

P40L ARRL DX SSB 2024 Story by W6LD

We started the week before the contest hoping everything would line up for a multi-two effort with our fourth operator (W0YK) participating remotely. A multi-single would have been the fallback. Several factors weighed in the final decision - whether the pre-release K4D remote feature was ready for primetime contesting, whether our ongoing inter-band interference challenges at the station could be managed, operator availability and whether band conditions looked like they'd support a fun experience on two bands for most of the 48 hours. In the end, we went with the multi-two and we're glad we did as it was loads of fun despite some challenges.

High band conditions were generally excellent (other than for several hours on Sunday when affected by a solar disturbance) and supported a great start with an excellent 717 first hour combined QSO rate by K1DG and WE9V on 10 and 15 meters.

Great conditions on the high bands are not necessarily the best for stations in the Caribbean since it can be difficult to get the attention of NA stations when the bands are wide open to EU, especially during the morning hours. Rates on 10 and 15 during the morning hours, while good, were lower than in many prior years.

In contrast to the high bands, low band conditions were very poor and our QSO totals on 160 and 80 were down substantially compared with prior years. We had 20+ fewer mults on 160. That had a big impact on total scores.

Inter-band interference was some of the worst we've experienced here and had to be "managed" by relying on band combinations which minimized the problems and otherwise living with some additional noise. That meant that at times our band choices were not necessarily optimal and cost us some QSOs.

As a partial work-around, we had set-up alternate transmit antennas for 40 and 80 meters 400 feet from the main antennas because our normal transmit antennas on those bands were killing the higher bands due to what is believed to be "rebroadcast" of signals from corroded junctions in an old ~3000 sq ft metal roof almost immediately under the transmit antennas. When we tried to deploy these alternate antennas in the heat of the contest, however, we had a series of amplifier faults (most likely to do mistuning, based on post-contest testing), so they were abandoned as the faults were causing too much of a distraction.

Extensive post-contest testing suggests that there have 4 and maybe 5 causes of the bad interference. We believe that two of the worst have

been satisfactorily resolved and there are plans in the works to resolve or mitigate the remainder.

Our experimentation with remote participation was mostly successful. This was our first time using the K4D with pre-release software that implements remote operation. It mostly worked great, even though there were a few features (like remote recording of voice messages, that had not yet been implemented), and it is totally straightforward to implement especially compared to working with RRC boxes. The "mostly" caveat is because we had several reports of "strangled" mic audio and a few connectivity issues, both of which we suspect to be due to local internet bandwidth and stability issues.

Except as noted above, the station performed without any hitches. We are still reaping the benefits of a complete replacement of all the towers and antennas in late 2019/early 2020.

Congratulations to all on the many fine efforts, especially another excellent showing by ZF1A in the M/S category and the J62K team, who were nipping at our heals through the contest.

As always thanks for all the QSOs! We really do appreciate each and every one.

73,

John, W6LD, on behalf of the P40L team (WE9V, K1DG, W0YK and W6LD)

Station (all towers on a 100x100' lot):

Rohn 45 tower (66'): Single boom 2-element shortened 40m interlaced with 4-element 20m (68') (JK2040, long-boom version); 80m Inverted-V (65'); 160m Double-L center-fed vertical dipole (65')

North Rohn 25 tower (56'): Single boom 5-element 15 interlaced with 6-element 10 (58') (JK1015 configured for dual feed)

South Rohn 25 tower (45.5'): Tri-bander (JK Mid-tri)

Receiving antennas: 4 Beverages controlled by K9AY 2x8 switchbox: JA/West-US (800'), East US (500'), EU (800') and East-West (AF and OC) (350')

Rigs: K4D and K3/P3 (K4D set-up for remote control using pre-release version of firmware)

Amplifiers: KPA1500 and Acom 2000A (configured for remote operation using Acom Ebox)

Logging software: 5 computers running DXLog.net; one remote using SoftEther to access the LAN