

432 AND ABOVE EME NEWS

March 2021 VOL 51 #2

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EUROPEAN EME DUBUS CW/SSB CONTEST 2021:

April 17/18 - 10 GHz & UP

May 15/16 - 1296 MHz (!)

CONDITIONS: This month we have 3 EME contests to report on. Four, if you count the **SSB Funtests on 23 and 13 cm** as separate events, which they are. Unfortunately, the turnout this year was not good, likely because of the very cold weather (WX) with dense icing and snow in most parts of Europe (EU). Many stations were unable to change their feeds from one day to the next. As a result, no SSB Funtest entries were received for 13 cm. There was a pretty good competition on 1296, with **OK2DL taking the title of "Top Fun Maker"** again with 468 points. The **top report for the Dubus 70 cm Contest was OZ4MM** with 22 QSOs. [We do not have Stig's full log]. The OK1KIR group has a score of 21x21. In the **9 cm Dubus event both G4CCH (21x17) and PA3DZL** are reporting 21 QSOs.

The big dxpedition News is KB7Q's trek across the US to put States need on 1296 for WAS on the Moon. Gene was in AZ and NM in March and will be in AR, MS and AL in April – see his report. VP8EME continued to provide the Falkland Islands on 432. HB9Q's microwave dxpedition to Rhodes (SV5/HB9COG) are on for 14-16 and 21-23 May. NA1V has announced a 23 cm dxpedition to Hawaii in Oct.

The 2020 ARRL EME Contest results and an excellent writeup on the contest by K1DS are now available at <https://contests.arrl.org/ContestResults/2020/EME-2020-FinalFullResults.pdf>. The results shows that while on 2 m and 70 cm CW activity remain low, CW on 23 cm is very alive. The **top overall scorer was again UA3PTW** with 6,673,600. Dmitry won the top single op multimode (mm) all band category. The winner of the single op mm all band category was G3LTF. The top single op was on 432 mm DL7APV and CW DL9KR, on 1296 mm OK2DL and CW DG5CST, on 2300 mm DL1EMA and mm 10 GHz K2AQ - there were no other single op CW or MM entries for the higher bands. Multi-op, the top scorers for all band mm was RA3EME and CW SP6JLW, for 432 mm S51LF and CW SP3KDA, for 1296 mm W6YX and CW 9A5AA, for 10 GHz W3SZ and for 24 GHz OK1KIR.

For those who operate using digital modes, there is a new mode Q65 that is rapidly increasing in use on all the

EME bands. Q65 appears more sensitive than earlier modes, but causes difficulties with identifying which mode is being used and necessitates the use of loggers in conjunction with EME communications. See G3WDG's report in this newsletter (NL) and K1JT's manual at https://physics.princeton.edu/pulsar/k1jt/Q65_Quick_Start.pdf.

The sad news does not stop. This past month we were shocked to learned that **JA9BOH** had suddenly become a silent key (SK) on 11 Feb at age 71 due to an accident during his antenna maintenance. Kimio was a retired professor at the National High Technical Institute and a graduate of Kyoto University, as well as an enthusiastic ham radio (HR) operator. He was first licensed in 1978, and active in many aspects of HR, but especial active on 432 CW EME. Kimio was part of a Japanese Antarctic research team and spent a year in the Antarctic. His BOH yagi is popular among JA EMEers. In recent years he has been very busy as the VP of JARL but still remained QRV on 70 cm EME. We all will greatly miss Kimio, his warm-hearted friendship and huge contribution to moonbounce and HR.



JA9BOH at JARL Conference and SM3AKW (R) with ZS6AXT at past International EME Conference - condolences to Kimio's and Carl's family and friends

SM3AKW also joined the SKs on 11 March at the age of 90 after being ill for a while. Carl was a pioneer of Meteor Scatter (MS) in EU in the late 50s and 60s and later EME. He was active on 2 m, 70, 23 and 13 cm EME. He was a first class CW operator and many have enjoyed QSOs with him through the years. He was a regular from the earliest EME conferences, and always great fun to be with. Carl

held many records on MS and what is believed the first 23 cm Aurora contact. RIP dear Carl.

CX2SC: Rick cx2sc.base@gmail.com will be on 6 cm along with 3 cm EME soon – On 3 cm, I now have a waveguide interface to my feed, and am seeing 10 dB of Sun noise and 1dB of Moon noise. (TNX to W1GHZ and K6QPV for their help). I still do not hear my echoes, but this may be due to my low power. I plan to be QRV on 3 cm on 19-21 and 26 March and on 5 April. I am also setting up a system for 5.7 GHz where I hope to have 40 W. I will use my 10 GHz system consisting of a 1.8 m (0.6 f/D) offset dish as the starting point. I am looking for the proper diameter copper or bronze pipes to make a circular pol feed. TNX to F2CT, I have transverter and LNA for 5760 on the way.

DK1KW: Warner wkraus@wkraus.de comments on his past year on 23 cm EME – I became QRV on 23 cm in 2020. I started with a nice LZ5HP transverter, his 25 W PA and a single 36 el yagi from YU1CF. I made my first 2 EME QSOs with HB9Q on random. Then W2HRO told me about his plan to build small folding dishes. They seemed the right solution for my antenna problems. I was very happy to get one of his prototypes, a 1.8 m folding dish with a circular pol patch feed. Together with a 300 W PA from VHFDesign and a 0.35 dB LNA, I was ready for serious EME even with the small dish. I worked PA3FXB, IK3COJ, ES6FX, SM6CKU, KD5FZX, RD4D, SM5DGX, YL2GD, HB9Q, RA4HL, I1NDP – my first Q65 QSO, VA6EME, OK1IL, AA4MD, IK5VLS, N1AV, KA1GT, DL8FBD, IQ0PG, F1RJ, WA3RGQ and G4CCH. Most of these QSOs were made using JT65C, but 8 were using Q65 with different submodes. I can see ON0EME at (18DB). I feel there are a lot more stations to be QSO'd; and that contacts should be possible with stations using dishes smaller than 3 m. Station is for dry weather only with manual steering and a somewhat limited window from 120-150 degs. It gives me a lot of fun!

DK3WG: Jurg dk3wg@web.de added a new DXCC in Feb – I QSO'd in Jan/Feb initials on 432 using JT65B with **VP8EME for DXCC #142**, RA9UKW and DB8WK.

DL4DTU: Norbert dl4dtu@gmx.net is now QRV on 3400 EME – I made my first EME QSO on 9 cm in the Dubus/REF 9 cm CW Contest.

DL7APV: Bernd dl7apv@gmx.de sent comments his last EME activities -- I wasn't very active in the **70 cm CW Dubus Contest**. The WX was just too good to spend all day at the radio. I did log **17 QSOs**, all with armchair copy. I am always impressed by WA6PY's signal from his single yagi! Using the digital modes, I added some new stations back in Feb with UA3RAW in LO02, G1BHM in IO70 with a single 18 el yagi and 75 W, EA2LU in IN92 also with a single 18 el yagi and 50 W, **VP8EME for a new DXCC**, VK5APN/p in PF95 with a single 22 el yagi and barefoot IC910 on the beach, 9A5M in JN95, SQ2SAT, RA9UU in NO36 with a single 16 el yagi and 50 W, G4CWH (559/579) using CW in

JO01 with 4 yagis and 400 W, KF9L in EM58 with a single yagi and 50 W, DL8YE in JO32 with a single 23 el yagi and 150 W. I conducted my first tests with Q65. It seemed OK; I need to do more testing to say how much better it is. **My pulsar count is now up to 91**. TNX to OE5JFL help, I can now dig out a lot more pulsars with a bit of patience. I need to find a solution for noise coming from an electrified-fence of one of my neighbors. For normal EME operation, it does not cause much interference, but during pulsar hunting it significantly reduces my sensitivity.

DL9KR: Jan Bruinier@t-online.de supported the **Dubus 70 cm CW Contest and reports** – I am now up to initial #1104 by a QSO with KU4XO. In the 432 CW contest on 21 Feb, I worked at 1430 OK1KIR (589/589), 1436 PA3DZL (569/579), 1440 OE5JFL (589/599), 1445 DL6KAI (569/579), 1451 PA2V (579/579), 1500 OZ4MM (599/599), 1504 UA3PTW (599/599), 1507 DL8UCC (569/559), 1516 partial OK1TEH (549/559?) NC – Matej sorry about your city noise, 1522 ES5PC (569/589) and 1548 DG5CST (589/599) **for a total of 11 QSOs**.

DU3T: Ron ronald.schiltmans@freenet.de is QRV from the Philippines on 1296 -- I am now fully operational. My CW echos are 10 - 12 dB in 100 Hz. My G/T is ~17.4 dB/K and EIRP ~ 63 dBW. I have already worked several stations surprisingly easily using CW. I have a 4.6 m prime-focus dish with dual-mode feed and septum-polarizer (G ~34 dBi), HB 8 x MRFE6S9160, water-cooled (P > 800 W CW) SSPA, SKY67151 (NF ~0.3 dB) LNA and TS2000X with GPSDO REF.

EO5OFF: Nikolay (UX0FF) ux0ff1@gmail.com used his special contest call to celebrate his 50th anniversary his first time on air, [more info about this special callsign can be found at <http://irc.net.ua/212-ux0ff-50-let-v-efire>] -- I added 70 cm initials in Feb and March using JT65B with DL8DAU, RD3FD, PA3DZL, OZ1SKY, EA5CJ, DK5SO, S56P and UT2EG. I use 4x19 el yagis and a QRO PA. [Thanks to DK3WG for forwarding this report. Matej reports often decoding Nik with his single yagi.



UX0OFF/EO5OFF 2 m & 70 cm 4x19 el array in center

G3WDG: Charlie g3wdg1@gmail.com has been experimenting with the new JT mode Q65 – My main activity from here for the past few months has been evaluating the new WSJT-X 2.4 Q65 mode for EME. My first Q65 QSO was with OK1DFC on 24 GHz on 10 Dec. I was operating the DL0SHF station remotely and we tested sub-modes 60D and 60E under high Doppler spreading conditions. We compared Q65 to QRA64, and even with the early alpha release of the software available then, found that Q65 outperformed QRA64, and since **QRA64 has been retired in WSJT-X 2.4. The difference was so clear that no further benchmarking was needed.** Further 24 GHz tests were made with OK1DFC and DL0SHF, where we tested out the new averaging capability of Q65 and also tested sub-mode 120E. We saw some benefit, even at a high Doppler spread of 480 Hz of the longer period length. For high Doppler spread, we concluded 60E and 120E work well. Q65 tests have also been done on 1296, using various antennas (14t helix, 76 cm dish with SM6FHZ patch feed, and the patch feed alone). HB9Q has been copied on the helix and patch feed with a good margin. Tests with KA1GT using a 76 cm dish compared sub-modes 30B, 60C, 120D and 300E, (which have similar tone spacings). We saw an improvement in decode threshold of 1.5 dB, 3dB and 4.5 dB for 60C, 120D and 300E, compared to 30B. A test near perigee resulted in one decode of Bob's signal using 300E and the helix. Bob and I also completed 60B and 120C QSOs with the 76 cm dish, and only 100 W at my end. There was enough margin using 120C for decoding without prior knowledge of callsigns and grids to be possible both ways. I have also received good decodes with about 3 dB margin, running 100 W to the patch alone using the DL0SHF system on receive. Sun noise with the 76 cm dish is approximately 1.5 dB and ON0EME is clearly visible on the waterfall. [OK1TEH has posted notes on Q65 operation at <https://drive.google.com/file/d/1XsbH6ULhn4dSqVaO8ccRXK48AXjxU62/view?usp=sharing>; by G3WDG at http://ok2kkw.com/next/g3wdg/g3wdg_q65_operating_guide_ma2021.pdf; and OK1DFC on his experiments on 10/24 GHz at <http://www.vhf.cz/text-novy-mod-q65-ve-wsjt-x/>].

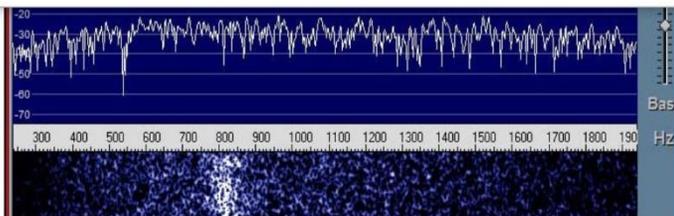
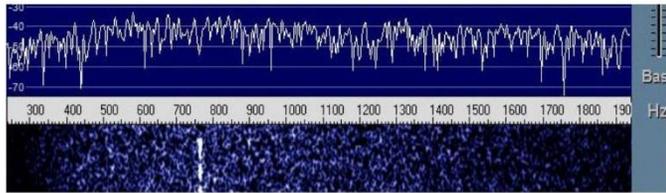
G4BAO: John john@g4bao.com wrote about problem with his 24 GHz TWT -- After 6 months preparing my 24 GHz EME system, I decided it was time to "bite the bullet", power up and check out the RW1127 TWT. As the tube hadn't been powered up since 2015, I carefully followed the recommended procedure and initially applied only the regulated 6.3 V DC to the heaters, no HT voltages. It took around 800 mA – all was good. I planned to leave it in this state for 24 hrs. I to checked 15 minutes later, and was upset to find no heater current! Clearly the heater had burnt out! I am now looking for another tube. I am also interested in the possible mechanism of failure. Could it be a slight loss of vacuum due to the tube's age? I am interested to learn from this disaster. Obviously my 24 GHz plans are on hold! [See for more info on millimeter wave operation http://www.ok2kkw.com/next/g4bao_2018.pdf and on modification of 24 GHz TWTs http://www.ok2kkw.com/00003016/eme2014/pdf/dl7yc_modifying_the_rw1127_and_similar_twts_for_24ghz_g4nns.pdf and [\[ok2kkw.com/00003016/eme2014/pdf/dl7yc_man_twta_modifications.pdf\]\(http://ok2kkw.com/00003016/eme2014/pdf/dl7yc_man_twta_modifications.pdf\)](http://www.</p></div><div data-bbox=)

G4CCH: Howard howard@g4cch.com reports on the SSB Funtests on 13 cm and the DUBUS/REF 9 cm CW EME Contest -- I was active on 31 Jan for the 13 cm SSB Funtest. I left the feed in the dish from the previous weekend (Dubus 13 cm contest). It wasn't possible for me to change the feed back to 23 cm on Saturday, and again to 13 cm for Sunday. So, I didn't make it on for the 23 cm SSB contest. Activity wasn't great, and only a few stations were seen on HB9Q logger. I worked on 29 Jan JJ1NNJ (569/569) CW, and on 31 Jan WA9FWD XB (579/569) CW and (54/44) SSB, KN0WS (17DB/15DB) on JT65C for initial #19, VE6BGT (579/579) CW and (54/45) on SSB, VE6TA (54/55) SSB, SP3XBO (579/579) CW and (55/55) on SSB and JA6XED (569/569) CW #125 - we did try on SSB but struggled understand what Hisao was saying and finally gave up. Thus, ended with a score of only 4x3 for 24 points. I was also QRV during the 9 cm Dubus contest and made 21 CW QSOs x 17 mults in total. I worked OK1KKD, PA3DZL, OH1LRY, G4NNS, DL4DTU for initial #57, OK1CA, OK1KIR, ES5PC, W5LUA, DF3RU, PA0BAT, SP3XBO, WA9FWD, VE6TA, VK3NX XB, OK1DFC, OK1CS, OH2DG, K2UYH, LX1DB, VE4MA and VE6BGT. I missed VK4AFL - mistake in XB freq settings at my end. I also found that the BPF in my transverter rolls off fast below 3399, so will need tweaking to get down below 3398. Signals seemed to be weaker than last time I was on 9 cm. I was seeing 1.1 dB of Moon noise. My 9 cm setup is my 5.4 m dish, a scaled down N2UO septum feed, 100 W at the feed and HB G4DDK VLNA with 0.3 dB NF.

G4DDK: Sam jewell@btinternet.com has added 9 cm EME – I was QRV during the 9 cm Dubus weekend on 20/21 March, but spent most of my time on JT65C. I struggled to get the system together in time. Once the TX side was hooked up, I found that there was a problem getting power to the feed horn (RA3AQ). It turned out to be the length of Ultraflex 13 between the main LDF5-50 from shack to dish mount and the feed horn. Using the NanoVNA, I found the cable loss increased sharply above about 2.5 GHz. I replaced it with Heliax. Even so, I only had 18 W available, and could not detect echoes. Whilst, the stations I heard were no problem to copy, my reports confirmed the low power of my transmissions. I have decided that trying to keep and operate the PA in the shack on 9 cm is not a good idea! I made just three JT65C QSOs, but am quite happy for now.

G4NNS: Brian brian@brcg4nns.org discusses his GHz activity since Jan – I was on 10 GHz the weekend of 26/27 Feb. My RX performance was very bad. Investigating it, I found water in the corrugations of my horn. I re-built the heater that is supposed to prevent condensation; but the problem persisted. I concluded that it must be in the seal of the PTFE membrane at the mouth of the horn. It was a dry weekend, so I dried out the horn and left the membrane off. RX was back to normal! I made 4 CW contacts with F51GK, IW2FZR, UR5LZ and OZ1LPR. I found no NA stations on CW, although I could see some digital signals but no

reports of successful contacts on HB9Q. The low level of activity, allowed time for some measurements of libration spreading – see following picture. In particular, I made the attached screen shots of my echoes at my moonrise and at zenith showing the big difference in libration spreading between moonrise and zenith. I was next active during the 9 cm Dubus contest on 20/21 March. I had 16 CW QSOs during the contest including 2 initials, and even had another 3 QSOs after the contest on Monday with another 2 initials to bring me to #39. I think this is the most activity I have experienced on the band. However, my RX performance wasn't the best with rather poor and variable Moon noise from 0.5 to 0.9 dB that needs to be investigated; altogether overall it was a very enjoyable 3.4 CW EME session.



Change in spreading between moonrise and set at G4NNS

IZ1BPN: Stefano's iz1bpn@libero.it 23 cm SSB Contest score was down this year -- I did not have good luck during the SSB Funtest. On Saturday, a very strong wind blown through my valley all the time. There was no way to operate the dish safely. I had just one hour on Saturday night of almost calm conditions and during this short period was able to make a few QSOs. I worked using SSB on 30 Jan DG5CST (59/59) JO, OK2DL (59/59) JN, SP3XBO (59/59) JO, JH1KRC (55/57) PM, VK5MC (55/55) QF, CT1FGW (55/55) IM and OK2ULQ (55/57) JN for a total of $(7 \times 2) \times 5 = 70$ points. It was real fun making SSB EME QSOs!

JH1KRC: Mike jh1krc@syd.odn.ne.jp participated in the 1296 SSB Funtest -- I used 600 W to my 4.4 m TVRO dish with OM6AA super choke feed and HB9BBD LNA. Just after struggling to replace and upgrade my hardline coax, I was QRV for the contest on 30 Jan. Unfortunately, it was very noisy during the NA window and I made no QSOs. Only one SSB signal was hard, but I never got the call. My EU window was very early in the morning here in JA. I worked on SSB DG5CST, OK2DL, SM5DGX for an initial (#), IZ1BPN and LZ1DX for a score of $5 \times 2 \times 5 = 50$ points. Heard was OK2PE. During the Funtest hours, I also enjoyed a CW QSO with CT1FGW (569/579) for an initial (#). There is lower 1296 CW activity nowadays from Japan as many of the CW EME ops have moved to the higher microwave bands.

JJ1NNJ: Koichi jj1nnj@extra.ocn.ne.jp took part in the 13 cm Funtest at the end of Jan but did not have much success -- One Week before the SSB contest, I covered the 21 cm hole in the center of my 3 m dish with aluminum foil; but there was no change in Sun noise. [There should be very little difference based on the change in area of the dish's surface; ~ 0.02 dB]. In the SSB Funtest on 13 cm, I heard nothing during the NA window. In the EU window, I caught G4CCH, SP3XBO and another whose call I could not identify. But, I had difficult with copy of all and ended with a total of zero SSB QSOs! Other contacts were made using CW on 29 Jan with G4CCH (559/569) (XB 2320), on 30 Jan with PA0PLY (O/O) (XB 2320) #27 on sked, 31 Jan OH2DG (569/569) (XB 2320) and JA6XED (559/559).

KB7Q: Gene geneshea@gmail.com is focusing his efforts on 23 cm for the next few months and dxpeditions to needed US States -- Jan was still warm enough to fire up my portable propane heater and work some 23 cm EME from the barn. I QSO'd using JT65C with my 1.6 m folding dish and 275 W CX2SC (27DB/24DB), RD4D (14DB/8DB), OH2DG (10DB/O), OM4XA (24DB/19DB), DJ3JJ (25DB/O), UA9FA (22DB/25DB), G4YTL (26DB/18DB), PA2DW (29DB/O) and N5BF (21DB/26DB). I then upgraded to a W2HRO 2.4 m folding dish and finished out Jan working K5DOG (15DB/16DB), PA3FXB (23DB/O), SM6CKU (11DB/O), ES6FX (21DB/22DB), N1AV (25DB/21DB), GM0PJD (27DB), W2HRO (26DB/24DB) and N5BF (21DB/21DB). On CW, I added XE1XA (339/O) to mixed initial #60* on 23 cm EME. The Montana WX then turned cold (-21 deg F or -30 deg C), which reduced my operation from the barn in Feb. Instead, I spent my time making dxpediton plans. As Joyce and I both have our Covid vaccines, and our self-contained RV that lets us stay apart from the less careful, we decided to hit the road and activate some States on 23 cm EME. We made an initial trip on 19 March to Arizona (DM23vs). Sometimes (during dxpeditons) you get the bear and sometimes the bear gets you! AZ was one of those times where the bear almost won. The 2.4 m dish by nature of its size and stiff fiberglass ribs is sometimes difficult to open. Pointing straight up for a gravity assist helps, but imagine my surprise when I couldn't budge it past a certain point. Finally, I pulled the fabric off four rib-tips and was able to get going. After a pleasant afternoon of working folks on 23 cm in both JT65C and the new Q65 30C/60C modes, I sprayed the fabric on the dish with water and it stretched enough to get back to its normal opening and closing action. As a bonus, I blow my best preamp by tripping on the PTT cable and disconnecting it. Who knew Murphy is a desert dweller! I must say Q65 is an impressive mode. Even with the faster 30 second sequences, I was working stations easily. All in all, not a bad session for the Moon being at apogee. The next day, we had serious winds, so no EME. I worked on 19 Jan OK1KIR (10DB), DF3RU (13DB), ES3RF (24DB), OK1IL (15DB), HB9Q (3DB), N1AV (24DB), KA1GT (25DB), SM6CKU (9DB), N1AV Q65 (20DB), KA1GT Q65 (25DB) and KB2SA Q65 (26DB). Our next stop is New Mexico on 28/29 March – [successfully taking place as this NL is being completed]. We will then head over to Arkansas on 16/17 April, Mississippi on 29/20 April and on 22/23 April. Of

course, on the homeward leg back to Montana, we can add a few more stops if needed. I will publish the details of each State's operation as I figure things out. See <http://kb7qgrid.blogspot.com> for last minute information.



KB7Q at DM23vs in AZ

KL6M: Mike melum@alaska.net broke his leg skiing in beginning of Feb, and as a result missed the 70 and 9 cm contests -- I had surgery two weeks after and had a titanium plate, nine screws and tension cable installed all the way through my fibula and tibia. After, I was feeling good enough to try some EME. I had a pal come over to help me change feeds from 13 cm to 70 cm for the Dubus contest. I sat in the truck and yelled commands. The attempt failed due to a couple connector issues. We made another attempt. This time my 17 year old feed winch stripped a gear and stuff came crashing down. I manage to get the dish stowed to protect it from the usual spring winds. I don't anticipate having it repaired until at least the 23 cm Dubus on 15 May.

KNOWS: Carl carlhasbargen@q.com sends his report on his 13 cm activity during the Dubus and SSB Contests and 9 cm activity Dubus weekend -- I spent a good deal of time trying to come up with a patch feed for 13 cm. The Dubus 13 cm weekend seemed an opportunity to look for CW signals using my 1.8 m back yard dish. I thought I might compare the results between my septum feed and the patch. I also had to replace the linear actuator used to control my dish's tilt due to rusting. My SSPA and other gear seemed to be ready, so I was quite disappointed when I could neither receive signals or generate any output power. I changed from WSJT-X to WSJT-9, traded out my signal link sound interface, changed sequencers, tried my backup TS-2000X, changed preamps and a variety of cables. Nothing worked, so gave up for the weekend. In retrospect,

it may have been something as simple as the software not using the correct I/O sources. Anyway, I set up again on 13 cm. This time, I saw a number of CW signals on my waterfall, but could not audibly hear any of them. I did work VE6TA (14DB) and G4CCH (15DB) using JT65C. The reports suggest I should easily hear 125 W from a 3.6 m dish. My dish is blocked to the west, so JAs were not an option. My Moon window was too late for many NA stations and too early for EU stations. It was nice to complete my first 13 cm QSOs in several years and the first from my back yard, but I was disappointed by the low activity. I did much better on 9 cm in March. I again tried to "piggy-back" on the 9 cm Dubus contest. Using JT65C, I worked on 19 March PA0BAT (16DB) for mixed initial #12*, on 20 March OK1KIR (19DB), PA3DZL (14DB), DF3RU (20DB), W5LUA (18DB), OK1CA (11DB) and K2UYH (15DB), and on 22 March, after the weekend G4CCH (17DB) and OK1DFC (24DB). My new MFJ-495 keyer has already failed and I am thinking about using an Arduino-based keyer. [Carl is planning to retire this month to have more time to devote to EME].

LZ1DX: Ned lz1dx@lz1dx.org reports on his activity in Fun SSB Contest on 23 cm -- I worked using SSB and CW as noted on 30 Jan OK2DL (59/59), DG5CST (59/58), OH1HY (579/569), JH1KRC (57/57), OK2ULQ (579/589), OK2ULQ (55/57), OK2PE (579/589), SP3XBO (579/579), SP3XBO (55/55) and CT1FGW (579/579) and (55/55). Final Funtest result was 6x2x4 for 48 points.

N1AV: Jay whereisjay@gmail.com announces that he will be QRV from Hawaii on 1296 EME from 1 to 5 Oct -- See my website, <https://www.n1rwy.org/?p=803>. It has more details and updated information as the date becomes closer.

NC1I: Frank frank@NC1I.COM remains very active on 70 cm -- I will not list all of my QSOs since my last report that covered activity through 6 Jan. Since then, I have added 168 70 cm QSOs. Activity and conditions have been good and it seems that there are almost always new stations to be worked. It is absolutely amazing how many of the new stations are running IC-9700s! Here is a list of initials and notable QSOs: I worked using JT65B unless noted otherwise on 18 Jan R3VE (25DB/18DB) with a single 26 el yagi and 50 W for digital initial {#450} and UR4LSK (24DB/O) with 2 x 21 el yagis and 50 W {#451}, on 22 Jan SP2QVH (25DB/13DB) with 2 x 21 el yagis and 75 W -his first EME QSO {#452}, on 27 Jan UA9UPI (25DB/19DB) with 2 x 18 el yagis and 60 W {#453} and UA3MBJ (30DB/17DB) with single 20 el yagi and 9 W (!) {#454}, on 28 Jan DB8WK (17DB/8DB) with 2 x 29 el yagis and 250 W {#455}, on 29 Jan RA9UU (28DB/22DB) with single 16 el yagi and 35 W {#456}, on 30 Jan RA9UKW (26DB/22DB) with single 21 el yagi and 75 W {#457} and UA3RAW (15DB/23DB) {#458} for 1st EME QSO, on 31 Jan VP8EME (16DB/O) with single 50 el XPOL yagi and 300 W (very nice surprise {#459} and new DXCC, on 31 Jan EA2LU (27DB/17DB) with single 13 el yagi and 75 W {#460}, on 2 Feb SM3LBN (23DB/16DB) with single 8 el yagi and 50 W {#461}, on 13 Feb G1BHM (25DB/10DB) with single 18 el

yagi and 75 W {#462}, on 16 Feb 9A5M (14DB/10DB) with 2 x 33 el yagis and 250 W on horizon only {#463} and on 16 Feb G1SDX (28DB/21DB) with 4 x 20 el yagis and 100 W {#464}, on 18 Feb G7CQH (28DB/4DB) with single 18 el yagi and 100 W on-horizon only for his first 70 cm EME QSO {#465}, On 22 Feb KK6FAH (26DB/11DB) with 2 x 28 el yagis and 25 W for first 70 cm EME QSO {#466} and JA1TGO (23DB/10DB) with 8 x 27 el yagis and 50 W {#467}, and on 27 Feb AE0CM (30DB/27DB) with single 16 el circular polarized yagi (1.7 m) and 40 W for first 70 cm EME QSOs {#468} and F1RJ (16DB/7DB) with single 21 el and 150 W on horizon only {#469}. I was on only briefly at the end of the Dubus 70 cm CW Contest and worked using CW on 21 Feb SP9VFD (559/559) for initial (#), I2FHW (579/569), G4RGK (569/579), UA3PTW (589/599), VE6TA (579/589), DL6SH (579/579) and OK1TEH (539/O) for a total of 7x7. Late Feb through early March, it was a very windy period. Local winds were clocked as high as 130 kmh. I have not fully tested everything since, but all of my antennas "appear" to be OK. I am making progress with my 23 cm station repairs. We found water in the AZ pulse sensor that was likely the source of my readout problem. There is still an RX problem that needs to be located and fixed, but I don't think that it will be difficult to resolve. Hopefully, we will have the 23 cm station back in operation for late March. All QSO's through 1 March have been uploaded to LOTW. I am a few weeks behind with paper QSLs, but should be caught up with those by the middle of March.

OK1CA: Franta fr.strihavka@seznam.cz was QRV in both the 13 cm and 9 cm Dubus Contests with his 10 m dish – On 3400, on 20/21 March, I made 17 contest contacts. I am pleased to report that 5 of these QSOs were with OK stations. [Edited by K2UYH].

OK1KIR: Vlada vlada.masek@volny.cz and Tonda send info on their end of Feb/March EME -- Due to Covid restrictions we decided not to operate in the SSB competitions. However, when we checked the HB9Q logger we discovered that VP8EME was on the 70 cm band; and we changed our minds. We installed our 70 cm on Sunday eve, 31 Jan and started searching for VP8EME. He was then not active on the HB9Q logger. We worked using JT65B at 2057 GI6ATZ (20DB/O) on the horizon only for digital initial {#280} and new JT DXCC, 2150 F5OAU {11DB/15DB} {#281}, 2238 JH7PAV (22DB/17DB) {#282}, 2258 OK2AQ (22DB/15DB), 2305 DK1KW (23DB/20DB) and 2313 DB8WK (16DB/14DB) {#283}. After midnight the band became silent to allow some short sleeping. In the morning on 1 Feb, we worked at 0314 NC1I (1DB/7DB) and then 0322 our CQ was responded to by VP8EME {16DB/24DB} {#284} for GD field, 1st VP8-OK 70 cm QSO and a new DXCC. We also tried with NY2NY (22DB/?) without a success. Later in the morning we switched to 13 cm to check the VE3IKU beacon (569) on 2304,020. In the 70 cm part of Dubus Contest using CW, we QSO'd on 20 Feb at 1052 I2FHW (559/O), 1124 UA3PTW (569/579), 1138 UT5DL (O/O), 1145 DL6SH (569/559), 1245 OZ4MM (569/569), 1314 DG5CST (569/579), 1330 PA3DZL (569/559), 1358 SP9VFD (559/559) for initial #400, 1603

PA2V (559/559), 1636 DK3WG (559/559), 1642 G4RGK (559/559), 1729 SP6JLW (549/559), 2029 VE6TA (559/559), 2047 DL7APV (589/559), 2110 LZ1DX (559/559), 2204 WA6PY (O/O) and 2218 DF3RU (569/579), and on 21 Feb at 1329 OE5JFL (569/569), 1352 ES5PC (559/559), 1433 DL9KR (589/589) and 1501 OH2DG (569/569) for a total count 21x21. Only heard was DL6KAI in QSO with DL9KR. Due to Moon in apogee some QSOs were difficult and also Faraday was often embarrassing. Out of the contest using JT65B we worked on 20 Feb at 1215 DL8DAU (21DB/20DB), 1224 VK2CMP (25DB/20DB), 1232 BD9BU (25DB/17DB), 1509 OZ1SKY (19DB/17DB) {#285} and new JT DXCC, 1534 DM9EE {12DB/10DB} {#286}, 1702 DL9LBH (25DB/23DB) {#287} and 1839 KU4XO (18DB/25DB) {#288}, and on 21 Feb at 1146 PA5Y (21DB/17DB) {#289} with fixed el. We copied VP8EME (18DB) at +50 degs from horz as predicted. Our operation stopped after 1700 due to Covid-19 evening travel restrictions. We were on 23 cm using JT65C unless noted on 28 Feb and worked at 1825 SM5DGX (1DB/1DB), 1909 YO2BCT (4DB/8DB), 2114 DL1RME (15DB/O) for digital initial {#405} – to complete this QSO we switched from circular pol (CP) to our rotatable linear feed, 2110 heard by PA0PZD {13DB} on lin feed before reinstalling CP feed, 2206 using Q65-60C LA1TN (17DB/6DB) {#406}, 2216 partial F6HTJ (23DB/21DB) but disappeared, 2244 ON4BCV (21DB/17DB), 2256 OH3MCK (10DB/13DB) and 2332 using Q65-60C GM0PJD (15DB/1DB), and on 28 Feb at 0036 IW3HVB (13DB/12DB) {#407} and 0044 CX2SC (7DB/10DB), 0059 using CW IW3HVB (559/579), 0519 W2HRO (10DB/8DB) and 0527 LY3DE (10DB/16DB). Switching modes from JT65C to Q65-60C or vice-versa creates a big mess, especially when weaker signals are around. We do not have any good ideas on how to improve the situation. At present, you need to use the HB9Q logger as a liaison.

OK1TEH: Matej ok1teh@seznam.cz keeps active with his single yagi on 70 cm and shows that you don't have to be a big station to participate in a CW contest -- I was QRV in the Dubus CW EME Contest on 432 with my small setup consisting of a 750 W SSPA and 1 x 23 el DK7ZB yagi. I was very happy to have logged 4 random CW contacts with SP6JLW, DL7APV, UA3PTW and NC1I. The QSO with Andrzej (JLW) especially pleased me. It was my 150th mixed initial! SP6JLW is perhaps the smallest station I have worked on CW EME on this band. On Sunday, I heard DL9KR very well; however, the propagation was changing rapidly and degradation was 2 dB below the perigee conditions. Despite the exchange of reports, a contact wasn't completed (NC). Worst was that I suffered from very strong noise around 050, about 5 kHz wide even at high elevation - sorry Jan. Heard were DF3RU (O), LZ1DX (M), OH2DG, VE6TA and WA6PY. On Sunday evening just before the end of contest (2300), I copied on 432.028 a CQ with a "C" in callsign, which I believe was DG5CST. During the days following the contest when Moon pathloss decreased, I worked using JT65B UT2EG (26DB/21DB) for a mixed initial (#*) and had a perfect CW EME QSO with DG5CST (539). Later I also worked using JT65B OZ1SKY 28DB/29DB), who had only 4 x 16 el yagis and 300 W. (Two

days after our EME contact, there was a good tropo, and we had nice SSB chat about our EME QSO at 736 km). The next EME stations in my log were PA4VHF (24DB/24DB) and DM9EE (23DB/30DB) (#*). I try to be active during every Perigee weekend, look for me on HB9Q chat.

OK2AQ: Mirek mirek@kasals.com reports that he presently can only operate 432 -- We are restricted in travel due to Covid. Consequently, I can only operate from my home in Brno where I only 70 cm EME with one 8 WL H/V yagi in a noisy environment. Nevertheless, I made 26 QSOs during Jan and Feb, of which 6 were digital initials {#}. I added using JT65B S56P (O/O), ES3RF (O/O), **SQ9CYD (O/O)** for **DXCC 23, OE5JFL (22DB/24DB) DXCC 24** and UB4UAA (O/O), and using Q65-60B PA4VHF (24DB/21DB). I hope the situation will improve and to be able to go to my second QTH in the country where my microwave EME station is located before too long.

OK2DL: Marek ok2dl@seznam.cz was active with his 6 m dish in SSB Funtest on 23 cm -- It wasn't clear until the last moment if I could operate in the first EME contest of the new season due to the very cold weather. Even on Friday morning my dish was still fully covered by snow. Luckily it melted in the afternoon. [See Marek's report in the Dec NL to see his dish iced up]. The contest was divided into two parts for me; the first from 0000 to about 0900 and the second part from 1900 to 2400. During my western window (first part), there was not much activity. I thought that activity might get better later (second part), but sadly it was low during the whole weekend. On Saturday during the day, the cold front arrived resulting in the freezing of the dish's parking mechanism. I had to use a hammer to get it moving. Half of the dish was covered with snow, and the weight imbalance cause the elevation drive to barely move. I was worried that the dish might break. I am sure that others were experiencing similar problems. I did receive very nice signals from OK2PE, who called me with his new dish. His SSB signal was beautifully legible and I was even able to recognize him by his voice. Overall, I made 19 contacts and 468 points. Last year, I worked 33 and the year before 45. I hope that SSB Contest for 2022 will be better! Logged were DG5CST (59/59), N8CQ (59/55), OK2PE (55/58), VE4SA (57/53), W3HMS (559/57), SP3XBO (58/59), VE6BGT (58/58), XE1XA (55/55), KD5FZX (57/54), N5BF (54/44), SM5DGX (58/59), OM4XA (559/58), LZ1DX (59/59), JH1KRC (55/59), VK5MC (57/56), OK2ULQ (55/58), IZ1BPN (59/59), CT1FGW (55/55) and EI2FG (51/54). [TNX to OK1TEH for translating].

OK2PE: Karel ok2pe@kbb.cz as announced last month is QRV on 23 cm with a new 3.2 m mesh dish; in the last NL, we showed the wrong photo (his old dish); the correct dish is now shown below -- I operated in the SSB Funtest and QSO'd on SSB OK2DL, DG5CST, N8CQ and OK2ULQ, and on CW LZ1DX for a score of $4x2x3 = 24$ points. I heard ON0EME with strong signals and am looking forward to next Dubus 23 cm CW EME Contest. On 22 March, I was echo testing on CW, when I was called by DU3T. (I couldn't believe my ears), his signal was booming in! I worked on 23 March JA6AHB with good signal too, on 24 March PA3DZL,

IK3COJ, IK1FJI and I5YDI, on 26 March IK3MAC with tropo-like signal, I5MPK, PA3FXB, IK1FJI and ES3RF, on 27 March PY2BS, and on 28 March OK1DFC. I also tested with OM4XA and heard him well but we didn't complete a QSO. Overall, I added 13 CW initials and 2 new continents for WAC. I am missing only Africa and Oceania. The snow is finally gone, so I can try some further improvements. My next project is to upgrade my Septum feed by adding a choke ring.



OK2PE's new 3.2 m dish during the SSB Funtest

OM4XA: Fero cesnekf@gmail.com was QRV for the 23 cm SSB Funtest with his 3 m dish -- Although, I only made two contest contacts, one with OK2DL SSB to CW and the other with DG5CST for my first EME SSB QSO; it was great fun.

ON0EME: Eddy (ON7UN) ejespers@telenet.be reported that on 11 March the ON0EME EME beacon suffered from a severe passing wind storm -- We noticed that the dish was not pointing correctly. After checking, we found that the AZ gearbox was OK, but that the azimuth axis reference point had come apart from the mount. This is the most difficult part of the mount to reach. Most likely the antenna will need to be lifted with a crane to carry out the repairs. We might look into another solution to turn the AZ. Thus, the beacon may be down for some time. [Last info is that the Beacon is still down. The team is working to get it back on, but they have not found a quick solution]. See link at <http://on0eme.be/> for actual beacon status.

OZ4MM: Stig gsvestergaard@gmail.com sent made it on for the 70 cm Dubus Contest with his 10 m dish -- I worked 22 stations on CW. Condx were OK, but not perfect by far. I had not been on 432 since May, but my system worked very well. I was happy to have logged 2 new initials with DG5CST and SM5PEO. I would have liked to see more CW activity, but it was good to be QRV.

PA0PLY: Jan pa0ply@pa0ply.nl wrote about his operation in the 13 cm Dubus contest -- During the contest on 23/24 Jan I worked 11 stations on CW and one on JT65C. QSO'd were G4CCH (559/559), OK1KIR (559/559), OK1KKD (559/559), JA6AHB (18DB/17DB) on JT65C - too weak for

CW, ES5PC (569/559), DF3RU (549/559), OH2DG (599/569), UA3PTW (559/559), DG5CST (529/549), DB6NT (559/559) and PA3DZL (559/539). The moonpass on Friday night (23 Jan) did not have much activity. No NA stations were copied here; I only heard OK1KIR calling CQ on 2304. On 27 Jan I QSO'd VE6TA (15DB/15DB) using JT65C and (579/O) on CW. During the SSB weekend, on 30 Jan I worked on sked using CW JJ1NNJ (O/O) XB. **During the Funtests**, I listened for a while but stopped after finding disappointingly low activity. Although I do like CW QSOs, I believe that allowing Digi-mode QSOs would greatly increase the activity on 13 cm. There are many stations with Digi capability, who would try CW as well. I was happy that my RX extension for 2400 worked fine, but I had troubles with my EL actuator. It failed several times just before my sked. It turned out that the motor axil adapter did not fit the actuator spindle. I plan to replace the motor during summer; the original motor was full of water and stopped. I then refurbished another motor in hope of having my EL system working properly again. Unfortunately, it failed as well. I then replaced the complete actuator with a spare one, and now all is operational again. Just before the winter WX arrived, I took all my 13 cm stuff off the dish to prepare for 3 cm operation. On the advice of G3WDG, I made a SM6FHZ feed to replace my original Andrews feed. It should greatly improve my RX performance. The preamp is now directly connected to the feed, eliminating about a 2 m length of WG. In the meantime, I included the possibility of 10450 RX. I plan to sked JA6XED just as soon as all is operational.

PA3DZL: Jac pa3dzl@icloud.com is enjoying his 3.7 m solid dish -- **During the 70 cm Dubus Contest**, I worked using CW I2FHW for initial #284, UA3PTW, DL6SH, OZ4MM, OK1KIR, OE5JFL, DG5CST, SP6JLW and DL9KR for a total of 9 QSOs. Later I switched to JT65B unless noted and worked OZ1SKY (27DB) for digital initial {#277}, KU4XO (22DB) {#278}, G4YTL (19DB) {#279}, VE6TA (14DB), NC1I, HB9Q using Q65, DL7APV using Q65, DL9LBH (21DB) {#280}, SQ2SAT (28DB) {#281}, DK4RC (9DB) {#282}, EA5CJ (14DB), F5OAU (18DB), HB9Q (3DB), OK1TEH (23DB) with a single yagi, PA2V (9DB), JJ3JHP (23DB) {#283}, DL9LBH (24DB), DB8WK (29DB) {#285}, DN5HR (18DB) {#286}, BD9BU (24DB), S56P (12DB), JA6AHB (14DB), DK3WG, S57M (13DB) {#287}, PA2CHR (12DB), HS0ZOP (14DB) using Q65, ES3RF (17DB) using Q65, W2HRO (19DB), LU8ENU (25DB) {#288}, KF8MY using Q65, LU8ENU (20DB) using Q65, DL8FBD (18DB) {#289}, HS0ZOP (14DB) using Q65, G4YTL (13DB) using Q65, SM5EPO (21DB) using Q65, DG5CST (7DB) using Q65, UT2EG (12DB) {#290}, DL5FN (9DB) using Q65, SM3KPX (18DB) {#291}, EO50FF (16DB) and DD0NM (22DB) {#292}. I was also QRV for the 9 cm Dubus/REF Contest with his 3.7 m dish, a RA3AQ feed, 150 W @feed SSPA and 0.5 dB NF LNA. **I worked 21 QSOs** compared to 17 last year. I had initial with DL4DTU (559) #69. The strongest signals were from OK1CA, OH2DG, W5LUA and K2UYH. It was nice to QSO VK3NX using XB. Conditions Saturday were not as good as on Sunday. I could measure 0.3 dB of moonnoise on Saturday but 0.35 dB on Sunday. Both were less than the usual >0.4

dB. Outside the contest I added a 2nd initial with VE6BGT (579) #70. I also made 3 Digi-mode QSOs. I am looking forward to 10 GHz part of the Dubus Contest in April.

PA7JB: John pa7jb@ziggo.nl is QRV again on EME after almost 2 years, and now on 24 GHz – I made my first 1.25 cm EME QSO on 27 March with PA0BAT using Q65. After this QSO, I worked OZ1LPR also using Q65. I am seeing 1.3 dB of moonnoise and have 24 W of output power. I will watching the HB9Q logger to see if I can work some old friends to work on Q65 or CW. I want to thank DL7YC for help with the TWT, PA3DZL for help with my computer and especially PE1CKK for lots of help and advice with this project.

SM6FHZ: Ingolf ingolf.fhz@gmail.com writes about his participation in the 70 cm Dubus Contest -- It has been some time since I was last on 432 EME. I had to do some maintenance to get the rig in shape for the contest. I tested the rig Friday afternoon and all worked as expected with good returns from the Moon. However, on Saturday when starting to call stations, I got some really nasty QRN. I have only a few neighbors and a fairly remote QTH. Then I realized the sizzling noise from the direction of my PA. I removed the HV cable from the PSU to the PA, but the noise remained. I concluded its origin was in the HV-PSU. **I managed to make 3 QSOs in the contest** before discovering the problem. I think my PSU has caught a coronavirus. I have stayed away from the Covid, but clearly my PSU was more susceptible to corona. I hope it is something simple, but I need to be careful with 3+ kV HV. Why does the trouble manifest itself when it is contest time? Even when you check everything in advance for proper and stable operation.

SP3XBO: Marek sp3xbo@op.pl reports on the 1296 SSB Funtest and a 13 cm QSO -- On 30 Jan I worked on SSB OK1CA (59/59), DG5CST (57/557) SSB to CW, IZ1BPN (55/55), LZ1DX (55/55) and OK2ULQ (55/55) for $(4x2+1)x4 = 36$. On 31 Jan worked on 13 cm G4CCH. My rig on both 23 and 13 cm was a 3.6 m dish with a 300 W PA.

SP6JLW: Andrzej's sp6jlw@wp.pl team were active during 70 cm Dubus Contest – This contest was our first EME contest for 2021. Pandemic restrictions have thwarted our previous contest plans. Our result of 16 contacts is similar to last year. What was noticeably different was the addition of an initial with OK1TEH. [Matej was very pleased]. QSO'd were I2FHW, DG5CST, OZ4MM, UA3PTW, OE5JFL, DL6SH, DL7APV, DK3WG, OK1KIR, PA2V, VE6TA, OK1TEH, WA6PY, DF3RU, PA3DZL and SP9VFD. [TNX to OK1TEH for translating].

SP9VFD: Raf rgrqgorow@gmail.com operated the 70 cm Dubus CW EME Contest and also reports on his plans to add 23 cm EME -- During the contest on 20/21 Feb, WX conditions were very good. The Sun was shining, temperature was over 0°C and no wind. It was my second participation in this contest. I'm still a newbe to 432 EME. I was active on 432 CW only using my homemade 8 x 23 el yagi array. 432 conditions seemed worse than one year

ago. My own echoes were sometimes very very weak and received signals were not as strong as last year. I worked UA3PTW, I2FHW, OZ4MM, OK1KIR, SP6JLW, DL6SH, DG5CST, OE5JFL, DL7APV, ES5PC and NC1I for a total of 11 x 11. I heard WA6PY and VE6TA. New stations in my log were OK1KIR, DG5CST, OE5JFL and NC1I. My plan for this year is complete a 6.4 m dish (f/d = 0.4) that I have been working on. It is 100% homemade construction, and consists of a hub and 24 ribs. It is ready and waiting in the garden for spring and better weather. I have to make a few rings, some junctions and cover the surface with mesh. There is lot of work to do, but I want to be active on 23 cm as soon as possible. Please keep your fingers crossed for my new dish construction.



SP9VFD's 432 8 x 23 el yagis – coming soon 6.4 m dish

UA3PTW: Dmitry ua3ptw@inbox.ru was active on 70 cm EME in Jan/Feb on 70 cm and added initials using JT65B with UA3RAW, SM3LBN, G1BHM, 9A5M, UA9UPI and RA9UU. [Thanks to DK3WG for forwarding this report].

UA4AQL: Alex ua4aql@inbox.ru was active on 70 cm EME in Jan/Feb (in LO20qb) – I added using on 70 cm initials with DG5CST using Q65 and UT2EG using JT65C. [Thanks to DK3WG for forwarding this report].

VE6BGT: Skip macaulay.skip@gmail.com missed the 9 cm Dubus Contest but did get on the band -- I have been waiting to use my new 150 W 9 cm feed assembly since I built it last year. After a bad switching supply destroyed one of the FETs, my plans were put on hold. This was the first opportunity I have had to try again. I built an old school dual voltage power supply to power it. I got it all hooked up and tested the night before the 9 cm contest, and worked a couple of stations including VK3NX (569/579). Of course, as soon as the Moon rose for the contest, the high winds arrived, and both days made it impossible to operate. Monday was better and I arranged a sked with WA9FWD. I was surprised to see so many on the Moon. I worked WA9FWD (579/569), OK1DFC (569/559), PA3DZL (579/579), DF3RU (579/579), G4CCH (589/579), G4NNS (579/569) and VE6TA (579/579). I am quite pleased with my new feed and amplifier assembly and the new power supply worked very well for its first real workout.

VE6TA: Grant ve6ta@xplornet.com sent us the following info about his operation in the Dubus 70 and 13 cm CW Contests -- I worked during 13 cm CW contest OK1KIR, VE6BGT, G4CCH, ES5PC, OH1LRY, OK1KKD, OK1CA, W5LUA, OH2DG, UA3PTW, KL6M and K3WM for an initial (#). I also listened and recorded the VE3IKU/b for Boris once he had it going. His beacon had nice signals here. He was a solid (559) on my end. I also worked WA9FWD with great signals just before the end of the contest. My score was 13x11 for the weekend. Next switched over to 432 before the -30 deg C temps rolled into VE6. I worked on 70 cm VP8EME on JT65B prior to the contest on JT for DXCC #49 and HS0ZOP after the contest for DXCC #50 on 432. During the Dubus 70 cm CW Contest, I worked I2FHW, OK1KIR, SP6JLW, UA3PTW, DL7APV, OZ4MM, WA6PY, LZ1DX, LX1DB, ES5PC, NC1I, DL6SH, G4RGK and DF3RU for a total of 14x14 for the weekend. It was good to hear all the activity in another enjoyable contest. We certainly did miss the activity of G3LTF and KL6M; I wish them a speedy recovery.

VP8EME: Mario (no email known) is active on 70 cm EME with a 50 el XP yagi (25 el for V-pol and 25 el for H-pol), a 300 W SSPA and a new IC9700. Mario doesn't have a good LNA and thus his RX is not the best, although he has worked several 4 x yagi sized stations. For some more info about his operation and Falkland ham radio you can watch <https://www.youtube.com/watch?v=URwjprUrAww>. [TNX to OK1DAI for relaying this info].



VP8EME, Mario in his shack

WA6PY: Paul pchominski@maxlinear.com had a shoulder injury that limited his ability to work on his antennas, and now his operation -- I was hoping to be QRV on at least 24 GHz this year, but I had my shoulder surgery in March. It appears that the recovering will take longer than I had hoped. I will be unable to do any EME activity for at least the next few months. I missed the 9 cm contest and will miss the 3 cm contest as well. [Paul was QRV in the 70 cm Dubus Contest].

K2UYH: I (Al) alkatz@tcnj.edu was limited by WX and also noise problems at the end of Jan and Feb – I tried to be QRV for the 1296 SSB Funtest on 30 Jan, but had a terrible noise problem and gave up in frustration with no contacts. The next day, I switched feeds to 13 cm, but had very weak

echoes and also made no QSOs. I still do not know the cause. I planned to make serious effort on 432 in the **Dubus Contest** on 20/21 Feb with a new 1 kW SSPA, but the WX was terrible and I was afraid to untether my dish. So, no QSOs again. I was on 432 the next weekend looking particularly VP8EME but no luck finding him. I did work on 27 Feb using JT65B at 0201 DB8WK (19DB/15DB) for mixed initial #1027* - his first EME QSO, 0215 KU4XO (26DB/15DB) # 1028* in SC, 0237 PA3HDG (8DB/10DB) and 0258 UT2EG (7DB/O), and on 28 Feb at 0333 UA4UAA (21DB/15DB) #1029*. I had a conflict with a computer conference (TCF2021) that I have run for 45 years and missed the first day of the **Dubus 9 cm Contest**, I did work outside of the contest using JT65C on 20 March at 2339 KN0WS (14DB/21DB). No one else was around at the time. On the second day, on 21 March I QSO'd at 0150 W5LUA (569/579), 1925 PA3DZL (569/579), 1931 WA9FWD (559/569), 1935 ES5PC (569/589), 1940 OK1CS (569/579), 1946 OH2DG (569/579), 1934 SP3XBO (559/569), 2001 G4CCH (569/579), 2008 DF3RU (569/579), 2013 VE6TA (559/579), 2033 LX1DB (579/579), 2040 OK1KIR (579/569), 2107 VE4MA (559/559) and 2112 G4NNS (569/579); all on CW for a total of 14x12. The following week, I decided that I had to find the source of the 1296 noise. I tried a number of approaches including searching with a small yagi. It turned out that the cause of a 432 preamp that was coupling in to the 1296 RX line at the relay I use to switch bands. I removed the 70 cm preamp and 1296 was back to normal. The next day, I worked (24 March) at 0700 DU3T (559/579) CW for initial #423 and DXCC 119. I was on 1296 again on 28 March to work on JT65C at 0100 DK4RC (18DB/16DB), but lost another preamp that ended my evening's operation.

NET/CHAT/LOGGER NEWS: **W3HMS** worked during the 1296 SSB Funtest OK2DL (57/559). **XE1XA** was QRV on 23 cm during the SSB Funtest and heard 4 stations. Max is looking for new ones. **OK1DFC** was QRV during the 9 cm **Dubus Contest** weekend with his new 2.6 m dish, but mainly on JT. **RA3LE** is QRV again on 432 with a single 26 el yagi and 1 kW. **F6GRB** (JN25ko) has moved to 70 cm EME with 2 x 18 el XP yagis and 50 W. He is working on QRO PA.

FOR SALE: **PA0PLY** has for sale his whole 70 cm station including his antenna because of terrible QRM problems. See for details http://www.pa0ply.nl/sspa_amplifiers.htm. **OK1TEH** still has for sale a 3 m solid dish with massive ribs that is usable for EME on 24 GHz. Any offer will be considered. For more info see ok1tehlist@seznam.cz. **UR5LX** is looking to buy a 24 GHz LNA preferably with a WR42 input. Contact Sergey ur5lx@ukr.net if you can help. **DF3N** has 3400 20 W, 50 dB gain 9 cm (SM3437-43L) SSPA with blower incl. shipping for EU220 in EU and 245 outside. Also, ARRA variable attenuator 0-30 dB/5 W (1.3-6 GHz). Contact Rainer for more info.

TECH: Moon tracking with Raspberry Pi by ON4KHG: Recently, I replaced the noisy (RF-wise, due to USB hubs) shack computer by a Raspberry Pi 4. It makes less noise and doesn't take much space. I operate it "headless" (no

screen nor keyboard) and I access it as from a laptop from anywhere in the house via my home LAN and VNC. I can access it also from anywhere in the world using remote.it (no port forwarding needed on my home router). For EME operations, one issue was the fact that as far as I know there is no moon tracking software available on a Raspberry Pi OS (GPredict doesn't allow moon or sun tracking). However, one interesting feature of WSJT-X is that it provides an azel.dat file including the coordinates of the moon. What is also available is the daemon "Rotctld" part of Hamlib. It is an antenna rotator controller that supports several rotator protocols. What was missing was the way to issue commands towards Rotctld to allow the antenna rotators (azimuth & elevation) to track the moon. My Raspberry Pi is connected to my antenna rotator controller (ERC-3D by DF9GR) via an USB (Raspberry side) to RS232 (ERC-3D side) serial connection. Having all this in hand with the help of ON4KDV, I wrote script in Python that 1) Extracts the moon azimuth and elevation out of the azel.dat file provided by WSJT-X, 2) Formats commands to drive Rotctld, 3) Refreshes every 4 minutes, and 4) For negative moon elevations, the antennas are parked. So, the system can track the moon without the need for specific 3rd party software (which is not available for Raspberry). Additionally, I have added an option in the script that allows you to manually enter an azimuth and rotates the antennas accordingly. The script is an executable, as an icon on my Raspberry desktop. This allows to you operate (digi) EME or terrestria from anywhere. If there is some interest, I'll describe it and provide the code on my website <http://on4khg.be>.

FINAL: The beacon news is not great. The 1296 Beacon remains QRT – see the ON0EME report. The 10 GHz DL0SHF Beacon should be QRV again very soon. The 24 GHz Beacon has a new SSPA and is expect to be QRV by the end of April.

► Regarding 47 GHz EME, we have heard that JA1WQF continues his tests with W5LUA. PA0EHG now has a 47 GHz TWT and preparing to become QRV. DC7KY now also has a TWT and is testing with DL7YC. JA1WQF is reported to have seen both these station on 47 GHz.

► The dates for the 2022 (not 2021 – already announced) have been set as follows: 2.3 GHz & up on 17/18 Sept, and 50-1296 on 15/16 Oct and 12/13 Nov, 2022.

► EA5DOM, EA3HMJ and other EAs are holding virtual meetings on EME and SHF. Presentations can be seen at https://www.youtube.com/channel/UCq_Ohta0X7jrMRR-aLMYrPA/videos.

► We almost made it before April. We tried. I was overloaded with other work. Matej stepped in. Most of this NL is written by him for the first time. I think he did a terrific job!

► The long Covidus winter was not a good time and many of our friends have passed away. Now a sunny and warmer spring is coming. We wish a full and speedy recovery to those with injuries (WA6PY, KL6M, G3LTF and any we missed) and good health to all. We hope to hear some more enjoyable news. Thank you for your support and hope to hear you off the Moon no matter what mode you operate. 73 and stay well, AI – K2UYH and Matej – OK1TEH.