

432 AND ABOVE EME NEWS SEPTEMBER 2011 VOL 39 #9

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CONDITIONS: Despite all the vacations in Aug, activity during the 70 cm CW activity time period (ATP) was definitely up. (Because of all the upcoming contest activity, the next ATP will not be until 11 Dec from 0300 to 0500 and 1830 to 2030). There was also good CW activity on 23 cm on Saturday (the non 70 cm day). We should probably formalize the idea of using the off 70 cm ATP day for 23 cm CW at around the same time period. The most reports this month are not for either 70 or 23 cm, but for 6 cm because of the activity weekend (AW) at the end of July. The 6 cm AW was again a big success. 6 cm is becoming a very popular EME band. It has the advantage of having a common international frequency band in all regions, and it seems to be a little easier to get equipment for 6 cm than 3 cm. **The big news in Sept is that start of the ARRL EME Contest. The first weekend on 24/25 Sept** will be the Microwave EME Contest and be for operation on only 13 cm and above. Unfortunately this same weekend is also the Italian Amateur Radio Association's (ARI) CW/SSB EME contest for 144 through 10 GHz. The full rules, which are quite different than the ARRL's EME contest rules can be found at <http://www.eme2008.org/ari-eme/XVIII%20English%20EME.pdf>. The 50 through 1296 ARRL EME Contest weekends are on 22/23 Oct and 19/20 Nov. **The 7P8EME EME expedition to Lesotho (KG30uc) on 16-26 Sept appears definite.** On 432 they will have 4 x 22 el FO yagis and a BEKO 550 W PA, and on 1296 a 62 el long yagi and a BEKO PA with 400 W at the driven element. DL2NUD is one of the expedition team. The ARRL's Sept VHF Contest will be held in Sept starting on the 10th at 1800 and continuing to 0259 on the 12th (Monday Z). This contest is primarily for tropo, but also allows EME contacts and always attracts some EME activity on 70 and 23 cm. (The exchange is report and 4 character grid square). K5QE among others will be looking for EME QSOs on 70 cm – see Marshals report.

OK1CA INJURED: Franta was injured while repairing the roof of his house. He is reported to have fallen 6 m and is now in the hospital with a pelvis fracture and a damaged right leg. It appears the he will be OK, but probably out of action for at least 6 months. I know Franta has the wishes of all the EME community for a speedy recovery.



Horn antenna used by WD5AGO (R) for 1296 EME
(See Tommy's report later in this NL)

DL3OCH: Bodo's dl3och@gmx.de big news is that he is now married. He was married in May in the Philippines, where his wife is from. They are now living in Switzerland and plan to buy a house there. As a result of all the changes, he

has not been very active on EME this summer. He has been involved with the HB9Q operation and reports that they have made a lot of changes, but that they has not been much active recently. He had planned to participate in the 7P8EME dpxpedition, but now has a conflict at work that will prevent him from going. Bodo also reports that he has a new call DF8DX and will be using this call in the future.

G3LTF: Peter g3ltf@btinternet.com was on 6, 23 and 70 cm in July/Aug -- I was active on 6 cm on 30/31 July for the annual activity weekend. I think there were about 18 stations active from 4 continents. I had some trouble with my driver on Saturday, which restricted activity but I found the problem, a dry joint, in the evening. I was using a new feed, a W2IMU dual mode horn with a septum polarizer scaled from the design by N2UO. A full write up on how this was done is now at <http://www.ok1dfc.com/EME/technic/6cmfeed/g3lftdualmodeseptum.pdf>. The results were excellent: 36 dB isolation, 27 dB return loss and <0.5 dB difference in the axial ratio. The feed was only finished on the Friday afternoon before the tests. It gives me a 1.5 dB improvement in the system performance over the previous feed, mainly from restricting the illumination to a 4.4 m diameter which is the dish area covered by 6 mm mesh. Over the weekend I worked SV1BTR, OK1KIR, G3LQR for initial #25, SQ6OPG #27 and a new DXCC, G4NNS, PA7JB #28, LX1DB on CW/SSB, SV3AAF and CT1DMK. I heard and called SP6GWN and heard JA6CZD. I am now QRV again on 9 cm. I have completed the new PSU for my 9 cm PA and am operational again. I also made it back onto 23 and 70 cm. On 23 cm on 20 Aug I worked N2UO, K2UYH and IZ2DZP. I heard G4CCH, HB9SV and F5SE/P. But my operation was restricted as sadly I am still having flashover problems in my 6 tube PA and was only running about 300 W at most at the feed. I am going to do a full rebuild of the amp in case the flashover is not in the tubes, which is what I am beginning to suspect. On 21 Aug I was on for the 70 cm ATP and worked SM2CEW, DL7APV, DG1KJG, LZ1DX, N4GJV, K2UYH, OZ4MM, DK3WG, and G4YTL. This was a pretty good turnout, even though conditions were quite difficult with very fast QSB and varying Faraday. On 22 Aug I ran a successful sked with WB7QBS for initial #442. The Faraday rotation was a sharp 90 degrees, and I had no echoes at all until I turned the feed, which is very unusual. Normally I can see something on the SDR. Glenn's signal was weak, but peaked nicely on the QSB upswings once I had the polarization right. It was nice to get a new one on 70 cm again.

I1NDP: Nando nando.pellegrini@tiscali.it tried to be active during the Aug 70 cm ATP and did have on difficult QSO with SM2CEW, but then had to give up because of QRM -- I been experience big QRM from a commercial (illegal) FM link for a couple of months. It is located at 431.4 with a deviation > 1 MHz on each side. This signal in addition to the usual birdies and other monsters walking throughout the band is causing me great frustration. The noise floor of my receiver can raise by as much as 20 dB in some directions. At the time when I QSO'd Peter, I had 8 dBs of extra noise. I could barely copy DL7APV calling G3LTF. No one else was detectable on my receiver before I switched off. I wrote to the authorities, but I do not expect any prompt reaction, so I am afraid my 70 cm activity will be greatly impacted in the future. [I am afraid this situation will be an increasing problem; not only at UHF but especially on the microwave bands. Nando's situation is not that different than my own. Recently my noise problems on 70 cm seem to be improving. It was really impossible a few years ago].

I6OLO: Andrea ik5qlo@gmail.com reports on his recent EME -- June through July activity after the DUBUS contest has been quite low, mainly because I have been involved in some ARISS activity in my zone. I have still managed to work some nice initial on JT65C and plan to be QRV again in Sept for the Italian CW EME Contest on 1296. I QSO'd on JT65C IZ4MAO for an initial (#), M0CTR (#), IK3GHY (#), SP3XBO (#), W3HMS, PY2BS, P19CAM, GM4PMK and G4CCH. On CW I worked SM7FWZ and N4PZ. I also made some quick experiment on 13 cm using an old AIDC 3033 converter modified by K5GNA. I had previously used it for AO40 2401 downlink. These converters were popular because they were cheap and had a good NF and gain. Mine measured <1.5 dB NF. The input filter is wide enough to pass the JA 2424 band. I want to

see if I can copy any JA 13 cm EME signals. I put it in the focus on my 2.4 m dish using the original AO40 LHCP 2.5 turn helix feed. I was able to get 2 S-units of Sun noise on 2424 by tuning to 168 MHz my FT-847. Unfortunately WiFi interference is quite high, but there are some quiet frequency spots. I plan to do some further testing in Sept.



I6QLO listening on 13 cm EME with a Helix feed

ISO/OK1DFC: Zdenek ok1dfc@seznam.cz sends news that he, OK3RM and DL6SH plan to activate ISO during the Oct ARRL EME Contest on 70 and 23 cm -- We will be QRV on 22/23 Oct during ARRL EME Contest. We will provide both a chance to work an additional multiplier and for many a new DXCC. Our plan is to be QRV all the time on 144. We will be on 432 the first window in the contest to moonset for EU and NA. The next moonrise we will be 1296 and QRV there for the whole window. During the last moonrise on Sunday, we will be back on 432 for JA, VK and EU. On the Monday after the contest (24 Aug), we plan to be QRV 2320. [There is a possibility they will use the ISO/OK5EME].

K5QE: Marshall k5qe@sabinenet.com in EM31cj writes about his 70 cm EME plans during the ARRL's Sept VHF Contest -- Hello to everyone in the 432 EME community. This year, the ARRL Sept VHF Contest will be held on 10/12 Sept. We want to work as many EME stations on 432 as possible to increase our grid count. Please help us with this event by working us on JT65b or CW. Our moonrise is 2330 on 10 Sept and our moonset is 1100 on 11 Sept. We will be actively looking for 432 stations between those times. This year, the 432 EME station is working FB. The TX power is 1000 W with a tower mounted preamp. The antenna is 16 x 28 el M2 yagis all Horizontal. If you are 432 EME capable, please try to work us during the contest. We will be operating 432 EME on 432.070 +/- Doppler. I am sure that my calibration on 432 is not right on, so please tune for us a little. We will take the second sequence and we will call CQ whenever we can. If you only work CW on 432, please call us on CW. If we detect a CW caller, we will immediately switch to CW and try to work you. If you can, please try to work us on 432. It will be a new grid for us and a new grid and a new initial for most of you. What a deal!!! We will be watching the N0UK EME-1 logger, but can't post there. Good luck to all in the contest and we hope to see you there. Thank you.

N4GJV: Ron qstdemb@yahoo.com updates us on his Aug results on 70 cm -- I was QRV for the ATP on 21 Aug and found most signals, including my own very weak echoes, were sub par, with severe QSB. I hope that this situation was caused by a polarity misalignment problem, and not a receive system failure. Some signals did seem to be of normal strength, so perhaps the former was to blame. Many thanks to DL7APV, G3LTF, SM2CEW, OZ4MM and K2UYH for FB QSOs! LZ1DX was heard with a strong signal, but CWNr. I also heard G4YTL. I plan to be QRV during the ARI EME contest in Sept and hope for a good activity level.

NA4N: Greg na4n@comcast.net writes that he is working on becoming QRV on 9 cm. He is currently active on 23 and 13 cm. Details about his station can be found on his new webpage at <http://www.na4n.com>.

OK1DFC: Zdenek ok1dfc@seznam.cz reports that he has had to postpone his ZA expedition due to problems with electricity -- My friends in Albania still have not finished the installation of the motor generator needed to power the station. [He will be QRV from ISO -- see report earlier in this NL]. During the ARRL Microwave EME Contest I would like to be QRV on all bands 2300 to 10 GHz. If all is OK and the WX permits I will try my new tripod with HB9DRI's control system on terrace. I will be on 10 GHz with my 3.2 m portable dish and on 2.3 GHz with my 10 m dish.

OK1KIR: Tonda and Vlada vladimir.masek@volny.cz write about their club's participation in the 6 cm AW on 30/31 July -- We found very good activity despite continuous rain. We QSO'd on Saturday at 0441 SQ6OPG (O/O), 0455 JA8ERE (559/549), 0506 JA6CZD (549/559), 0521 VK3NX (549/549), 0533 SV1BTR (559/569) for initial #49, 0544 OH2DG (559/559), 0616 IK2RTI (569/569), 0756 PA7JB (549/559), 1003 G3LQR (549/559) #50, 1038 G3LTF (559/569), 1147 SV3AAF (549/559), 1235 LX1DB (579/579), 1308 CT1DMK (559/559), 1457 WA6PY (O/O) and 1619 G4NNS (559/559) for a total of 15, and on Sun at 0530 SP6GWN (O/O) and 1228 DF9QX (549/539). 9A5AA was only heard (M/-) due to terrible local QRM from 5.6 GHz WiFi service on Dragan's side. Similarly CWNr was S57NML (O/-). It seems that WiFi is eliminating EME at more and more locations. On our SDR-14, we measured on in a light rain a Sun noise of 16.2 dB (SF115), (new) Moon noise 1.25 dB and G/CS 4.45 dB.

OZ4MM: Stig vestergaard@jos.dk was QRV on 23 and 70 cm in Aug -- During the AW on 20/21 Aug, I was working on antenna pattern measurement using F1EHN's tracking software, but on Saturday I did put SM7FWZ (449/579) and WB2BYP (439/549) in the log on 23 cm. I had planned to be more active, but the water cooling for my TH338 dried out and the water started to boil. Fortunately there was no serious damage. After checking the water lines, I found the water flow through the 7289 driver was blocked. I joined the last part of the 70 cm ATP on Sunday, and found signals down from normal. In the horz pol position my SWR was higher than usual. Stations worked were SM2CEW, DG1KJG, LZ1DX, PA3DZL, WB7QBS, K2UYH, N4GJV and G3LTF. I had my 144 dual yagi feed in the dish during the entire weekend, which causes some blockage and related degradation.



OZ4MM's feed with 2 m antenna in place



NA4N's 10' dish with 9 cm feed in place.

PA3DZL: Jac PA3DZL@planet.nl made it on for the Aug 70 cm ATP. But had problems with his PA -- I was only able to work OZ4MM (549/559) on Sunday morning before my PA failed and forced me to QRT. I will be on for the contest and the next ATP.



PA3DZL's water cooled 23 cm SSPA

PE1RDP: Arno arno.bollen@onsbrabantnet.nl (JO21qk) was listening on Sunday, 21 Aug with his new 4 x 5.5 WL yagi array and ATF54143 LNA on 70 cm. He could only receive and heard OZ4MM (559) CW, SM2CEW (549) CW, K2UYH (17DB) JT65B, K7XQ (20DB) JT65B and W7CE (27DB) JT65B.



PE1RDP's new 4 x 5.5 WL yagi array

S51WX: Dusan is a new station on 432 EME in JN75OS. He has 2 x 18 el Wimo 5 WL yagis in horz pol and 250 W to an SP-7000 in shack with 12 m of low loss Celflex cable. Thus far he has worked UA3PTW, KP4AO, P19CAM, DL7APV and OK1DFC. He has also heard DK3WG and I1NDP.



SV1BTR's new 6.1 m dish for 70 & 13 cm

SV1BTR: Jimmy jimmy@hol.gr is now QRV on 6 cm and reports on his recent activity – My new 6.1 m dish is now in place for 13/70cm. I still have work to be done to become operational on UHF. My 24 x 15 el 70 cm yagis have been taken down to make room for a third dish this fall. [The yagis are available to a good home in groups of 6, 12 or 24]. With my 4.9 m dish, I was

briefly QRV on 6 cm on 24 July and worked on CW F2TU and WA6PY for my first QSOs on this FB band. I was amazed when Paul told me the next day that he only has 10 W at feed, and we still made it on CW random during apogee! On 25 July on 6 cm, I added QSOs with OH2DG, G3LTF and SV3AAF (on both 6 and 13 cm). During the 6 cm AW, I could only be QRV for 4 hours on Saturday. I worked OK1KIR, JA6CZD, IK2RTI, VK3NX, JA8ERE, SQ6OPG, LZ1DX, G3LQR, PA7JB and G3LTF - all with good signals on random CW.

SVICAL: Michael michael.margaras@yahoo.gr is another new 23 cm EME station in KM17 interested in both CW and JT QSOs. He has a 2 m dish with a round septum feed, 45 W SSPA [?] and G4DDK LNA. He has worked PE9CAM, OK1KIR, PY2BS, myself and by now I am sure some others on JT.



SVICAL's 2 m dish with septum feed and 45 W SSPA

SV3AAF: Petros sv3aaf@yahoo.com reports on his activity during the 6 cm AW -- Many thanks to G3LTF for organizing the 6 cm EME AW 2011!! I was active on & off. Participation was good considering it was during the vacation period. I had a traffic time. All my QSOs were on random CW unless noted. Worked were OK1KIR, G3LTF, CT1DMK on CW and on way Olivia super text, PA7JB on sked, VK3NX, SQ6OPG and G4NNS. I CWNR JA8ERE, and heard DF9QX and LX1DB on SSB. The extensive use of SDR and the optimized systems of the "regulars" have "tamed the beast" of microwave EME. I found that TXing only a few dashes of echo test would attract someone's attention and start a random QSO without even calling CQ. The logger assistance is being surpassed by SDR. The loggers in most cases are used for extra comments and fun.

WA6PY: Paul pchominski@maxlinear.com brings us up to date on his recent EME primarily on the microwave frequencies -- On 25 June I QSO'd PY1KK on 3.4 GHz. Bruce had a very good signal. My own echoes weak quite weak, but I have only 15 W at the feed. On 5.76 GHz, I QSO'd on 2 July SK6OSO, and on 23 July SV1BTR and F2TU, and on 30 July OK1KIR and CT1DMK. I have relatively high WiFi QRM. When in the clear, I can measure a Sun/CS of 12 dB, Moon Noise of 0.8 dB, but ground noise can't be measured because of the QRM. At EL 2-4 deg, the noise is 20-30 dB higher than Cold Sky! At EL of -8 deg the ground noise is 6 dB below CS, but this is not true as there is still a noise contribution from the QRM source. Unfortunately dish position for low elevation points to the direction of a hill on the horizon with a lot of antennas. This hill is about 20-10 deg to the south from my moonrise position and its elevation is 7 deg. On 5.76 GHz I have 15 W out from RW85 TWT, and about 10 W at the feed. This tube is designed for 22 W out in 6.4 to 7.1 GHz band. Does anyone know any way to squeeze more power out of this tube. Maybe higher helix voltage will help? [Not likely]. Unfortunately I do not have a good schematic of existing PS. There is a potentiometer for V helix adjustment. Pmax does not happen at V max, but at slightly lower voltage. I wonder what kind of PA other people use on 5.76 GHz. Meantime I have improved the linearity of my RX system for 2320 and 2424 MHz, both for the LNAs and the mixers. I will check in the contest what kind of reception improvements I can get. On 10 GHz my old TH3631W TWT is tripping my PS, and my spare tube delivers

almost 2 dB lower power. The tube I was using for years, works fine on DC. When I apply RF input, I can't get more than 2 W out. Gain seems to be higher than the data sheet (47 dB instead of 43 dB). When I increase RFin, the Helix current goes above 2 mA and the protection in PS trips off. It looks like the output of the helix is disconnected from the output port. When I measure resistance of the helix ports it is R in = 41 ohm, Rout 41.3 ohm and between Input and Output ports 3.1 ohm. I do not know how the helix is made and what it should be? Where does the 41 ohms resistance comes from?

WD5AGO: Tommy wd5ago@hotmail.com is getting ready for the fall contest season – I plan to be on 13 cm and maybe 6 cm for Sept contest weekend. In Oct, we will be on both 70 and 23 cm. On 1296, we will use the large CP horn that I have worked several stations with in the last 4 months. In Nov we will be on 23 cm only with my dish. Using my big horn on 23 cm, we worked in April/May K1RQG, G4CCH, LX1DB and SM4IVE. We also heard several stations during the DUBUS contest, but had TX problems. We are running about 300 W and getting about 5.7 dB of Sun noise from the 20 dBi horn.

K2UYH: I [a.katz\(x\)IEEE.org](http://a.katz(x)IEEE.org) did not help much with the activity wise. I did make a few QSOs and add some initials on 70 and 23. I worked on 2 Aug on 1296 at 1606 SV1DNU (15DB/9DB) JT65C for mixed initial #391*, but made an error that blew my preamp and put me off the Moon for the rest of the pass. I was back on the next day, 3 Aug and QSO'd on 23 cm at 1646 SVIDNU (O/O) on CW for initial #320, 2000 SV1CAL (18DB/18DB) JT65C at his moonset (2 degs) #392* and 2024 W3HMS (8DB/9DB) JT65C, and on 70 cm had a partial at 1915 PA3FXB (nil/24DB) JT65B. ON4CGX was also listening. I contacted on 20 Aug on 432 at 0744 LZ1OA (19DB/20DB) JT65B for mixed initial #821* and 0750 K6CLS (25DB/23DB) JT65B, and then on 1296 at 0828 IZ2DJP (559/559) on CW for initial #321, 0846 G3LTF (559/569), 0852 N2UO (559/569) and 0920 G4CCH (579/579), and the next day, 21 Aug on 432 at 0750 W7CE (15DB/25DB) JT65B #822*, and during the 70 cm ATP on CW at 0736 DG1KJG (559/559), 0744 G3LTF (559/559), 0749 SM2CEW (559/559), 0810 LZ1DX (559/569), 0824 OZ4MM (589/559), 0840 N4GJV (559/449) and 0852 DK3WG (559/559). Activity was better than in July, but TX and RX pol was offset and I needed to rotate my TX pol to be heard. Later I tried with S51WX on JT65B with nil results.

FOR SALE: **WD5AGO** has for Sale 2 CP 13 cm feeds and 1 CP 9 cm feed. These are all the remains from the last batch he made. He also has LNAs for 70, 23, 13 and 9 cm available.

FINAL: The NL is still in need of a NETNOTES editor. Someone is needed to provide summary material from the various Internet EME Reflectors for the NETNOTES section. As a consequence there are no NETNOES this month.

There are a lot of EME new comers active on 70 cm above EME. Many of these new stations are on JT, but are also interested in and capable of making CW EME QSOs. G3LTF suggested that I note that detailed information on EME

(CW) operating procedure can be found at the link. http://www.nitehawk.com/rasmit/g3sek_op_proc.pdf.

This month we have the listings for the top 10 CW initials of stations on the 70, 23, 13, 9, 6 and 3 cm bands. The full listing can be found on G4RKG's web site at <http://www.zen70432.zen.co.uk/Initials/index.html>. TNX Dave.

The 2012 EME Conference is now only 11 months away. If you have not done so already, now is the time to start making plans to attend. This will be the 15th International EME Conference and in Cambridge, UK. This will be one you do not want to miss. The Conference Web site is at <http://www.eme2012.com/>.

The 2011 Microwave Update is on 13-16 Oct in Enfield, CT. It does not conflict with any EME contest this year and thus will probably attract a good number of EMEers. W1GHZ is handling the technical papers and still looking for submissions. See <http://www.microwaveupdate.org/>.

PSE keep the reports and tech info coming. Sept should be a high activity month with almost something going on every weekend. I will be QRV during both the ARRL's Sept VHF contest 11/12th (low loss but also near 0 dec) on 70 and 23 cm and during the Microwave EME Contest under the call K1JT. I hope to find you all off the Moon. 73, AI – K2UYH



T12AEB is shown working on his new 3.5 m dish. (Armando plans to put Costa Rico on 1296 EME very soon)

70 cm

Call	STATION	INITIALS
1	DL9KR	908
2	K5JL	827
3	K2UYH	708
4	K1FO	613
5	SM4IVE	550
6	N9AB	440
7	SM2CEW	437
8	G3LTF	427
9	DK3WG	417
10	SM3AKW	390

23 cm

Call	STATION	INITIALS
1	OE9ERC	363
2	F2TU	350
3	G4CCH	340
4	W5LUA	339
5	OK1KIR	320
6	OZ4MM	320
7	G3LTF	319
8	HB9BBD	306
9	K2UYH	302
10	OK1DFC	287

13 cm

Call	STATION	INITIALS
1	F2TU	117
2	W5LUA	112
3	OK1KIR	111
4	OK1CA	104
5	G3LTF	95
6	OE9ERC	91
7	OZ4MM	82
8	OH2DG	117
9	G4CCH	112
10	SM3AKW	111

6 cm

Call	STATION	INITIALS
1	OK1KIR	46
2	W5LUA	44
3	F2TU	43
4	OE9ERC	35
5	CT1DMK	30
6	OK1CA	24
7	OH2DG	20
8	G3LTF	17
9	WD5AGO	15
10	VE1ALQ	14

9 cm

Call	STATION	INITIALS
1	W5LUA	39
2	OK1KIR	36
3	OK1CA	29
4	G3LTF	27
5	OH2DG	25
6	WD5AGO	15
7	G4NNS	12
8	VE6TA	3
9	OK1DFC	2
10	K2DH	1

3 cm

Call	STATION	INITIALS
1	W5LUA	75
2	WA7CJO	71
3	F2TU	61
4	OK1KIR	60
5	OK1CA	43
6	F6KSX	40
7	G4NNS	34
8	AA5C	34
9	CT1DMK	27
10	I5PPE	26