432 AND ABOVE EME NEWS
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CONDITIONS: Summer is finally here with no up coming contests, but there is still plenty to keep things (EME) interesting. Foremost is the 17th International EME Conference in Venice on 19 to 21 Aug – see the end of this newsletter (NL) for more details. You really do not want to miss it, and there is still time to attend. There was a BIG turnout for the 6 cm DUBUS/EU EME Contest. G3LTF has the highest reported score with 34x32. HB9Q also has 34 CW QSOs but writes that he was not participating not in the contest and thus not following the rules. Unfortunately lost in the 6 cm activity was the June 70 cm CW Activity Time Period (ATP). The next ATP in not until 28 Aug from 0200 to 0400 and 1000 to 1200. The activity during the 9 cm Microwave Activity Weekend (MWAW) was not that good, possibly due to bad WX in EU. The 3 cm MWAW is on 30/31 July and expected to have many more stations QRV. KB7Q/O had a very successful state dxpedition to SD in June – see Gene's report in this NL. There are no dxpeditions in July, but SP/OK5EME will be QRV on the MW EME band in Aug, and coming in Oct are dxpeditions the S9YY to Sao Tome & Principe (432) and XT2AFT to Burkina Faso (to 2300) – see reports in this NL. The logs for the DUBUS/EU Contests are due on 16 July. Please get your logs in immediately!

WA9FWD is now QRV on 6 cm EME from Wisc

DL7YC: Manfred dl7yc@snafu.de reports on the 6 cm DUBUS EME contest – It was a very successful 6 cm EME weekend. On Saturday, 2 July, I was happy to contact many old friends. I started at 0355 with OH2DG, HB9Q, JA8ERE, JA6CZD, UA4HTS for initial # 68, JA1WQF, JA4BLC, G4NNS, G3LTF, UA3PTW, OK1KIR, SM6FHZ, ES5PC, SM6PGP, DF3RU, OH1LRY # 69, OK1CA, WA6PY, VE4MA, F1PYR and KL6M #70. It seemed to me that the conditions where a bit worse for the first pass. In the second pass I heard many stations MUCH louder than on Saturday! My moonnoise was 1.75 dB, but in the afternoon we had very strong winds in Berlin. They were gusting up to 50 km/h! It was difficult to keep the dish on the Moon in between 0.1 dB moonnoise variations (0.06 deg). Sunday morning I started 0450 with VK3NX (nil the day before), JA8IAD, JF3HUC, PA0BAT, SQ6OPG, UZ5DZ #71, PA7JB, PA3DZL and K2UYH. NO other station from NA where heard, then I contacted WA6PY and VE4MA a second time. Two days later, I QSO'd WA9FWD #72. I ended with a score of 30x28, which does not seem so bad 6 cm! I was surprised by the high activity. Sometimes I was seeing 6 or 7 different stations on my SDR screen! Heard but not worked was LX1DB and I was too late for LA8LF. I also copied HB9SV and possibly SP6GWN.

F1PYR: André moon@moonbounce.info is newly QRV on 23 cm -- I have 3.5 m dish with 400 W, but only a limited window to NA. My window ends at about 175° AZ. I operate mainly on CW and will be looking for skeds on HB9Q chat.

G3LTF: Peter g3ltf@btinternet.com writes on his June/July activity -- On 6 June while looking for KL6M, I worked SM6FHZ and VE6TA and the next day SM6FHZ again. I QSO'd on 23 cm on 8 June IK3COJ and I5YDI, on 9 June SP6ITF, and on 10 June LA3EQ for initial #425 – all ofcourse on CW. On 11/12 June, I was on 9 cm for the MWAW. Activity was not great, and I had WX problems on the Sunday, but worked OK1KIR, SP6OPN, S53MM, K2UYH and VE6TA, and heard OH2DG. However, 2/3 July was a great EME weekend! I think there must have been the highest level of activity that we have ever had on 6 cm for any EME contest. The only problem was that the wind was too strong on Saturday afternoon to allow my operation to continue much after 1400, but Sunday was calm all day and the dish followed the moon well with occasional tweaks on moon noise. I worked on Saturday HB9Q, JA4BLC, JA1WQF, JA8IAD, LA8LF, UA4HTS, G4NNS, JA6CZD, UA3PTW, PA0BAT, DF3RU, OH2DG, F1PYR, OK1CA, SQ6OPG, OK1KIR, DL7YC, ES5PC, SM6FHZ, SM6PGP, UZ5DZ, VE4MA, OH1LRY for initial #59, WA6PY and K2UYH, and on Sunday VK3NX, JF3HUC #60, PA3DZL, IK2RTI, PA7JB, LX1DB and WA9FWD #61 (now worked on 5 bands), VE6TA and SP6GWN. IK3COJ was CWNR; otherwise I worked everyone I heard for a total was 34x32. Thanks go to JA4BLC for organizing the JAs and QRGs. I noticed very long slow QSB, about 5 seconds duration, on the JA signals on Saturday at around 0400-0430. It must have been a libration null as the antenna here was quite stable with no wind. I have experienced this on 70 and 23 cm but never before on 6 cm; it was quite weird. JA1WQF reported QSB to me in our QSO at 0435. G3WDG, kindly analyzed the libration for me and found that the QSO indeed took place at a really deep null. The libration rate was 0.000027 degs/minute with a signal width of 1 Hz! I'm sorry I didn't record it on my SDR. I measured 1.3 dB of moonnoise (368,000 km) on Sunday and sunnoise of 14.8 dB. I was running 40 W to my HB 6 m dish with an SM6FHZ 0.749L Kumar feed.

HB9Q: Dan dan@hb9q.ch had fun during the DUBUS 5.7 GHz contest, however was not participating in the contest – I was QRV a total of 14 hours; It was great to see that much activity. On Saturday we saw at times 10 stations calling at the same time on the band. We worked a total of 38 stations (37 CW and 1 JT). 11 were initials to bring us to mixed initial #49. QSO'd were KL6M (549/579), ES5PC (579/599), SQ6OPG (569/579), UN6PD (17DB/12DB) on JT65C, UA4AAV (529/579), SM6PGP (579/569), OH1LRY (579/579), G4NNS (559/579), IZ2DJP (519/579), UZ5DZ (529/579) and WA6PY (559/589). KL7, ES, SP and UN were all new DXCCs for a mixed total of 25 DXCCs. We are very interested to work new initials on all MW bands. Please look for us on the HB9Q loggers, (we are always stand-by when QRV), or email for sked information and when we will be QRV next time.

IK2RTI: Gianfranco ik2rti@gmail.com has developed a new 6 cm circular for offset dishes that he used in the DUBUS Contest -- On Saturday 2 July I worked on 6 cm 2 initials: UA4HTS for #54 and HB9SV #55. I was using my usual 4.8 m dish and 100 W to the feed. On Sunday, I tested a new circular polarized feed on my 2.7 m offset dish (2.7 x 3 m). This feed is based on my previous linear pol designs for 24 and 10 GHz. The feed is still a prototype, and I think there is room for improvement. The feed was powered by a 40 W TWTA. The circularity is about 0.5 dB, the

sunnoise was 13.5 dB with 78.5 SFU and the moonnoise 1 dB. [See horn pattern at end of this NL]. I wanted to build this feed CP for 6 cm in order to add a new module on my offset dish, besides my existing 10368, 10450 and 24048 modules. I also want to re-build the feed for 10 GHz in case there is a switch from linear to CP. Unfortunately I made few QSOs compared to the other stations I heard because I had problems with my old transverter's LO and had to quite early. The stations worked on 3 July were SM6FHZ, G3LTF, DF3RU, UA3PTW, OK1KIR, OH2DG and ES5PC. I am QRV in 24 GHz, my last QSOs were on 20 Jan with JA1WQF (O/O) and JA6CZD (559/O).

IK2RTI's 2.4 m offset dish (R) with new 6 cm feed (L)

JA1WQF: Mitsuo ja1wqf@d5.dion.ne.jp was among the 5 JA stations that were active in the DUBUS 6 cm EME Contest – [see JA4BLC report below] -- I worked 23x22 stations in the contest. I worked on 2 July SM6FHZ (569/559), UA4HTS (559/559), OK1CA (559/569), PA0BAT (579/559), G3LTF (579/569),UA3PTW (559/559), HB9Q (589/569), JA4BLC (569/559), ES5PC (569/569), SQ6OPG (559/549), DL7YC (579/549), OH2DG (559/559), DF3RU (559/559), WA6PY (559/559), VK3NX (559/559), JA8ERE (589/569), VE6TA (559/559), JA8IAD (559/559), JF3HUC (569/559), and on 3 July OK1KIR (559/559), JA6CZD (569/559), G4NNS (549/549) and K2UYH (559/559). I used a 2.4 m solid dish and a 100 W SSPA. [TNX JA4BLC for forwarding this report].

JA4BLC: Yoshiro ja4blc@web-sanin.co.jp writes -- I attended and very much enjoyed the 9th JA EME conference in Sapporo on 17/18 June. The conference was organized by JA8ERE, JA8IAD and JA8CMY. 43 people attended. The next JA EME conference will be held in 2019 in Kyoto. On 3 cm, I worked on 31 May JA1WQF (O/O) cross pol -JA1WQF was using linear-H pol and I was using circular, on 1 June JA6CZD (559/569) - both on circular and again JA1WQF (549/559) with cross pol, and on 4 June G4NNS (559/559) XB 10368/10450 for initial #34. On 5760, I worked JA1WQF on 27 June (559/569), on 1 July during test to check the gear for DUBUS Contest JA8ERE (579/559), VK3NX (559/559), JA6CZD (559/569), JA1WQF (559/559) and JA8IAD (549/559), during the contest OK1CA, HB9Q, SM6FHZ, UA3PTW, UA4HTS, PA0BAT, G3LTF, ES5PC, JA1WQF, JA6CZD, DF3RU, DL7YC, OH2DG, OK1KIR, VK3NX, JF3HUC, JA8ERE, JA8IAD and PA3DZL for a total of 19x17, and after on 4 July G4NNS (559/559) for initial #40. It was a pity that I heard no NA signal in the contest. My window is restricted by a house and trees to east. I need AZ>100 and EL>40. on 5760. During the DUBUS contest, six Japanese 6 cm EMEers agreed to transmit using 5 kHz separation as done in ARI and DUBUS 3 cm contest to avoid the QRM. This arrangement again worked very well.

JA EME Conference in Sapporo

JA6CZD: Shichirou ja6czd@mx35.tiki.ne.jp worked 12x11 stations in the contest. He QSO'd DL7YC, SM6FHZ, JA4BLC, PABAT, ES5PC, OK1CA, G3LTF, DF3RU, HB9Q, OK1KIR, OH2DG and UA4HTS. Shichirou had social conflict on 3 July and could not be QRV [EU window]. Shichirou uses a 2.4 m offset dish and 80 W SSPA on 6 cm. [TNX JA4BLC for forwarding this report].

JA8ERE: Mikio sql01011@nifty.ne.jp worked 9x9 stations in the 5760 contest. He QSO'd on 2 July WA6PY (549/569), VE6TA (549/569), JA1WQF (569/589), VK3NX (569/569), JF3HUC (559/559), JA4BLC (559/569), UA4HTS (579/579), UA3PTW (569/579) and DF3RU (579/569). Mikio suffered from high wind on 3 July and could not be QRV. He uses a 4.5 m solid dish and 100 W SSPA on 6 cm. [TNX JA4BLC for forwarding this report].

JA8IAD: **Michi** ana11142@yahoo.co.jp worked 20x20 stations on 5760 in the contest. He QSO'd on 2 July JA8ERE, HB9Q, OK1CA, SM6FHZ, ES5PC, G3LTF, OH2DG, PA0BAT, VK3NX, WA6PY and JA1WQF, and on 3 July UA3PTW, UA4HTS, JA4BLC, DF3RU, DL7YC, K2UYH, VE6TA, JF3HUC and JA6CZD. Michi uses 3 m TVRO dish and 100 W GaN SSPA on 6 cm. [TNX JA4BLC for forwarding this report].

JF3HUC: Yoshitaka jf3huc@mbox.kyoto-inet.or.jp worked 23x22 stations on 5760 in the contest. He QSO'd on 2 July VK3NX (559/559) for an initial (#), JA1WQF (559/569), JA8ERE (559/559) and JA4BLC (559/569), and on 3 July UA4HTS (#), UA3PTW (559/569) (#), S59DCD (559/559) (#), HB9Q (559/559), ES5PC (559/559) (#), G3LTF (559/559) (#), DF3RU (559/559), OH2DG (559/559), PA3DZL (559/559) (#), SM6FHZ (569/569), DL7YC (559/559), PA0BAT (559/559) (#), OK1KIR (559/569), SQ6OPG (549/559) (#), K2UYH (559/569), WA6PY (559/559) (#), VE6TA (559/569) (#), JA8IAD (549/559) and JA6CZD (559/569). Yoshitaka uses a 6 m mesh dish and 80 W SSPA on 6 cm. [TNX JA4BLC for forwarding this report].

KN0WS: Carl carlhasbargen@g.com writes that he is adding 13 cm EME -- I have built a septum feed for 13 cm and plan to begin with reception later this summer. I have a Kuhne MKU-23 G3 transverter and read with interest the technical notes in the June EME newsletter on receiving the 3 cm JA band by receiving out of the normal IF BW. This same approach would seem to apply to receiving 2320 with 2304 transverter by listening at 160 MHz with a software defined receiver like my Funcube Dongle Pro. [It does]! I checked my transverter and it has only a 2.9 dB drop-off in power from 2304 to 2320. I also checked 2400 (JA band) and found there the gain was down 21 dB. This is a lot of loss, but with enough preamp gain may still be usable. Otherwise, this year has been off to a slow EME start due to QRL and poor weather when on site. I needed a clear night to see the North Star for my new polar mount. I actually ended up doing a 3 hour round trip and then waiting in the dark for 2 hours for the clouds to break for 20 minutes to do the measurements! I was QRV only on 12 May. I had tried to line up 6 skeds but most could not be on. I was able to complete with G4CHH on 23 cm using JT (14DB). Howard saved my day. I just now spent a marathon weekend working on my new 4.8 m dish: 12 hours one day and 13 the next. If it was an inch larger or one pound heavier, I would not have been able to get it in place. It looked pretty until I put the cross members between the ribs. Between trying to find place for my riveter between rib gussets and other troubles, it appears no two cross pieces are positioned like the rest. Hopefully it will work better than it looks!

KN0WS' new 4.8 m dish under construction

KB7Q/0: Gene geneshea@gmail.com reports on his SD (DN85gu) dxpedition on 70 cm – On June 9th, I set up in the North Cave Hills far from any man-made noise for some EME using 2x 9 wl yagis vertical and 500 W. I worked 5 stations: UA3PTW (23DB), DL7APV (18DB), DL9KR (CW 439), DK3WG (24DB) and UT6UG (22DB) – all on JT65B except Jan. Faraday was not helpful, but it was also a weekday and perhaps just not as many folks around. On June 12th, I did a second session using a single 9 wl yagi horizontal this time. Much better results including some 4x yagi stations that brought my total to 19 stations: WA4NJP (28DB) for Ray's state 48, OK1DFC (17DB) for Zdenek's state 46, OK1KIR (21DB), UX5UL (26DB), K2UYH (23DB), UT5DL (24DB), UR7DWW (24DB), UT6UG (25DB) and DL9KR (CW 559), US7GY (-28), DL8GP (-24), PA2V (-21), DL5FN (-17), and OH6UW (-28) – all again on JT65B except Jan. DL9KR was Q5 the whole QSO. I'm not sure the effort to erect 2 yagis is worth it compared to the results with just a single antenna. I was very happy to put South Dakota on. Look for me in Nevada this winter.

LA3EQ: Jan j-lustru@online.no is a new station on 1296 EME -- My setup is 1.9 m mesh dish with a septum feed, 140 W SSPA, G4DDK LNA and TS2000X. My rotator is a Spid Ras HR. I started up this year and now have mixed initial #49 on 23 cm EME. Most are on JT65C but I also have a few in CW QSOs. I am looking for skeds.

LA3EQ's 1.9 m dish

LA8LF: Anders moon@moonbounce.info will be moving soon but was QRV on 6 cm for the DUBUS Contest – While on 6 cm, Mr. Murphy struck. After QSOs with SM6FRZ (569/559) and G3LTF (559/559) with the Moon still covered 40-50% by trees on moonrise, the sequencer relay controlling the isolation antenna relay went bust and my Kuhne LNA was destroyed. At an age of 78 and on different drugs, I can no longer operate a soldering system (iron and hot air), so the LNA has to go back to Kuhne for repair. In the future I will have a spare LNA for each of the bands I am operating. There is no way you can be 100% safe from burning up an LNA. With 3.5 dB of tree noise, I had no moon noise for tracking. However, my mechanical tracking system was accurate enough to see signals on the SDR-IQ waterfall screen and thereby adjust for best antenna position until moonnoise tracking could be achieved. Those of you that do not have an SDR and SpectraVue, should consider this fantastic tool. Not only for detecting moonnoise and locate activity, but as a tool in "Continuum" mode to see if the transceivers, LNAs and cables work to full satisfaction. Hope to work you all from my new location (new initials!) next spring.

NC1I: Frank's frank@NC1I.COM writes that he has no activity to report over the last two months -- I have been busy with family activities and rebuilding the 432 array and my station. I expect to be back on 432 in Sept. I plan on being active on 1296 during the 30/31 July activity weekend. I hope everyone is enjoying their summer and has a great time at the conference next month! Unfortunately we will be moving our son back to University that weekend for his final (4th) year of school; so we were not able to make plans to go to the conference.

OK1KIR: Vlada and Tonda vlada.masek@volny.cz sends news on their club's successes in June/July – On 70 cm we worked on 2 June using JT65B at 0604 9A8DXG (19DB/15DB) for digital initial {#169} and a new DXCC, at 0632 BH4PVP (27DB/18DB) {#170} and another new DXCC and 0714 BG6LQV (28DB/24DB) {#171}, and on 12 June using CW at 1732 OE3JPC (559/559) for initial #391 and then using JT65B at 1757 RN6MA (19DB/22DB), 1803 DL8DAU (21DB/27DB), 1813 DG1VL (24DB/25DB) {#172}, 1849 UR3EE (22DB/17DB) {#173}, 1903 AA4ZZ (21DB/20DB) {#174} in NC, 1934 KB7Q/0 (23DB/21DB) {#175} in ND, 2152 W4HN (20DB/O) {#176} in TN and 2205 WA2FGK (13DB/O). On 9 cm we were on for the MWAW but found activity low. We did worked 11 June (Saturday) using CW at 1156 SP6OPN (569/569), 1340 G3LTF (579/589), 1418 S53MM (549/559), 1804 OH2DG (569/569), 2005 K2UYH (569/569) and 2132 VE6TA (559/579). On 6 cm we QSO'd using CW on 5 June at 1656 VE6TA (559/569), on 6 June at 0505 SM6FHZ (549/559), and finally on 9 June at 0855 KL6M (O/O) for initial #87 as 1st KL7-OK 6 cm QSO, BP field and new DXCC, and on 2/3 July in the 6 cm leg of the EU EME Contest a total 34 CW QSOs. New stations were OH1LRY #88, UA4HTS #89 and WA9FWD #90. Out of the contest, we worked using JT4F UA4AAV for digital initial {#22}. More details can be found on their web site at www.ok1kir.cz. On 3 cm we ran tests with VK7MO during an extended portable grid dxpedition to evaluate JT4F/JT65C decoding sensitivity with growing spread day by day from June 2 till June 13. Rex was using his 77 cm dish and 50 W. This effort was joined by HB9Q, G3WDG, OZ1LPR, VK5KK and some others. We worked on 2 June using JT4F/JT65C at 0416 VK7MO (13DB/13DB) for digital initial {#76} in QF03, on 3 June at 0428 VK7MO (14DB/17DB) {#77} in PF94, on 4 June at 04:30 VK7MO (13DB/17DB) {#78} in PF97 and at 0650 UN6PD (13DB/14DB) with finally a good signal from their 1.6 m offset dish, on 5 June at 0440 VK7MO (15DB/18DB) {#79} from PF88, at 0600 VK5KK (15DB/19DB) {#80} from PF95 with 90 cm offset dish and 30 W and 0608 VK5APN (16DB/18DB), on 6 June at 0709 VK7MO (13DB/17DB) {#81} in PF79, on 7 June at 0706 VK7MO (14DB/17DB) {#82} from PG71, on 8 June at 0724 VK7MO (13DB/18DB){#83} in PG62, on 10 June at 1004 VK7MO using JT4F (14DB/13DB) and JT65C (28DB/19DB) in PG54 {#84}, and on 13 June at 1316 VK7MO (16DB/17DB) {#85} in PG65. In July, VK7MO continued his June VK portable operation. We worked him using JT4F on 2 July from grids QF14, QF15, QF04 and QF05, on 3 July from grids QF38, QF37 and QF27, on 4 July from grids QF36, QF35, QF25 and QF26, and on 5 July from grids QF24, QF34 and QF33 to bring us to {#99}. Due to heavy rain, Rex cancelled operation from QF23. VK7MO's passion supported by JT software has raised our VK grid square count up to 70! This number is the same as the number of squares we have collected on 3 cm throughout the whole EU from years operation! Rex is the engine behind the growing VK EME activity on 3 cm. He has shown that EME is possible on 10 GHz even with a small dish and reasonable RF power. In DUBUS/EU EME contest we achieved a multiband total of 7,596,000 points!

OK2AQ: Mirek mirek@kasals.com plans to be active on 3 cm EME starting 22 July until 2 August from JN89eu -- I like CW but prefer JT4 because my setup is small – 1.8 m dish, 20 W at the feed and 0.8 dB NF LNA. My radios are rubidium locked and I am able to do accurate Doppler shift compensation: full Dop, CFOM and RX only according to demands. If you are interested in a sked, please let me know by e-mail.

ON0EME: Walter (ON4BCB) on4bcb@gmail.com writes that the 1296 beacon continues to perform superbly and include a report from F5HRS. Christophe is easily copying the beacon with a 6 m dish (f/d 0.45), OK1DFC septum feed and G4DDK preamp with F1EHN tracking.

P40MB: DM1AC and DF7KF have posted news on their Aruba dxpedition on 432 EME back on 7 and 8 May. They made 16 QSOs using JT65B. They worked on 7 May at 1116 DL7APV (16DB), 1130 DK3WG (16DB), 1134 UA3PTW (23DB), 1154 OK1DFC (20DB), 1210 DL6SH (22DB), 1234 DK0SF (25DB), 1250 HB9Q (25DB), 1256 LZ1DX (25DB), 1330 OK1KIR (22DB), 1412 K2UYH (23DB), 1722 DF3RU (21DB), 1726 G4RGK (27DB) and 2240 JA6AHB (22DB), and on 8 May at 1220 I1NDP (13DB), 1242 UT6UG (22DB ?), 1300 UX5UL (23DB). Also hear/partials were EB5GP (28DB) and UT5DL (28DB). QSLs should be sent to Joachim Werner, Kastanienstr. 21, 18209 Bad Doberan, Germany.

PA3DZL: Jac pa3dzl@ziggo.nl reports nice activity and good signals on 5760 during the DUBUS 6 cm EME Contest – The strongest signals were from HB9Q, LX1DB, VE4MA, JA4BLC, UA4HTS, OH2DG, PAØBAT and SM6FHZ. I made 25 CW QSOs with 3 initials. I QSO'd on 2 July OH1LRY for initial # 56, UA3PTW, SQ6OPG, VE4MA, ES5PC, OK1KIR, VE6TA and HB9Q, and on 3 July JF3HUC # 57, JA4BLC, DF3RU, G3LTF, SM6FHZ, UA4HTS #58, JA6CZD, OH2DG, G4NNS, UZ5DZ (no initial because the same as UR7D and UR7DWW), PAØBAT,

LX1DB, DL7YC, PA7JB, K2UYH, SM6PGP and WA6PY. Also heard on Saturday was OK1CA and on Sunday IK2RTI, F1PYR and WA9FWD. During my QSOs with DL7YC and PA7JB, I had my tower between the dish and the Moon. This decreased signals a bit, but we still worked. My 6 cm EME rig is 3.7 m solid Andrew dish with f/d 0.34, >100 W @ feed and 0.5 dB preamp. I was also QRV during the MWEU terrestrial contest and made some nice QSOs on 10 GHz – all great fun.

S9YY: Peter (DL1RPL) peter@dl1rpl.de will be on Sao Tome & Principe (JJ30) from 8 to 23 Oct. He will be joining a German HF-expedition to provide EME on 144 and 432. The dates for 70 cm operation are not yet known. More information will appear on www.dl1rpl.de when available.

SP/OK5EME: Zdenek (OK1DFC) will be QRV on the MW bands during EME and MW Seminar in Poland (JO80kg) on 12 to 15 Aug – I am expecting to have an Internet connection and upload info/coordinate details on the HB9Q reflector. I can change bands in 20 min, but plan to be QRV the first day on 9 cm, then 6 cm and finally 3 cm. I will use 1.8 m dish with 100 W on 3.4 and 5.6 GHz and 27 W (possibly 50 W) on 10 GHz. [See more info on the meeting at end of this NL].

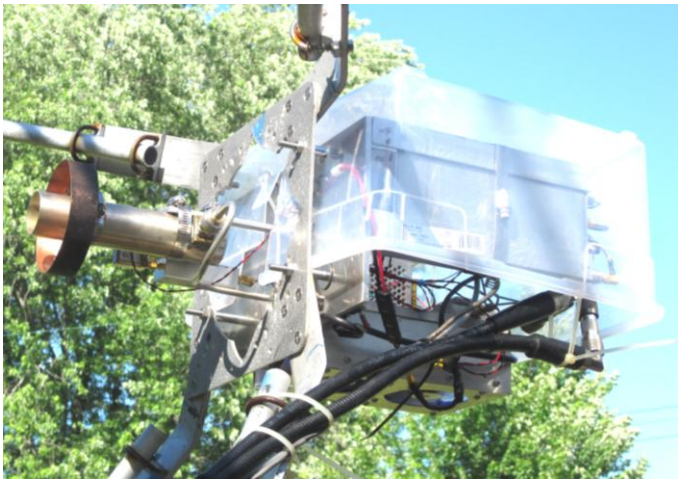
VE3KRP: Fast Eddie eddie@tbaytel.net continues to be regularly QRV on 23 cm on CW and JT – I worked using JT65C on 1296 on 5 June I5YDI, IK5EDI, WA3RGQ and I7FNW, and on 10 July DF3RU, PA3FXB, W3HMS, K5DOG and LA3EQ. I will be in Rochester, MN for the 50th annual Central States VHF Society conference at the end of the July. I hope to meet some of the EME crowd there!

VE4MA: Barry ve4ma@shaw.ca reports on his recent microwave EME -- I was active back in May for the 10 GHz DUBUS Contest and worked 18 stations. Signals were very FB with W7CJO, SP6JLW being 20+ dB/ N. All signals were very good. I was not QRV for the 3.4 GHz activity period, still have not repaired Toshiba PA. In July I was active for the 5.7 GHz DUBUS contest and worked 19 stations. I found conditions on 2 July very good. I made QSOs with G3LTF, SM6FHZ, OK1CA, ES5PC, HB9Q (much improved signal), DL7YC, OK1KIR, UA3PTW, PA3DZL and OH2DG. Signals were much harder to copy on 3 July with many QRZ's (Sorry) due to libration. I did work UA4HTS, SQ6OPG, G4NNS, DF3RU, K2UYH, WA9FWD, PA0BAT, VE6TA and OH1LRY. I did missed WA6PY and was called by a station ending in "AA" but could not pull it out? I also missed UA3PTW at his moonset. I had several pileups when I called CQ, and had trouble pulling out the calls even when they were not on the same frequency, as they often were. I will not be going to the EME conference this year, hopefully next time, but I am expecting a visit from VK5MC while he is traveling to the conference.

VE6TA: Grant ve6ta@xplornet.com was QRV for the 5760 Contest -- I had a great time on 6 cm and the high declination really helped with more window to Europe and Asia. Stations worked are as follows; HB9Q - excellent signal, WA6PY, OK1KIR, SM6FHZ, SQ6OPG for initial #27, ES5PC, PA3DZL, JA8ERE #28, JA1WQF, VK3NX #29 and first VE-VK 6 cm QSO, G3LTF, UA3PTW #30, VE4MA, OH2DG, G4NNS, JA8IAD, K2UYH and JF3HUC #31. It seems as if the activity on 6 cm is now comparable with the activity and growth on 13 cm. It is great to have a band with aligned frequencies worldwide!

WA6PY: Paul pchominski@maxlinear.com reports on the 6 cm EU Contest – I was QRV in the 6 cm contest and QSO'd on 2 July SM6FHZ, DL7YC, HB9Q, ES5PC, UA3PTW, G3LTF, VE6TA, DF3RU, partial OK1CA – my PSU failed, replaced with a spare one and continued, OK1KIR, JA8ERE, VK3NX, JA1WQF and JA8IAD, and on 3 July SQ6OPG, UA4HTS, PA0BAT, PA7JB, DL7YC, PA3DZL, OH1LRY and OH2DG – then my spare PSU also failed. I heard VE4MA and F1PYR. After the contest, I easily QSO'd very easy OZ1LPR. My PSU RWN320 for my RW248 TWT failed during my QSO with OK1CA. I replaced it with a spare one. The next day my spare PSU failed. Therefore I couldn't be QRV for second JA window. The second PSU had a problem with a bad Diac, DR122, in the second inverter circuit. I was able to get back to life using Diac removed from bad fluorescent bulb. The problem with first PSU is more serious. It was created by shorted C507, 3.3 uF green tantalum capacitor. I replaced all tantalum capacitors in my PSU, but missed this one. This shortage caused the rectifier diodes GR106-109 - tiny BAW76 to short and consequently burned out. The transformer, TR102, series resistor, 22 ohms, was burned but didn't burnout and didn't protect the transformer. Two years ago I saw another RWN320 with a burned transformer, TR102 and shorted diodes. Someone was trying to repair and created even more problems. At that time, I couldn't understand the reason for the damage. This transformer can be rewind, but I could not disassemble it. The ferrite core, which is covered with epoxy, was cracked. The center column of the ferrite has an air gap. I am looking for such a transformer. I also started to look for a 6 cm SSPA or GaN transistors. I think an SSPA will be easier to maintain. Unfortunately I was not on 9 cm MWAW, I regret because there were potential few new initials for me. On 6 cm I am still struggling with QRM. The dynamic range of my RX chain with a 17 dBm double-double balanced mixer is OK, but I can't correct dish aiming on the Moon noise. I have to build parallel RX operating on 5.4 GHz; this frequency seems to be clean. I should be on for the 10 GHz AW. A big unknown for me will be which band should I choose for ARRL MW EME Contest. 10 GHz is a separate antenna that I can operate both days with. My 12' dish is a challenge. Last year, I was QRV on 13 cm first day, and decided to go on 6 cm the second day. The only stations QRV were SM6FHZ and DL7YC. Switching setups to 9 cm takes more than 1 hour out of my 3 hours window to EU. I have to make a better mechanical setup to allow me to switch between 9 and 6 cm quicker.

WA9FWD: John jstefl@wi.rr.com has become operational on 6 cm -- The equipment includes my 3.7 m dish, a WD5AGO septum feed, Kuhne preamp, DEMI transverter, and 35 W at the feed. I started with a sked with KL6M and heard nothing from Mike. Two days later, I ran a sked with HB9Q, and worked him, but he was very weak. At this point, I added a filter after the preamp that made a very impressive improvement in my receive without changing my sun noise reading. [?] The next day, I was able to work Mike easily. During the 6 cm contest, I worked ES5PC, OK1KIR, SM6FHZ, HB9Q, DF3RU, VE4MA and G3LTF. During the next two days, I worked PA0BAT, G4NNS, PA3DZL, and DL7YC. I am receiving 10.3 dB of sunnoise and .45 dB of moonnoise. My equipment is now out of the dish for some upgrades, but I plan to be operational when the moon goes back north again. I will hopefully have a little more power and a little better receive performance.



WA9FWD's feed and SSPA box

XT2AFT: Hermann (DL2NUD) has a license for EME operation from Burkina Faso in IK92! He will be QRV from 14 to 24 Oct on 2 thru 13 cm. The flights and accommodation are booked. More information will follow. [TNX to HB9Q for relaying this info].

ZS6EME: Alex zs6eme@linkrf.ch will very likely have made his first 13 cm QSO by the time you read this -- I have tested my RX system with HB9Q on SSB, CW and JT with good results. With a Sflux of 71, VK3UM predict 13.2 dB of sunnoise, after tweaking the feed position that was exactly the value I read with my 3.6m dish and a RA3AQ Stepped Dual mode Septum scaled from his 23 cm design and optimized for a 0.5 f/d. I was able to receive HB9Q very strong (579) on CW, (55) 100% speaker copy on SSB and (7DB) on JT65C. Later one during the 6 cm contest, I copied PA0BAT (549) on CW and (52) on SSB and G3LTF (559) CW and (53) SSB. The RX is working perfect. Now I need to deploy the SSPA. The waterproof box is ready. The PA will be located in the back of the dish. I plan to combine two Erickson PAs but each PA consumes 30 to 32 amps, which when combined is above the limit of my PS. I thus will initially deploy just one PA for 250 W at the feed. As soon as I'm able to locate an extra PS, I will add the second PA. My CW skills are a bit rusty, but I'm practicing 30 min daily. I will operate all modes and see how much I can push my system especially for SSB contacts.

ZS6EME's 3.6 m dish is ready to go on 13 and 6 cm

K2UYH: I alkatz@tcnj.edu was able to be reasonably active in June/July but again missed the 70 cm CW ATP because on the 6 cm contest. I worked on 4 June on 1296 at 1456 I5IDY (559/559) CW, 1500 G4YTL (559/559) CW initial #373, 1512 SM3AKW (579/579) CW and 1530 F5EJZ (16DB/17DB) JT65C for mixed initial #528*, on 11 June during the 9 cm MWAW 1957 OH2DG (569/569), 2004 OK1KIR (569/569) and 2019 G3LTF (569/569) – all on CW, on 12 June on 432 at 1950 KB7Q/0 (21DB/20DB) for mixed initial #904*, 2026 OK1TEH (28DB/22DB), 2039 RN6MA (21DB/22DB) #905*, 2045 UR3EE (22DB/19DB) #906*, 2055 PA2V (19DB/O) and 2101 EA5CJ (12DB/14DB) – all with JT65B, on 2 July during the 6 cm CW DUBUS Contest at 1251 SM6FHZ (569/569), 1312 ES5PC (559/559), 1312 HB9Q (579/579), 1319 OK1CA (559/569), 1326 OK1KIR (559/569) and 1326 G3LTF (569/569) – could only QRV for a few minutes a family activity conflict, on 3 July 3 I was back on for 6 cm contest with no time conflict at 1240 UA3PTW (559/559), 1248 UA4HTS (559/559), 1254 PA3DZL (569/559), 1259 OH2DG (569/559), 1312 DF3RU (569/559), 1319 G4NNS (559/549), 1338 SQ6OPM (559/559), 1353 DL7YC (569/559), 1402 PA0BAT (569/559), 1420 VE4MA (559/559), 2122 JA8IAD (559/569), 2133 JF3HUC (569/559), 2145 JA1WQF (559/559), 2201 VK3NX (559/559) and 2215 VE6TA (559/559) for a total of 20x21 – heard were PA7JB, SM6PGP and JA6CZD called at 3 degs, on 6 July on 23 cm at 1730 partial F1PYR (S5/559) CW – (later learned that Andre's keyer was not sending dits only dahs!) and 1812 DK7LJ (57/55) SSB – Per happened to be testing while I was trying understand what was wrong with F1PYR, on 8 July on 23 cm at 1750 LA3EQ (22DB/17DB) #526* and 1815 LU8ENU (20DB/13DB) both on JT65C, and on 9 July on 70 cm at 1905 RW4HW (17DB/16DB) on JT65B, 1920 RW4HW (O/O) CW for initial #737, 1933 PA2V (13DB/17DB) JT65B and 2017 K5DOG (17DB/O) JT65B. I plan to be on for the 10 GHz MWAW, although the low dec will be a problem for me.

NET/REFLECTOR NEWS: **KL6M** burned out his elevation motor and missed the 6 cm contest, but is QRV again and giving out 6 cm QSOs. **RW0LDF** has a new dish mount and has a new 2.4 m dish on top. He plans to increase the diameter of this dish to 3.4 m shortly. Serge is available for 23 cm skeds at rw0ldf@mail.ru.

RW0LDF's new 2.4 m dish ready to be put in place

FOR SALE: **G4DDK** will bring for sale to the Venice EME Conference VLNAs and 2 m kits and pre-ordered ready-built preamps, together with a range of WA5VJB PCB products. Sam's email is sam@g4ddk.com. **G4HUP** will also be in Venice trading as hupRF. At the conference, Dave will have a full range of his items available. Products can also be ordered in advance for collection at the event. You can view Dave's range at http://hupRF.com. **N8CQ** has for sale very versatile hardware and software that he has developed called "RazTrak" for EME antenna tracking. Among "RazTrak's" many features is automatic correction for Doppler. For more information contact Gary at gabercr@nc.rr.com. **SM4IVE** has for sale SSPAs for 3 cm and 9 cm. He have up for sale 2 about 16 W Ilisra 12 GHZ SSPAs with PS, 1 brand new Toshiba 9 cm SSPA unpacked about 70 W out that was modified by DL7YC, and a about 30 W TWTA (RW 1127 with PS). Contact Lars at sm4ive@telia.com if interested. **HB9Q** is looking for a 10 GHz linear feed for 10 GHz with WR90 WG-connection for an f/d 0.4 dish. If have feed contact Dan at dan@hb9q.ch. **K6PF** has a long list of items of interest to EMEers. The list includes tested 8877s for $US395; SSB LT23S 1296 xvtr for $US375; 23 cm 350-400 W PA & PS using water cooled GS-15B in cavity built by KD5FZX - complete with water jackets, water pump & heat exchanger & uA meter for measuring current in water supply, 220 VAC pwr for $US1,250; KLM 432-30LBX yagi or Cushcraft Model 424B yagi for 432 for $US75. All prices are OBO + packing materials (unless I hv on hand), shipping & insurance. For complete list and more information contact Bob at k6pf@sbcglobal.net. is looking for a working 432 power amplifier for EME. It must have > 150 W. If have something to offer contact Tony at natewac@aol.com. **NR6CA** has miscellaneous microwave components and test gear for sale. On the long list is a working Lucent RFTG-M-Rb Rubidium 10 MHz frequency standard and a small power supply for $US185.00 shipped. For more info contact Randy at nr6ca@sbcglobal.net. LA8LF needs information on a Varian TWT VTU-6396M4: Power out, Helix voltage and current and Collector voltage and current. Contact Anders at anders@la8lf.com.

EME 35 & 25 YEARS AGO BY PETER, G3LTF: In the June 1981 NL most of the 20 or so reports cover operation in the ARRL contest; K2UYH reports a score on 432 of 50 QSOs but 23 cm activity as much lower. OZ9CR reports shipping 7 of his UPX4 type cavity PAs for 23 cm. (My own version of this PA still dishes out 800 W!) There is an interesting 432 preamp design by N6CA, which might well have applications today. It uses source feedback to raise the input impedance so that a multipole BPF can be used in front. NF is claimed as 0.3 – 0.4 dB, gain 16 dB. Obviously there is a trade off from filter losses vs NF, but for someone close to TV or Tetra stations (and willing to HB and experiment!) this might be worth a try. If anyone is interested I can make a copy of the page. The June 1991 NL reports an amazing level of activity on 432 MHz; 43 stations were reporting to the NL. It's hard to count the number of QSOs reported, but I would guess it's about 100 (all CW of course). The sked list for 432 runs to about 120 skeds with about 33 on 23 cm and the same on 2300. VK3UM reported on his tracker board and SW for sale, and F1EHN announced the launch of his new program and tracking system. Finally, Hannes (OE5JFL) and Tommy (WD5AGO) both announced the arrival of baby daughters!

PULSARS: Mario (I0NAA) mario.natali@gmail.com has writtena program to predict detectable Pulsars. Following suggestions and corrections from the "neutron-star" group, he has released a new version of Murmur (1.3.2), which is available both on ARI local radio club web site http:// www.aripg.it/ and on my dropbox https://dl.dropboxusercontent. com/u/ 7783395/Murmur%201.3.2.exe. The program checks the possibility to receive Pulsars. It starts with a set-up that can be modified and saved. The "compute" button allow a search of Pulsars likely to be received. In order to use you must enter the location with "SET observation location" and also the parameters of your station.

DOPPLER IS NOT SIMPLE (K2UYH): This material is primarily intended for JT EME stations. CW operators normally listen on their echo frequency, so there is no issue. As JT has grown in popularity, the value of listening on your echo seems to have been lost. In the case of a SKED, you need to decide in advance what rules will apply. Many of the 23 cm dxpeditions are now listening on their echo. I have come to the conclusion that this is the best procedure for everyone to follow. But, it is not universally agreed upon. There is the additional question of where to TX. In the case of dxpedition stations that are listening on their echo freq, they will normally TX on the announced sked frequency, Fsked. (They

should make this clear, but often do not.) Assuming they TX on Fsked, this leaves it to the other stations to TX so that they are heard on the DX station's echo freq. To do this, you should TX on Fsked + MD - SD, assuming you have not yet heard them. [MD is the mutual Doppler freq and SD is your self Doppler freq given in the astronomical box of JT]. If you are copying the DX (or sked station), you should of course TX on the frequency that you copy them - SD. (This is simply accomplished by setting your radio's RIT to SD. If you have not heard them, keep your RIT set to SD, and listen around Fsked + MD). I recommend DX stations TX so that their echo falls on the Fsked. In this case the TX freq is Fsked - SD (their). They accomplish this by putting their SD in their RIT and listen on Fsked. They should of course hear their echo there. They should also hear your signal there, if you follow the same procedure, i.e., put your SD in your RIT. But note: you should hear them on Fsked + SD - MD. When calling CQ, you need to make clear where you are listening (and where you are TXing). Unfortunately some stations will reply so that they are heard on your actual TX freq. Others TX back right on the frequency they hear you with no Doppler correction. I recommend that everyone TX so that their echoes fall on the same frequency they hear a station, and that the CQing station sets his TX freq so that his echoes fall on the announced frequency of the CQ, i.e., everyone keeps their RIT set to their SD. The same procedure as was recommended above for the DX station. If everyone kept their SD in their RIT, there would be no problem. Just remember to look around Fcq + SD – MD… And if you are calling CQ, you need to look around – Hi.

FINAL: 17th EME Conference in Venus Update: Giulio (IW3HVB) reports that registrations continue to roll-in. At this writing, we have 124 delegates! We still have few rooms left, so hurry up to register if you are still thinking to come at http://www.eme2016.org/index.php/registration/. I was at the ARI booth in Friedrichshafen and pleased to meet many of you. We are organizing the measurement lab TNX to the help of IK6EFN, I3CLZ, IK3HHG and HB9BBD. Take a look at http://www.eme2016.org/index.php/schedule/measurement-lab-2/. During the conference there will be prizes/awards presented for the EME SSB Contests and for the ARI Trophy. If someone/group wants to submit in advance a proposal for the next conference location, it is very welcome. We can publish it on the website. The choice will be made as is usual, near the end of the conference. Contact me through email at iw3hvb@eme2016.org.

K1DS is asking for your feedback on the ARRL EME Contests using a "survey monkey" at https://www.surveymonkey.com/r/PR5SMB2. Rick will present the results of the survey at the International EME meeting in Venice in August. Please use the link and sends his thanks in advance for your responses. [He has thanks W3SZ, would will be in Venice for his help with the link].

There is now a Russian language EME NL - "EME vestnik" that will be translating material form this NL. It is produced by Alexey (RA4SD) ra4sd@yandex.ru and down loaded from the Russian VHFDX site at http://forum.vhfdx.ru/eme-b7/eme-etk/msg254038/?topicseen#new. Alex promises to send news on Russian 432 & Up EME to me for this NL.

Congratulations to OK1KIR. They have received a WAZ EME award for 37 zones (#13)!

The Results of the ARI Spring 2016 EME Trophy Contest are at http://www.eme2008.org/ari-eme/Results%20Trophy%20Spring%202016.pdf. The Autumn Contest is on 24-25 Sept, which is the same weekend as the ARRL EME MW (13 cm up) Contest. This seems a very bad weekend choice! I can't understand why these things cannot be better coordinated.

Internet Information: DJ3JJ has prepared a table of RX performance data for 144, 432 and 1296. See http://www.do9bc.com/?page_id=632. Andreas also recommends a video on how to build your own prime focus dish at https://www.youtube.com/watch?v=MU-dCkFGdVQ.

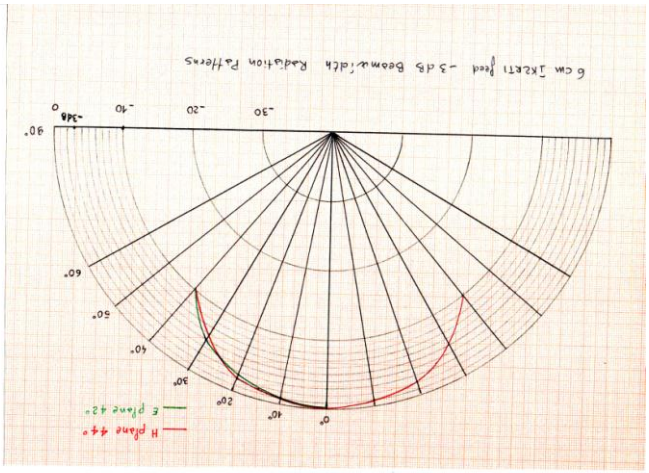
OK1TEH reports that info on getting started on EME with a focus on 432 and up can be found among the following sites:
http://www.ok2kkw.com/00003016/eme2014/pdf/k1jt_optimized_small-station_eme.pdf;
http://www.ok2kkw.com/00003016/eme2014/pdf/k1jt_eme_2014_k1jt.pdf
http://www.ok2kkw.com/00003016/eme2014/eme2014bodou_eng.htm#pre;
http://dg7ybn.de/432MHz/GTV70_3w.htm;
http://dl7apv.darc.de/5weme/ 5weme.htm,
http://ok1teh.nagano.cz/eme_432_vs_144.pdf,
http://www.ok2kkw.com/next/dj3jj_70cm2010.htm,
http://www.do9bc.com/?page_id=632,
http://www.vhfdx.ru/apparatura/accurate_noise_figure_measurements_1296_mhz,
http://www.vhfdx.ru/apparatura/rw3bp_1296mhz_lna_optimization,
http://www.vhfdx.ru/apparatura/1296-mhz-small-eme-station-with-good-capability-part-5.

As you can see from the reports this month 6 cm is becoming a very popular EME band! PA0EHG has put together a table of active 6 cm EME stations equipment and their noise measures. See http://home.planet.nl/~alphe078/6cmemestations.htm.

The Third EME and MW meeting in Poland will be held in the small village of Gajow on Czech - Polish border on 12 to 15 Aug. SP65MLK and SP6GWN head the organizing committee. See http://ra-ukf.iq24.pl/default.asp?grupa=228225&temat=425588 for more information.

VK3UM's software lives on! JH1KRC writes that JA5FNX reports that the latest version of VK3UM programs will work in Windows 10, but that the former versions of EMECalc and EMEPlanner would not. He indicates EMECalc was revised on 14 Feb 2016, and EMEPlanner on 2 Jun. 2016.

For the first time in several months, I have not been super rushed to get the NL out. There are still probably more errors/typos than I would like, but I have been able to include some extras. I hope to get another NL out before Venice with more extras from my technical backlog. Please keep the info coming. I am looking forward to QSOing you via the Moon and seeing you in Venice. 73, Al – K2UYH



Pattern of IK2RTI's new 6 cm CP feed horn for offset dishes

WA6PY's 6 cm feed horn and with TWT mount close by