there was activity.

#### **Italian stations:**

<b>432 MHz</b>	B) 1° IZ2FOB	1 - 10	4 x 21 F9FT
	D) 1° IN3JJI	1 - 10	8 x 33 el.
<b>1296 MHz</b>	1° IK3COJ	6 - 60	Dish 3 m.
<b>10 GHz</b>	1° IQ4DF	6	2 60 Dish 7 m
	2° ISPPE	4	2 40 Dish 3 m
	3° IK2RTI	2	2 20 Dish 4.8 m

The winners on 432 & up were JA9BOH, SK0CC, DL7UDA, S52CW, G4CCH, IZ2FOB, IN3JJI, IK3COJ and IQ4DF. Prizes will be given at the next EME meeting, at the Hotel Joseph in Marina di Pietrasanta (LU) on 30 April/1 May. Stations not present will be sent their prizes and certificates by mail. Tnx to all for participating in the contest. The XII Italian EME Contest will be 17/18 Sept.

**FINAL:** I must admit I am a little disappointed by the controversy about the digital modes (DM) on EME. As a JT user, some may see me as biased and on the wrong side. I can assure you that I am as concerned as anyone in maintaining the integrity of a QSO, and in this regard support G3LTF's effort to gain consensus on what constitutes a QSO in this age of digital communications. But I also see the real issue as how to increase EME activity on 432 and above!

The dates for the 2005 ARRL EME Contest have still not been set. Dates receiving the greatest response were 15/16 Oct and 12/13 Nov for the regular (dc) part and 19/20 Nov for the microwave part. But support for these dates was far from unanimous. There still may be time to express your view - contact Joel, W5ZN.

There is more to say, but it can wait until next month. Please keep the new and technical info flowing. I cannot be active during the AW, but will try to be on the moon some of the off weekends. 73, AI - K2UYH