

432 AND ABOVE EME NEWS DECEMBER 2007 VOL 35 #12

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CONDITIONS: The Oct ARRL EME Contest weekend produced some incredibly good conditions on both 70 and 23 cm. It also produced some very unusual conditions - see WA6PY's LDE report. Activity was also good especially on 1296 where the band sounded like 20 m at my QTH. Let's hope Nov yields a repeat of Oct.

ARRL EME CONTEST RULES: Very few folks seem to understand the new contest rules, in particular the fact that you can work a station twice, once on JT and once on CW to gain extra points if you are operating multiple modes.

HIGH SCORES: I probably do not have the full picture, but based on the reports it appears that on 432 for CW QSOs DL9KR has the lead with a score of 56x30. OH2PO has a greater overall score with 66x31, but only 53 of these were on CW and 16 were on JT. HB9Q also has a total score greater than Jan, 60x32, but no break out of CW and JT. On 1296 OK1DFC is well ahead with 70x34, G4CCH is second with 64x32 on CW and a few on JT. G3LTF is third with 60x35, followed by OK1CA with 58x32.



OK1DFC's 10 m dish with new 1296 feed

DXPEDITION NEWS: P43L p43l@arubanet.com in Aruba should be on 1296 in Nov as reported last month. Everything is fitting in place. Lisandro, P43L has a 12' dish. OK1DFC is supplying a Septum feed, I will bring my TS2000X and 200 W SSPA and LNAs. WD5AGO is supplying extra LNA as backup. Skeds are for the 24th, 25th and 26th (Eur window only) - see the end of this newsletter (NL). I will arrive on the 20th and hope to be QRV earlier than the 24th. (Please note that I am going to the island for business reasons and thus can not devote a 100% of my time to EME). I should have access to e-mail and will let folks know via e-mail if I can be QRV sooner. Operation will be on 1296.045. I will operate primarily CW (2.5 min), but will switch to JT65C upon request. If I don't hear a station in the first 10/15 minutes of a sked, I will call CQ. Please do not call on frequency during sked times unless you hear my CQ. I want to keep things simple and will try to always operate on the same frequency. I also plan to bring a feed for 70 cm and expect to take a 100 W SSPA with me. If 23 cm works well and time is available, I will try 70 cm on the 26th. If there is not enough time, I will leave the 70 cm equipment and try to set up Lisandro for 432 EME operation after I have gone. A real bonus is that Lisandro is interested

in getting permanently setup for EME. He already has a 736R with 1296, so all he will need is a PA.

DL9KR: Jan bruinier@t-online.de is recovering well from his surgery and was active during the Oct contest weekend -- Perige alone could not explain for the enormous signal strengths observed during the Oct part of the contest. The well defined polarization, which was horizontal throughout the weekend, may have prevented QSOs with horizontally polarized stations in NA due to geographical offset. KE2N and KORZ were just a shadow of their usual strength. The absence of fast libration vs. tens of seconds long QSB periods was something special. However, it all meant lots of fun to work old friends and a couple of new ones. I'm not entering the tiresome discussion about modes and contest rules, but I do think that if this contest enhances activity, so be it. I worked on 27 Oct UA3PTW, SV3AAF, K1FO, G4RGK, DL1YMK, I1NDP (loud now), RW3PX, UT2EG, UT5JCW, VE6TA, K2UYH, W8TXT, K1JT (Joe on CW?) [same as K2UYH], SM3BYA (ragchew), K4EME, OH2PO, DF3RU, HB9Q, SP6JLW, KORZ, KE2N, KL7HFQ, OK1TEH, K1RQG (nice to have him back on 70 with a big signal), IK2RTI for initial #863, DL5FN, JA0TJU #864, SM3AKW, JA9BOH, KL6M (loud), IK6EIW, PE1ITR, OZ4MM, VK4AFL, SV1BTR, RA3EC #865 KO82, I5YDI #866, G3LQR, UT3LL, JH4JLV, YO2IS, G3HUL, DL7UDA, SM2A and F6APE #867, and on 28 Oct G3LTF, WA6PY, DL7APV, OE5JFL, K3MF, VK3UM, I5CTE, DK8VS, JA6AHB, JA5NNS and JA0TJU dupe. Where were the S5s? I will be looking forward to more fun in the 2nd part.

G3LTF: Peter g3lft@btinternet.com reports the contest weekend was very good one with lots of activity on 1296 and quite a bit on 432 as well -- I made 60x35 on 1296 and 32x21 on 432 and got 3+2 initials. If the WX holds up for the final weekend in Dec, I hope to add to these, especially on 432. Condx were good and on the evening of 28 Oct the moon must have been at a libration minimum because on both bands I experienced fading on the JA and VK signals that is best described (by IK2MMB) as being rather like Es; abnormally long periods of high signal and then sudden deep fades. I know that several others noted the same conditions. Before the contest started I modified my 1296 feed by refitting the "super VE4MA" choke that I had tried previously with 0.5 dB sun noise increase, but this time I retuned the polarizer screws as well. I also reduced the TX line loss in the shack a little. On 27 Oct I started on 1296 and worked RA3AQ, G4CCH, LA9NEA, ON4BCB, OK1DFC, RW1AW, N2UO for initial #262, K4QI, SK0UX, SM4DHN, SP6JLW, OK1KIR, K5JL, OH2DG, IZ1BPN, LA2Z, SM5LE, ES5PC, N9JIM, SM3AKW, K2DH, K0ALL #263, K9SLQ, WA6PY, OE5JFL, K7XQ #264, IK3COJ, WW2R, SP7DCS, VA7MM, DF3RU, N00Y, DL4MEA, DL1YMK, and HB9Q. At 0600 I changed the feed and went on 432 until moonset working OH2PO, SM3BYA, OE5JFL, SM3AKW, SP6JLW, K1RQG, DL1YMK, W8TXT, KL7HFQ and K4EME. At moonrise I was back on 1296 and worked VK4AFL, DL4DTU, OZ6OL, JA8ERE, JA6AHB, F5JWF, RD3DA #265, JR4AEP, SM3LBN, JA4BLC, IW2FZR, and G3LQR, then I changed the feed to 432 again and worked FR5DN, UA3PTW, RW3PX, I1NDP, SM2A and DL7APV. Then on 28 Oct, continuing on 432, SV1BTR, DL9KR, K1FO, UT2EG, DL7UDA, KL6M, KORZ, HB9Q and DL5FN for initial #405. At 0400 I went out to change the feed to 1296 and somehow forgot to put the securing pin in the access tower and as I climbed it came back on top of me. Fortunately I only sustained a scalp wound and a lot of bruises; a very "senior moment"!! I was able to continue and worked OK1CA, K1JT, K9BCT, OZ4MM, VE6TA, IK2MMB, AL7RT, then back to 432 for moon set adding K1JT and a near miss with PE1ITR. On the last pass I did several feed changes and on 1296 worked VK3UM, JF3HUC, LX1DB (SSB), JA8IAD, G4DZU and EA3UM and on 432 DF3RU, JA5NNS, G3LQR, JA9BOH, JA0TJU #406, I5CTE, JA6AHB and G4RGK. Stations heard and not worked on 1296 were SV1OE, JA4LJB, PA3DZL, JH5LUZ, WD5AGO, W2DRZ and I5MPK, and on 432 KE2N, WA6PY and JH4JLV. On 4 Nov I was on 1296 and worked I5MPK, LA9NEA and SM2CEW.

G4RGK: Dave g4rgk@btinternet.com was active during the Oct contest weekend on 432. - I operated CW only as I had limited time because of other

commitments. Conditions for the most part were great. I worked FR5DN, DL9KR, K1FO, UA3PTW, I1NDP, HB9Q, OH2PO, K1JT, SM3BYA, DL1YMK, SM3JQU, VE6TA, RW3PX, DF3RU, K1RQG, KL6M, OZ4MM, SV3AAF, UT2EG, JH4JLV, OE5JFL, UT5JCW, DL7APV, W8TXT, DL7UDA, K4EME, VK3UM, G3LTF, JA5NNS, JA6AHB, SV1BTR, SP6JLW and SM3AKW. Someone called at the end of the contest, but they only once and I could pull the call out. I wonder who it was. Gottaways were JA0TJU, JA9BOH, IK6EIW, JS3SIM, ISCTE, DL5FN, KORZ, YO2IS and KL7HFQ. I hope to work these guys in the next weekend. I also hope to try and get on 23 cm, but the logistics are difficult, so it will probably be either one or the other.

IK3COJ: Aldo ik3coj@fastwebnet.it achieved his best results ever -- Good conditions help me achieve my best result ever in only one contest weekend. I ended with 38 QSOs and 5 new stations. Heard, but not QSO'd were VE6TA, N0OY, K2DH, SV1OE, JF3HUC, JA8ERE, JA8IAD and JA6AHB. Mister Murphy forced me to work with only one tube (200 W). I Hope for equally good activity in the next contest leg.

IK5WJD: Alex giusti.alex@tiscali.it sends news on his 23 cm EME contest operation -- I was active on 23 cm for the first time since Nov of last year. Back then I contacted 3 stations (HB9BBD, SM4DHN and K5JL) with my old 23C9 water cooled cavity with about 60 W out. I'm very happy to be back on 23 cm EME and now have 200 W HB SSPA with a 3 m solid dish (150 W at a Septum feed) and 0.5 dB NF LNA. During the first leg on 28 Oct I had 2 random QSOs with SM4DHN (539/569) and OK1CA (529/529) for initial #4. On Sunday morning I tried with K9JIM, I received their acknowledgement of my call, but the QSO was not completed due to a problem at my end.



IK5WJD's 3 m dish with 1296 feed

JA9BOH: Kimio ja9boh@yahoo.co was QRV on 432 during the Oct leg of the ARRL EME Contest -- I worked on 27 Oct between 1742 and -2130 with water-soaked TX cable KL6M, UA3PTW, OH2PO, DL9KR, OZ4MM, I1NDP, HB9Q and DL7APV. On 28 Oct I changed to a thinner but TX cable and was QRV from 1048 to 1330. QSO'd were K1RQG, JJ1NNJ, K0RZ, JA6AHB and K1FO, and between 1913 and 2230 VK3UM, DF3RU, RW3PX, G3LTF, JA5NNS and SV1BTR. In all 19 QSOs were made with only my short (2.8 m) 4 yagi (V-pol) and 800 W in the shack. I will be QRV in Nov with better TX coax.

K1JT: Joe k1jt@arrl.net and I (K2UYH) partnered in the ARRL contest -- I operated 432 and 1296 from my QTH assisted by KC2T, while Joe operated 2 m from his QTH. Because K1JT QSOs were made from my QTH, they do not count as initials, if you have previously worked K2UYH. We QSO'd on 27 Oct on 432 at 0103 DL9KR (559/559), 0121 UA3PTW (579/5859), 0130 G4RGK (559/559), 0137 HB9Q (579/579), 0147 RW2PX (559/539), 0208 I1NDP (569/559), 0214 OH2PO (589/559), 0229 VE6TA (559/579), 0236 UT2EG (559/339), 0255 SP6JLW (459/559), 0303 DL1YMK (559/549), 0317 K1FO (569/569), 0320 W8TXT (559/559) and 0330 KE2N (459/459), the switched to 1296 at 0420 ES5PC (569/559), 0426 DL4MEA (559/569), 0430 RW1AW (559/559), 0443 OK1KIR (559/559), 0457 SP7DCS (O/O), 0500 RA3AQ (559/559), 0513 G4CCH (569/579), 0518 SM3AKW (569/569), 0527 N2UO (559/559), 0533 OZ6OL (559/559), 0537 N9JIM (589/589), 0539 SK0UX (569/569), 0547 K7XQ (559/569), 0601 HB9Q (579/559), 0610 VA7MM (559/559), 0620 WD5AGO (549/559), 0630 WW2R (549/559), 0642 WA6PY (559/569), 0704 AL7RT (559/559) and 0711 K9SLQ (599/589), back to 432 at 0804 K4EME (559/559) and 1015 JA6AHB (559/569), and on 1296 at 1120 VK7MO (-21DB/-15DB) on JT65c, and on 28 Oct on 1296 at 0148 OK1DFC (569/559), 0156 N0OY (569/559), 0203 SM3LBN (559/559), 0216 F5JWF (559/579), 0227 K4QI (569/579), 0229 OK1CA (579/589), 0240 ON4BCB (569/569), 0240 SP6JLW (559/559), 0250 LA9NEA (569/579), 0255 RD3DA (559/579), 0301 K0ALL (559/559), 0310 IZ4BPN (569/579), 0321 RW1AW

(579/589), 0327 OH2DG (569/579), 0332 W5LUA (559/559), 0334 SV1OE (549/559), 0344 LA2Z (559/559), 0406 OE5JFL (579/569), 0412 SM4DHN (569/569), 0422 DL1YMK (559/559), 0432 OZ4MM (579/579), 0515 W2DRZ (559/569), 0522 G3LTF (559/579), 0535 IK3COJ (448/559), 0542 DL4DTU (449/569), 0612 IK2MMB (559/579) and 0618 IW2FZR (559/559), on 432 at 0653 OE5JFL (569/569), 0700 DL7UDA (449/559), 0707 DF3RU (569/579), 0711 WA6PY (559/559), 0722 K3MF (559/559), 0735 KL6M (559/569), 0737 G3LTF (559/579), 0744 DL5FN (559/559) and 0825 PE1ITR (559/559), on 1296 at 1105 JA8ERE (559/569), 1111 JF3HUC (559/559), 1115 JA6AHB (559/569) and 1129 JA8IAD (559/569), on 432 at 1154 KORZ (559/559) and on 1296 at 1245 VK7MO (-14DB/-19DB) on JT (DUP) for a score on 70 cm of 26 x 20 on CW and on 23 cm of 51 x 26 on CW and 1 x 1 on JT. Although I will be in Aruba operating P43L on 1296 during the Nov leg of the contest, K1JT should be QRV on 70 and 23 cm.

K1ROG: Joe k1rqg@aol.com is now back on 432 as well as 1296 -- I was on 70 cm EME on 20 Oct for the first time in many years and was pleased to hear random activity even with the moon at -17 dec. I worked I1NDP, W8TXT and KORZ. I heard K3MF with nice signal, but missed him due to my QSO with Bill. I was able to change the feed and the equipment in the shack in 45 minutes and hope to be able to do it in 30 minutes with practice. During the Oct contest weekend. I missed my first 4 hours of moon as I was traveling back from helping WD1V get setup for 1296 EME. I got on around 0315 on 70 cm and had a ball. I worked 22 stations the first night and added 10 more the second night for a total of 32 on 432. Get a ways included DL7APV (569) and KE2N.

K2DH: Dave's k2dh@frontiernet.net activity on 1296 during the Oct contest weekend was limited -- I was on only for the first pass of the contest and had mixed results. I didn't have the high power running in time and didn't solve my azimuth motor intermittency (the new brushes had not come). I did replace the Az/EI sensor lines with shielded cable and bypasses all over the place, and believe I've gotten the noise off the lines, but the Az/EI readouts still bounce around like crazy. All said, I did get on at my moonrise and had a great time till I went to bed at about 0430. I worked 16 stations, including 5 initials with K9SLQ, RA3AQ, SK0UX, ES5PC and N9JIM. I heard and called many others including G4CCH, OE5JFL, VA7MM, SV1OE and IZ1BPN. I got up for the Asian window, but had problems with my azimuth motor. After I got it running, I had difficulty finding the Moon. I guess the tracking still needs work over on the western side. I finally gave up because of the intermittent motor and went back to bed. I only heard N9JIM on SSB. I was not on for Eur window of the second pass because of family commitments, but was on for the Asian window. I QSO'd a few more including VE6TA and VK3UM. I ended with a score of 18 X 14 in four hours. I was also on 3 Nov and I worked K5SO, IW2FZR, G4CCH, WB2BYP, SM2CEW and HB9BBD. I also heard SV1OE very well. K5SO was the loudest. I should have everything fixed for the Nov weekend and hope to be more active then with higher power as I now have my TH-328 PA working.

K3MF: Wayne k3mf@aol.com was only QRV on 70 cm for the second day during the Oct contest weekend -- I was only able to be QRV on the second pass due to work commitments, but made 10 QSOs and an initial. I also had a late start due to blockage by my house and trees of the rising moon and ended with only 5 hours of operating time. QSO'd were HB9Q (CW and JT), OH2PO (CW), KORZ (CW), KL6M (CW), OE5JFL (CW) for initial (#), DL9KR (CW), K1JT (CW), DL7APV (CW) and PE1ITR (JT). My present system is 8 x 25 el yagis and 800 W.

K4EME: Cowles candrus@rica.net was active on 432 during the Oct contest weekend but had problems -- The first night I worked 13 stations, but missed I1NDP, DL1YMK, and KE2N. The second night early on I heard a lot of the same stations I had already worked. I did copy DL5FN very well, but did not get his attention and then lost time fixing the time change update in Windows. I did work G4RGK right before my elevation jack locked up. I heard another station try hard to work me, right after the elevation stuck. Without tracking, his signal was just too weak to copy. I sprayed some WD-40 into the jack, but could not get it operational. I think possibly the 4" of driving rain this week may have worked its way into the system, and had to QRT for the night. I am hoping for better luck in Nov.

K4QI: Russ k4qi@aol.com was active on 1296 in Oct -- I got on 1296 for first time since the KH6 expedition. During the contest weekend, I made 41 QSOs with rather limited operating time. I worked: SM4DHN, LA9NEA, RW1AW, G4CCH, SP6JWL, G3LTF, N2UO, K5JL, SM3AKW, OZ6OL, OH2DG, RA3AQ, OK1DFC, SK0UX, ES5PC, K2DH, N9JIM, WA6PY, DL4MEA, IZ1DPN, K7XQ, N0OY, K0ALL, K9SLQ, RD3DA, SM3LBN, VE6TA, ON4BCB, K1JT, LA2Z, WD5AGO, W7BBM, F5JWF, K9BCT, IW2FZR, OK1CA, VK3UM, JA8IAD, JR4EAP, JA4BLC and JA4LJB. I will probably miss the second weekend due to being at our mountain house for Thanksgiving.

K5JL: Jay k5jl@hughes.net did get on a bit for the contest in Oct. He was only on on 1296. During the first pass he worked quite a few, but did not hear any F or D stations. Jay and says he was looking for new ones and only found RA3AQ. The second pass he was only active during his western window and briefly heard K2DH. Jay recommends that smaller stations call CQs more often.

K5SO: Joe k5so@valornet.com reports -- I have now completed construction of a new 1/8" wall cavity for my 23 cm TH-347 amplifier (converted commercial VHF-UHF TV translator). Initial performance results are encouraging with stable output at 1.5 kW for long transmission periods. The cavity does not seem to get warm even after extended transmission periods suggesting that the resistive losses in the cavity are not excessive. Details of the modifications and photos are posted at www.k5so.com/TV_translator_mods.html. I'm thus once again QRV on 23 cm EME and worked on 3 Nov at least 11 stations - there was a lot of activity.

K6DV: Gene [Does anyone have an e-mail address for Gene?] reports that CA fires came close to taking his Palomar Mountain home -- Strong easterly winds began blowing Sunday 21 Oct and two fires started in San Diego County were soon out of control. Three more fires started on Monday. One was at the base of Palomar Mountain. I was ordered to evacuate Tuesday morning as the fire began burning up the mountain. The wind died down Wednesday and shifted direction so backfires were lit. They burned down the mountain and when they met the main fire, there wasn't anything left to burn so that the fire burned itself out and saved the homes on the top of the mountain. I was allowed to return on 31 Oct when the fire was under control and the power utility moved a large portable generator up the mountain as a temporary power supply until the burned power poles can be replaced. The largest fire burned 200,000 acres and 1,000 homes. It burned into the Rancho Bernardo where WA6PY lives. [Fortunately Paul's home also escaped the inferno and is ok].

K6JEY: Doug doughelen@moonlink.net is setting up for 432 EME again and hopes to make some contacts during the contest. He is using 4 x 25 el K1FO yagis, 1 kW PA and a 0.4 dB NF LNA. During the first weekend he mostly listened and had some problems with antenna pointing and his PA. Doug will be looking for QSOs in Nov on both CW and JT.

K7XQ: Jeff k7xq@secure.elite.net was QRV in the contest in Oct on 1296 (and 144) working all modes -- I worked on 1296 CW SM4DHN for initial (#), K9SLQ, N9JIM, K4QI (#), OK1DFC, G3LTF, LA9NEA, HB9Q, OZ6OL, RW1AW, K1JT, G4CCH, WA6PY, JA4BLC (#), JA6CZD (#), JR4AEP (#), OK1CA, OE5JFL (#), RW1AW, OZ4MM, IW2FZR (#), DL4MEA (#), OH2DG (#), AL7RT (#) and N0OY (#), on SSB N9JIM, and 1296 JT N9JIM, WW2R (#), VA7MM (#). The new 3 m dish is working exceptionally well. Signals on 1296 and 2304 are extremely loud and TX echoes are now about 20 dB S/N. I did not get on 432 because I got home from work late Friday and never had a chance to put up the pair of modified M² XPOL 9 WL yagis that will eventually be part of a stack of four. I plan to be on again in Nov with 432.

K9BCT: Randy k9bct@aol.com reminds everyone that he is operating from Florida for the multiplier. During the Oct contest weekend he worked 26 X 21 with 5 initials. The first night was a bust, but signals were great the second night. N9JIM was (599)!

LX1DB: Willie wbauer@pt.lu has been tied up at work (putting a new ATC system into operation at Luxembourg airport), but did find some time for very limited operation on 1296 and worked 28 stations in 2 hours. He hopes to be more active in Nov, but notes that he has problems with noise on 70 cm. On 24 GHz Willie worked DK7LJ on 3 Nov for an initial. The QSO took 10 minutes. The Doppler was 48 kHz and the signal was 300 Hz wide.

M0EME: Paul m0eme@qsl.net was on over the Oct contest weekend on 432-- Friday night the signals were so clear. DL9KR was the loudest I've ever heard him. I heard about 6 stations, but did not try to TX. Things were different on Saturday and I was struggling with the CW copy. I TX'd this time and CWNr OH2PO and DL9KR many times. I found HB9Q much louder DL9KR. I called CQ with no luck and gave up about 5 am. I was feeling tired and a bit disappointed, but had a lot of fun and was pleased with my system. I feel I need to improve my QRP by ~ 10 dB

N0OY: Pete petesias@yahoo.com (formally WB0DRL) is becoming active again with his big 28' dish and was QRV during the contest in Oct on 1296 -- I found a lot of activity on 23 cm the first night, but lost my driver after 14 contacts. Activity was all the way up to 1296.040. I did make a couple of contacts on very low power. Tnx to those who stuck with me.

N4BH: Pat pat@n4bh.com in EM95 is interested in trying some on the horizon 70 cm EME skeds with a 13 WL yagi and 700 W. He is presently QRV on 2 m with a fully tilttable array.

N9JIM: Jim n9jim-6@pacbell.net reports on Jamesburg EME results for weekend 1 of ARRL International EME Contest -- We did very well. On Thursday we installed a new crossed yagi feed for 144. It works very well. On Friday, we installed a new feedhorn for 1296. It is indeed bigger than the old horn and extends out beyond the rain window. Echo tests showed a significant improvement with a very close to the predicted gain. We now are getting about 50 dB of gain from the dish and feed system. We operated the whole contest weekend and exceeded our record for number of contacts on 1296 in a single weekend with more than 70. Signals were so strong on 1296 that we worked many stations on SSB. FM echoes were even full quieting at times. We all spent some time doing some chores on Saturday and Sunday to help clean up the place, and made a few improvements. We are hoping to have access again for the 2nd half of the contest on Thanksgiving weekend, but we will have to see if the dish is available.

OH2PO: Jukka (OH6DD) jukka.sirvio@vesatel.fi reports on 70 cm contest activity by his group -- I'm happy to report that OH2PO was on again in the contest. Operators were Jukka (OH6DD), Jyrki (OH2HYT) and Matti (OH2PO). Our 1st leg score is 66x31 in multiop/432/mixed/unassisted class. We worked 53 stations on CW and 16 on JT65b. Three stations were QSO'd on both modes. We'd like to encourage even small stations to call CQ on JT. CU on 2nd leg!

OK1CA: Franta ok1ca@ges.cz sends news on his 1296 operation in Oct -- I was QRV on 23 cm during the second part of ARRL EME Contest, but for only 12 hours. My score is 58x32 with initials from RA3AQ, RD3DA, JH3HUC and IK5WJD to bring me to #198. I measured the noise sources on Saturday 27 Oct over quite sky: Sun 21 dB (SFU 68), Moon 0.8 dB, Cygnus A 1.5 dB, Omega M17 1.3 dB and Cassiopeia A 0.4 dB - my antenna is 10 m mesh dish with a square septum circularly polarized horn and two stage FHX35LG preamp.

OK1DFC: Zdenek ok1dfc@seznam.cz also found conditions good during the Oct contest weekend -- I was active in the Oct leg of the ARRL EME Contest on 1296. This time EU stations were very readable and there was no problem with fading or librations. But VK, KL7 and VE were a different story. When I worked VK3MU on 23 cm, signal looks like linear polarized with long and very deep QSB. Normally Doug is 559-569 with very good copy, but this time his signal went up and down. I had even more problems with VK4AFL's signal. Trevor was not as strong as Doug and the QSB was terrible. The same effect was observed on JAs, but the QSB was not so deep. I found the opposite from the USA. But when I worked AL7RT, he must have thought I was crazy. His signal was strong enough for easy QSO, but I was not able to decipher his call. Each letter was broken up into many parts. I had great difficulty in completing this QSO... And trust me, no alcohol during contest! I think something happened to the Earth's electromagnetic field. Many of the stations closer to the polls (KL7, VE, VK...) had deep QSB or slashed up of letters. AL7RT's problem was that his CW cadence was exactly in sync with the fading. VE stations had the same problem. One quite after my 2nd QRZ. I was QRV thanks to cooperated WX the whole time and reached a personal record. I have worked 70 stations and 34 multipliers. It was really great time. I heard and did not work only WD5AGO and WB2BYP. I added 11 initials and am now at #186 on 1296. N9JIM was a highlight. I worked Jim on SSB (57) the first night and (599) on CW the second night. My other SSB QSO was made with RW1AW (58) -- probably the first EME SSB QSO in the Russia language. K9SLQ was (599) on CW. The station is now my 10 m dish with new AZ and EL drivers, upgraded septum feed and FHX35LGA 0.25 dB NF LNA. My PA is a TH327 with around 1.5 kW at the feed on the 2nd night. The first night, I only had my 600 W driver.

OK1TEH: Matej ok1tehist@seznam.cz reports on his 70 cm activity in the contest -- On CW I worked DL9KR, OH2PO, PA3CSG for an initial (# - not contest QSO - sked) and CWNr were K1FO and KL6M. On JT65 I worked HB9Q (17dB/20dB), OH2PO (20dB), PA3CSG (24dB/22dB) (sked), DL7APV (22dB) and saw PE1ITR (30dB), ZS6WAV (28dB) and SM2A (26dB).

ON4BCB: Walter reports walter.crauwels@skynet.be making 48 QSOs and 26 initials in the contest on 23 cm. He QSO'd on 27 Oct G3LTF, OK1DFC, OH2DG for initial #36, G4CCH, K5JL, SM4DHN, RA3AQ #37, OK1KIR, RW1AW, SM3AKW, ES5PC, OE5JFL #38, DL4MEA, LA9NEA, SK0UX #39, IK3COJ #40, SP6JLW #41, RA3AQ DUP, IK2MMB, JA6AHB #42, JA4BLC, JR4AEP #43, IW2FZR, SM3LBN #44 and DL4DTU #45. and on 28 Oct K9SLQ #46, N2UO #47, LA2Z #48, N0OY #49, K4QI, OK1CA, VE6TA, K9BCT #50, K1JT, N0JIM #52, OZ4MM, DF3RU, VK4AFL #53, VK3UM, OZ6OL, IZ1BPN #54, JF3HUC #55, F5JWF #56, JR4AEP Dup, JA4LJB #57, JA8IAD #58, LX1DB #59 and G3LQR #60.

ON7UN: Eddy ejespers@telenet.be was not active in Oct, but will be QRV on 23 cm for the Nov contest weekend -- Friday before the Oct part of the ARRL contest, I ran into a problem with my TH327 amplifier. I decided to rebuild the complete housekeeping system. I now have installed the circuits back into the rack, and am "online" again. For those interested in the DC parameters, you can find them on my webpage: http://www.on7un.net/amp_housekeeping.htm I am using G3SEK's Tetrode boards with modifications done for higher UG1 and UG2. These are also described on the webpage.

PE1TR: Rob rob@itr-datanet.com writes on his Oct contest activity on 432 -- It was very successful contest from our location in JO21rm at the house of the parents-in-law of my friend PE1RDP. Arno had 8 x 21 el Tonna yagis that we mounted in a stacked array. We used this antenna with my GS35b PA and 0.35 dB preamp, and made 14 QSOs with 6 initials. The best was that for the first time I could hear my own echoes on the speakers! It was interesting to see how this array performed compared to the 2 yagi array at my home QTH. We worked on 27 Oct on JT65b: HB9Q, OH2PO, RK3WWF for an initial (#), PA3CSG (#), SM2A, ZS6WAB (#) and on CW DL9KR, SV1BTR (#) and I1NDP, and on 28 Oct on JT65b K3MF and on CW OE5JFL (#), DL7APV, KL6M and K1JT (#).

RW3PX: Yuri RW3PX@yandex.ru was QRV on 70 cm in the Oct part of the ARRL EME Contest. He QSO'd K1JT, DL1YMK, SV3AAF, SM2A, DL7UDA and JA9BOH.

SP7DCS: Chris' sp7dcs@o2.pl 23 cm EME contest report -- I was QRV in ARRL contest on 2 m and 23 cm random CW. I spent about half of my time on 23 cm and worked the following stations: On first moon pass OE5JFL, G3LTF, N9JIM for initial #17, K1JT, SP6JLW, K9SLQ #18, HB9Q #19 and G4CCH, and on the second pass OK1CA, RW1AW #20, SK0UX #21 OK1KIR #22, OZ4MM #23, N9JIM (dup), W5LUA #24, WA6PY #25 and OK1DFC, and on the third pass DF3RU #26, RA3AQ #27 and OZ6OL. I heard many others on 23 cm that could not complete my call sign. I will look for them in second weekend. A few days before contest I worked SV1OE on random CW for my first SP-SV on this band. Conditions were nice as I was able to hear my echoes for the first time with my small station: 3 m dish and 150 W at RA3AQ feed.

SM2CEW: Peter sm2cew@telia.com reports he was unable to be on during the Oct contest weekend -- Stormy weather prevented me from untying the dish on 27/28 Oct. I was QRV on 23 cm on 3/4 Nov and was greeted with good activity and some super signals. Peak performers were K5SO, K9SLQ, K5JL and HB9BBD, in that order. K5SO sure has his TH-amplifier cooking! I worked on the 3rd K9SLQ, K5SO, K5JL, SM5LE, IW2FZR, K2DH, G4CCY, WB2BYP and LA9NEA, and on the 4th I5MPK for initial #190, SM4DHN and G3LTF. K2DH had a good signal. I heard him with solid (559) copy an hour after we worked when conditions had improved a little. It is always a pleasure to work SM5LE on CW. Sven is doing very well indeed.

SV1BTR: Jimmy jimmv@hol.gr was active on 2 m and 70 cm during the Oct leg of the ARRL EME Contest. On 70 cm he worked 36 stations on random CW. His new 23 cm station consisting of a 3.6 m dish with feed is all up and running mechanically. The TX/RX equipment in the shack is also all finished and he only has to put the feedlines and preamp box in place. However, Jimmy does not plan to run moon tests until late Dec.

SV3AAF: Petros sv3aaf@yahoo.com operated random CW on 432 in Oct with no Internet logger help or email -- I worked the following stations DL9KR, HB9Q, K1FO, OH2PO, UA3PTW, I1NDP, K1RQG, OE5JFL, KL6M, SV1BTR, DF3RU, DL7APV, G4RGK, RW3PX, K0RZ, VK3UM, OZ4MM, JA6AHB, JA9BOH and SP6JLW. [Petros has received a 3 m dish from SV1BTR and QRO amplifier, and will be QRV on 23 cm in the spring].

VE1ALQ: Darrell ve1alq@nbnet.nb.ca despite many problems did just make it on 1296 during the Oct contest weekend -- I listen only on the first moon pass. K9SLQ was the loudest station on (599) and heard 27 stations. On the second pass I worked G4CCH with only 50 W, but then had my azimuth drive quit. This was my first QSO on 1296 in two years.

VE3KRP: Eddie eddie@tbaytel.net was on the moon on 1296 during the Oct contest weekend. He reports lots of QRM the first night and QSO'd K5JL, G4CCH, N9JIM for initial #18 (CW to SSB), SM4DHN #19 and WA6PY #20. The second night Eddie added eight more and initials with OH2DG #21, OE5JFL #22 and SK0UX #23.

VE4SA: Shawn ve4sa@rac.ca was listening on 23 cm during the Oct contest weekend. He has a 3 m dish, but no TX yet. He heard several Eur and a few USA stations. He hopes to be QRV soon with a single 7289 PA. He also has a Spectrian amp for 13 cm.

VE6TA: Grant ve6ta@telusplanet.net was on 432 during the first night of the contest in Oct and worked about 20. The second night he was on 23 cm and worked 41 and 3 new initials. (Grant was also on 2 m with a single yagi). Before the contest, he worked on 70 cm UT5JCW and K1RQG for new ones. Initials on 23 cm were Russian and Japanese. Grant reports he was at Microwave Update and met lot of EMEers there.

VK3UM: Doug tikaluna@bigpond.com had problems with wind that limited his operating time during the Oct contest weekend. He was unable to operate on Saturday, but did manage on Sunday about 20 minutes at moonrise and 2½ hours on moonset. Doug made 49 QSOs on 70 and 23 cm though "just plain hard work"!

W0DRL: Al al.tyler@sbcglobal.net sends news of his plans to return to 432 EME -- Its been a long time since we worked you on 432 EME ... about 34 years! I just built up a 120 el yagi array. It is not quite finished, but is doing a good job. I am only running 185 W, but already worked super station HB9Q and got a good report from him. I heard a number of European stations without using an antenna mounted preamp. I hope to get a preamp going of some sort, but more importantly I need more power. I use to run a pair 4CX250Bs back in the early 70's, but it is now gone. If you happen to know of someone who has for sale a 432 amp with around 600 or 800 W in good working order, let me know. I may have to put something together. Let me know a good source of parts place where I might get some of this stuff. I am now 80 years old, still living here in the country and having lots of fun putting the 8 x 15 el yagis together.

W5LUA: Al w5luu@swbell.net was only active during the Oct contest weekend on 23 cm the second night, and worked 18 stations. Al reports that he is still working on his 24 GHz stuff in hopes of getting on soon.

W7MEM: Mark w7mem@msn.com was on 432 during the Oct contest weekend with his new 16 X 15 el K1FO yagi array. The first night he worked KL6M and K0RZ, heard DL9KR and sent QRZ K1RQG. On the second pass worked a couple of stations at moonrise, but then his camera got askew and he missed others. He is looking for skeds and will be active during the Nov contest weekend.

W7UPF: Don donsay2@cox.net had severe damage to his 3 m dish due to a combination of "monsoon" storms and a "micro burst". It has taken Don a several months to restore his system, but he is just about back in operation and should be QRV during the Nov contest weekend on 1296.

WA6PY: Paul pchominski@maxlinear.com was active in the contest in Oct on 70 and 23 cm and reports receiving some very strange echoes (LDEs) -- I managed to temporary repair damage to his antennas before Oct contest weekend and QSO'd on 432 OE5JFL, OZ4MM, UA3PTW, DL9KR, OH2PO, K1JT and KL6M. All QSOs were made with vertical polarization. For the first time I heard my echoes on 432 with my small single cross yagi - probably thanks to pæree. On 1296 I worked DL4MEA, G3LTF, G4CCH, HB9Q, IZ1BPN, JR4AEP, JA8ERE, JH5LUZ, JA8IAD, JA4BLC, JA6AHB, JA6CZD, LA9NEA, OK1DFC, OH2DG, OZ6OL, RA3AQ, SM3AKW, SK0UX, SP6JLW, VA7MM, VE3KRP, VK4AFL, K1JT, N2UO, WW2R, K2DH, K4QI, AL7RT, K7XQ, N9JIM, K9SLQ, SM4DHN, SM3LBN, RD3DA, ES5PC, N0OY, IK3COJ, LA2Z, RW1AW, DL1YMK, OK1CA, OZ4MM, OK1KIR, SP7DCS, OK1MMB, VE6TA, OE5JFL, JF3HUC and JA4LJB. I hope I did not omit or misspell any call sign. On 1296 during the JA window I clearly observed secondary echoes. These echoes were delayed about 1 sec from normal EME echoes and were on almost the same frequency, but very weak. I spent about 5 minutes listening to these echoes. They were always there. I remember similar observations about 19 years ago when I was in Stockholm, but time delay between echoes was bigger. [See K6DV's comments on the fires in Paul's vicinity].

WB2BYP: John wb2byp@ieee.org was active on 23 cm in Oct for the contest using his old dish -- see last month's report. Unfortunately he lost a preamp the first night. The second night went better and he worked a couple of new ones N9JIM [same as AD6WI] and SM4DHN. John called OK1DFC and DL4MEA with no reply. On 3 Nov he worked K5SO, K2DH and SM2CEW, and plans to be on again for the Nov contest weekend.

WD5AGO: Tommy wd5ago@hotmail.com reports on his 1296 contest activity -- We decided at the last hour to through a feed for 23 cm on the dish. It was 3 ring scalar clone of my 13 cm horn design with hybrid as it had to be short to fit at focal point. I measured about 10.5 dB of sun noise, which is 1 dB below the same dish on 13 cm. Signals were loud and packed from .010 to .030. We called many with our QRP set-up (100 W SSPA). We worked N9JIM for an initial (#), G4CCH, HB9Q (#), K1JT, K4QI, SK0UX (#), OE5JFL, OK1CA, and an extra with N9JIM (57/54) on SSB - good job guys. I find that when a large or special

event station makes it on, it gives me a little more ump to get on to work the bands instead of hibernating on one band. Heard and called were JF3HUC, JA8ERE, JR4AEP, JA4BLC, JA4LJB, JH5LUZ, JA8IAD, JA6AHB, VE6TA, K9BCT, ON4BCN, W2DRZ, OZ4MM, DL4MEA, OK1DFC, RA3AQ, SM4DHN, RW1AW, SM3AKW, WA6PY, N00Y, K2DH, OK1KIR, G3LTF and K9SLQ - very strong signal. It was fun but I do not plan to leave the feed in place long and may not be on the next contest weekend. Several types of 13 cm SSPA are showing up and people are buying them. I hope they will get the PAS in place to try 13 cm EME. A 100 W is plenty of power. I should be back on 13 or 6 cm in Dec.

WW2R: Dave ww2r_eme@g4fre.com was operated the Oct contest weekend on both 432 and 1296 - I had a late night first day. I added 4 initials and made 15 QSOs on 23 cm, but only one QSO on 70 cm. Having worked K1RQG (559/559) for initial #23 midweek, I was expecting better things. On 1296 I worked SP6JLW for a new country. Other new ones were OE5JFL, DL4MEA and K7XQ (on JT). I also worked N9JIM on JT. The second day I increased my total on 1296 by 16; initials were OH2DG - new DXCC, SK0UX, IZ1BPN, RA3AQ and IK3COJ. I ended with 31 QSOs and 11 initials on 23 cm. I heard seven on 432 but still ended with only one QSO with OH2PO. OH2PO. I called a lot on 432, but no more QSOs. CWNR were K1JT, DL9KR, VE6TA and KL6M. Heard were K0RZ, HB9Q and SV1BTR. SV1BTR had the loudest signal heard on 70 cm. On 23 cm I chased K9BCT and W2DRZ all over, but no joy. After the contest, Sunday night, I worked KL6M on 70 cm. If anyone would like a 432 sked, please contact me. Unlike 1296, the 432 system (4 x FO25 yagis, 1000 W, 0.5 dB NF LNA and g6lvb tracker) is available all the time.

YO2IS: Szigy yo2is@wa7v.ampr.org was active on 70 cm during the Oct contest weekend - I was QRV a couple of hours on 432, but had to fight with the PC and CATV noises. I QSO'd on CW OH2PO (O/O), HB9Q (O/O), DL9KR (579/559) and OZ4MM (O/O). Heard were UA3PTW, SV1BTR, K1FO, K2UYH, DL1YMK, SM3JGG [?] and KL6M - eastwards. I was running less power than before (4X150s in the K2RIW instead of the 250's), so it was harder to get thru. Conditions seemed mediocre, with no JA signals and few Ws hear. Maybe the next leg will bring better activity and luck for me. [Szigy is off 1296 until the spring].

K2UYH: I a.katz@ieec.org have little to report this past month. Most of my Oct activity was under the call K1JT and reported on earlier in this newsletter. I did take a quick break and QSO on 28 Oct on 1296 at 0216 F5JWF (559/579) for CW initial #274 and mixed #308* as I had been trying to catch Phil for more than a year. Otherwise I have been preparing for the P43L dxpedition.

NETNEWS BY G4RGK: **WD1V** is coming on 23 cm from NH. **K5PJR** k5pjr@centurytel.net has giving up on a bigger dish and now planning to put his 13' back up. **WB7QBS** is making more progress on his 70 cm array and now has all 8 yagis mounted. **SV1BTR** was QRV in contest on 70 cm (and 2 m), but is not yet ready on 23 cm. **W2UHI** was not QRV on 23 cm in Oct and is still working on system repairs. Frank is now ready to install a new W2DRZ sequencer and hopes to be QRV for Nov. **AL7RT** reports working during the Oct contest on 1296 6 initials and had a good time. **DK3WG** was not QRV on 432 during the contest in Oct due to problems with his transceiver. It is now repaired and he should be on 70 cm in Nov with an improved western window. **K0RZ** ended the Oct weekend on 70 cm with a score of 23 x 17 for 6 hours of operation. **W9IIX** hopes to be back on 1296 for the Nov contest weekend. **SM4IVE** is working on a new dish. It will be 13 m and use Aluminum ribs. **UA3PTW's** e-mail address is ua3ptw@inbox.ru. **K0YW** will not be around for the Nov contest weekend. **VE6BGT** in DO32 has a 10' dish and has acquired VE6TA's 4 tube amp. He has already heard signals off the moon on 1296 and should be QRV soon. **LZ2US** is planning on being on 23 cm next summer. **PA0SSB** may become active again on 1296. His dish seems to be working even though it is 37 years old. **HB9Q** worked on 432 60x32 and on 1296 31x20. **G4CCH** scored on 23 cm 64x32 on CW/SSB plus a few more on JT65c.

FOR SALE: **KA0Y** reports his QTH in Iowa with 40' dish is still for sale lock, stock and barrel - see <http://www.ksi-iowa.com>. Contact Ken at ken@ka0y.com. **WA5WCP** is looking for a 5 m dish. Contact Paul at wa5wcp@hotmail.com. **VE3KRP** is looking for a 13 cm feed horn. **W7MEM** has an 1800 V, 600 mA P/S built by WD5AGO for a single 3CX800 available. Contact Mark at w7mem@msn.com. **WB3EYB** reports a 3.3 m solid dish with polar mount located in Newark DE is available for the taking. Call Tim at 717-379-5083 (cell phone). [Sorry missed last month].

TECHNICAL - SEPTUM FEEDNEWS: There has been a concern that square septum feed horns do not perform as well round ones. Thanks to W1GHZ, there is now evidence that a square feed can be made to produce a symmetrical illumination pattern and excellent performance. See <http://www.ok1dfc.com/EME/emeweb.htm#Septum>.

CONTROVERSY ISSUES: We seem to live a time of controversy. 1) Last month Tonda, OK1DAI presented his summary of past ARRL EME Contest record scores. Because of the changes in contest rules the validity of this summary was questioned. As a result of the issues raised, Tonda has revised his summary and comments as follows: I have spent quite a lot of time to revise my summary of the top achievements through the 28 years old history of ARRL EME Competition. The first records table presents the top results in four main categories per band from 1978 to 2006: Single op unassisted, Single op assisted, Multi op & Non-amateur equipment. New records in the last year (2006) are highlighted by colored background. The second set of graphs presents highest QSO numbers on each band along the whole 1978 to 2006 history. The first one presents 144, 432 and 1296 progress. It is remarkable that the QSOs growth on 144 & 432 stopped about the same year, 1993, and until nowadays shows similar decline slope on the both 144 and 432 while 1296 shows slow but continuous growth. The second graph shows the QSO history on microwave (MW) in parallel with the more or less the special EME bands (50, 222 & 902). On MW, there was evidently relatively rapid growth on 13 cm during last few years, probably due to surplus equipment from PCS, GSM 1800 and especially UMTS surplus technology. A similar rise shows on 10,368. 5,760 goes up as well, but very slowly. 3456 MHz seems as yet to have still unused potential. 902 lost the business with the GSM900 mobile explosion. 222 tries to survive and 50 comes back like a reincarnation.

2) A second area of controversy is the use of a single call for multi-operator joint station entries in the ARRL EME Contest. This class of activity is provided for in the contest rules. There a strong feeling that operation of an existing station under a different call sign causes confusion (i.e. K2UYH under the call of K1JT) allowing folks to think they have made an initial when in fact they have not according to the rules on how initials are defined - see last month's NL. K1RQG has recommended that the contest rules be changed to not allow a single call to be used. I agree there is a problem. Joe and I tried to avoid it by publicizing our effort. W5LUA points out that when he and K5GW joined forces they used their own calls to specifically avoid this problem. Special calls have been used for multi-operator contest efforts for years and provide cohesiveness to the group. I did not consider our use of a common call would cause that much of a problem. We will definitely have to re-think this decision for any future joint contest activities.

FINAL: There is more sad news again this month. OK2TU who was not a 70 cm and up EMEer, but very active on 2 m EME has joined the SKs. On the good side is news that K5JL's grand son, who was shot in a deer hunting accident, is now doing well and just about back to normal.

G4RGK reminds everyone that his CW EME standings are regularly updated and can be found at <http://www.zen70432.zen.co.uk/Initials/index.html>.

The 2008 EME Calendar will be in the next NL.

That's about covers the news for this month. Pse keep the reports and technical information coming. I hope to work you all from P43L. 73 and best luck in the contest, Al - K2UYH

Skeds for NOV 24
Time 1296.045
0000z P43L -HB9BBD
0030z P43L -OK1DFC
0100z P43L -PA3CSG
0130z P43L -OE9ERC
0200z P43L -G4CCH
0230z P43L -DJ9YW
0300z P43L -DL1YMK
0330z P43L -OK1KIR
0400z P43L -LA9NEA
0430z
0500z P43L -K5JL
0530z P43L -W5LUA
0600z P43L -WW2R
0940z P43L -VK3UM

Skeds for NOV 25
Time 1296.045
0000z
0030z P43L -SM5LE
0100z P43L -OZ4MM
0130z P43L -SM3AKW
0200z P43L -HB9Q
0230z P43L -G3LTF
0300z P43L -G4RGK
0330z P43L -SM2CEW
0400z P43L -SP7DCS
0430z P43L -K2DH
0500z P43L -VE1ALQ
0530z P43L -VE6TA

ARRL International EME Competition Records 1978 till 2006

Category	Single Operator Unassisted				Single Operator Assisted				Multi Operator				Non-Amateur Equipment			
	Score	Call	Bands	year	Score	Call	Bands	year	Score	Call	Bands	year	Score	Call	year	
Multiband Overall	3,286,800	K5GW	BDEF	2006	498,400	W5LUA	EFHI	2005	3,684,400	K5GW	BCDEFGHI	2003	6,496,000	VE3QNT	BDE	1993
50 - 1296 MHz	1,532,200	K5GW	BDE	2005	621,300	EA3DXU	BD	2005	3,402,000	HB9Q	BDE	2005				
2300 MHz and Up	117,000	F2TU	FHI	2006					57,200	OK1KIR	FHI	2005				
A 50 MHz	8,000	K6QXY & K6MYC	1993	4,200	K1SG	2005										
B 144 MHz	1,920,000	SM5FRH	1999	1,393,600	RA3AQ	2005			1,563,500	KB8RQ	1999		1,554,800	VE3QNT	1994	
C 222 MHz	5,600	K9HMB	1982						3,000	WB0TEM	1982					
D 432 MHz	827,200	SM4IVE	1993	72,000	7M2PDT	2006			632,100	OH2PO	1997		307,100	OK1CA	1994	
9 902 MHz	100	KD5RO	1988													
E 1296 MHz	436,500	HB9BBD	2005	351,000	G4CCH	2006			255,600	K2DH	1997		316,000	W6IFE	2005	
F 2304 MHz	52,000	OK1CA	2006						6,400	OK1KIR	1991		9,000	SK6WM	1988	
G 3456 MHz																
H 5760 MHz	200	I6PNN & OE9XTW	1995						2,500	OK1KIR	2006					
I 10 GHz	15,400	DJ7FJ	1994						22,100	IQ4DF	2006					
J 24 GHz																

Rmks:

new record (2006)

All singles from 1978 till 2004 presented as unassisted
 1978-2003 the same original rules
 2004: (i) multiband subdivision to 50-1296 MHz & 2304 and up,
 (ii) US States & Canadian Provinces as multipliers instead of previous US & Canadian call areas
 2005: (iii) Single op divided into unassisted & assisted

ARRL EME Competition 1978 - 2006

Highest number of QSO on each band per year (any category or mode)

Yr / Band	A	B	C	D	9	E	F	G	H	I
	50	144	222	432	902	1296	2300	3456	5760	10368
1978			21		32					
1979		39			36		1			
1980		30	3		51		4			
1981		90	7		63		8			
1982		124	9		68		18			
1983		129	8		94		20			
1984		176	8		96		31	3		
1985		200			86		23			
1986		278			90		22			
1987	2	247			103		24	1		
1988	2	300			122	1	24	6		
1989		313			138		39	1		
1990	3	292			146		36			
1991		338			167		50	8		
1992		331			174		48	5		
1993	10	316			188		63			3
1994	6	324			166		71	6		14
1995		209	1		141		77	10	2	8
1996		281			143		73	8	2	9
1997	1	308			147		72	6	1	5
1998		330			138		81	14		1
1999		320			122		75	2	3	4
2000		281			118		98	14		2
2001		226			106		85	8	3	8
2002		200	2		83		63	10		17
2003		250	2		119		82	21	1	13
2004		194			95		75	19	1	15
2005	7	179			86		95	21		17
2006	6	240			76		90	27		17

