Special Edition – 2019 DXCC Year End Review – by Joe Reisert, W1JR – January 1, 2020

2019 Overview: This was another difficult year for DXers. As we approach Solar Minimum, radio propagation is poor at best especially on the higher HF bands. Only two of the 20 "Most Wanted Entities" were activated and those operations were by single ops. There were approximately 283 entities activated, five less than in 2018. There were at least a dozen large scale DXpeditions for the Deserving. A major DXpedition to Bouvet I. (3Y0I) failed to land.

2019 in Review: Activity overall was down on SSB and CW since it is now being shared in a big way with the weak signal digital modes. Despite the radio conditions, activity as usual was good from the Caribbean and Africa.

The cost to stage or finance a DXpedition is increasing as is the difficulty to activate the rarer entities. See "Who Pays for that New One," QST, October 2018, pg. 69. Participant's often have to share at least 50% of the total cost and hope for donations to cover the rest of the trip.

The 2019 VP6R team on their way to Pitcairn Island (photo courtesy of the VP6R website.)

The 3Y0I DXpedition to Bouvet Island ran into problems with the ship as they approached within about 70 miles (125 km) of the island and they had to return to ZS-Land. Several other DXpeditions also encountered difficulties which either limited operations or made their life miserable. Antennas blew down, torrential rain and mud along with an operator severely injured in a fall who had to be shipped out (VP6R), gear impounded (J20DX and 3D2VR), security problems and gear stolen (P29VCX), needed an armored car (6O7O), wire and antennas stolen (D44TWO) were just a few of the problems encountered to provide a new entity to the Deserving. Sometimes these difficulties impacted the number of contacts that were made or the bands used. Remember these sacrifices before complaining in the comfort of your radio room!

One final comment on DXpeditions. Ralph, K0IR has recently reminded us that it's very important to leave the visited areas in good condition and to be friendly with the locals. Some prior DXpeditions behavior has hampered some future operations. This is not good.

Radio Propagation: Sunspot numbers are way down, Sometimes there are none for several weeks. Solar flux has been near minimum all year. Some low banders are experiencing better conditions.

There are all kinds of speculation by many forecasters as to when Solar Cycle (SC) 24 will end and SC 25 will start. Some say we're heading for another Maunder Minimum. Others say SC 25 will be similar to SC 24. It seems like every month or so there is another expert making a prediction of the future of SC 25. The latest

report from NASA says that solar minimum will occur in April 2020 (+/- 6 months) , SC 25 will be similar to SC 24 and peak in 2025. I will take a wait and see position.

Club Log: This website/service (www.clublog.org) is becoming very popular with DXers and DXpeditions. This is Club Log's 12th year under the direction of Michael, G7VJR. It provides a logging site which is easily accessed and has over 610 million QSO records. When DXpeditions have internet service, they often upload their log on a daily basis. This allows DXers to check the DX log, see if they are in the log and hence prevent wasteful duplicate QSOs on the same band/mode.

Another service provided by Club Log is OQRS (Online QSL Request Service). Also the DXCC Most Wanted List. This service shows the rarity of each DXCC entity based on its large data base. At the end of December 2019 the 10 DXCC entities in order of rarity are: P5, 3Y/B, FT5/W, BS7H, CE0X, BV9P, KH7K, KH3, 3Y0/P and FT5/X. 2019 saw no operations in the top 10. There was some individual FT8 and CW operations by VK0AI (Mac.) and SV2RSG/A (Mt. Athos) respectively in the top 20. However many semi-rare entities were activated during the year as will be seen later.

Digital Operations: Most of the larger DXpeditions (3 or more operators) activated in 2019 were available on SSB, CW and digital modes. The new digital modes**,** FT8 introduced in July 2017, FT8 F/H (fox and hound) and FT4 in 2019 are game changers. They are a big advancement in the state of the art of weak signal detection making digital contacts in 1 minute or less possible versus the slower JT65 mode. Now many small less equipped stations can make contacts when the bands seem closed! Many stations have already worked over 200 and some over 250 entities on FT8. This new mode is probably the biggest innovation to DX communication since SSB became popular around 1958.

Band by Band Activity:
160 Meters: Activity was rather low except during DXpeditions and contests. Most DXpeditions use 160 meters typically between 1820 and 1830. FT8 activity is growing around 1840. Try to avoid frequencies divisible by 5 (e.g. 1820, 1825, 1830 etc.) since broadcast birdies are often there.

75/80 Meters: Activity has increased slightly especially during winter months. DXpeditions usually operate here either at the low end or around 3523 and around 3780-3800 on SSB. FT8 activity is increasing around 3574.

60 Meters: Many more entities have now received permission to operate on this band albeit they are often limited to 15 Watts and a dipole antenna. Most DX activity is now concentrated on the third channel around 5357 and almost entirely on the FT8 mode. Over 200 DXCC entities have been active on the band. FCC is still looking at non-channelized operation near channel 3. The ARRL DXCC program still does not recognize 60 meter contacts.

40 Meters: The Deserving are often active on CW on the bottom of the band especially during darkness hours and during contests. DXpeditions usually operate at the bottom of the band or around 7023. Much activity has now moved to the digital modes, especially FT8 around 7074. SSB is mostly above 7100. Remember that USA stations cannot operate SSB below 7.125 MHz but best to stay above 7.128 for safety. Most of the world can now operate from 7000-7200.

30 Meters: 30 meters is becoming more popular especially with DXpeditions and low power stations. The new FT8 mode as well as other digital modes are usually found between 10.135-10.150 MHz. 30 M is sometimes open 24 hours a day during the darker months. Remember that USA stations are limited to 200 Watts output power.

20 Meters: 20 meters continues to be the go to band especially during daylight although some of the activity has moved to the digital modes between 14070-14090. SSB activity is still high. DXpeditions often operate CW near 14023 and SSB near 14195..

10-17 meters: 17 meters is often as good and useable as 20 meters since QRM is lower and more competitive. Much digital activity stays around 18095-18110. **15 meters** is becoming less reliable as sunspots decrease although DX contests and DXpeditions still give it a try. **12 meters** is very quiet except for some digital activity around 24915**. 10 meters** is likewise with some digital around 28074 if the band is open. Poor conditions on 15 meters and especially 12 and 10 meters has made it tough on DXpeditions. Summertime often yields QSOs but usually from sporadic E propagation.

6 Meters: Nowadays this band relies mainly on sporadic E during May through August and various meteor showers. Most of the activity is now digital between 50250 and 50350.

2019 Month by Month DX Activity Sample:

January: This year it was a real tough month propagation wise especially on the upper HF bands and long DX paths. Despite this, at least 219 entities were active, a few less than 2018**.** Some notable rare to semi-rare stations active included: S01WS, 9G2HO and 9Q6BB (all three active all year on all bands and modes), YJ, S7, TZ, 9L, XZ, HC8, HK0A, TY, 5A and VK0 (Mac.).

February: 5T, V84SAA (58K Q), XX9D (36K), FH, T31EU (39K), T2, A5A and 9U4RI (1.9K).

March: T32**,** HC8, XR0ZRC (37K), 5V7EI (30K), J5 and YJ. The big disappointment was extreme weather that caused shipboard failures which prevented activating 3Y0I on Bouvet I.

A**pril:** VK9N (9.4K), JX7GIA (650 Q), VK9X, XT and OJ0.

May: FW and E31A (37K).

June: 3D2CR (33.8K but 66% FT8), 4W, T2 (4.7K) and XW.

July: E44WE, 1A0C (38K), TX2A (FO/A 25K) and CY9C (25K).

August: VK9APX (LHI), H44, TT8 and TO5M (FP 20K).

September: T6AA, T30L (13.6K), 9U3TMM (4K), 7Q7M, 6O7D (8.5K), C21WW (27K), ZK3A (52.5K) and A82X (EL 46K).

October: Was a very active month especially with DXpeditions. Active were T30GC, ZK3A (52.5K), TT8SN, HK0A, FH, VK9N, VP6R (82.7K), D68, CY0, SV2RSG/A, VU7RI (3.4K) and TO8OSP (FP 35K).

November: 4U1UN returned to the air thanks to the efforts of Adrian, KO8SCA**.** Also active were H40TT, FW, 5U9AMO, TX7T (FO/M), SV2RSG/A and VK9CZ

SV2RSG/A Monk Iakovos Kutlumusian began operations from Mount Athos in October. (photo courtesy of W3UR)

December: This was designated **YOTA** (Youngsters on the Air) month with many stations using call signs with YOTA in same plus several USA stations using 1X1 callsigns. Give them a call and encourage them to join the DX community. A50BOC and A5B as well as 3D2AG/P (Rot.) and SV2RSG/A were active. 9Q6BB was active and finally went QRT after 26.5KQ over several years.

Unauthorized Operations: There were many fake stations including many DXpeditions (before activation). This is why DXpeditions are reluctant to give out their call signs before commencing operation for fear that their call sign will be pirated. Some of the pirated call signs during this year included JX7DX, FS5DX, TS4IC, T33T and 9D2DX to name a few. Also a few upcoming DXpeditions such as 3Y0I. WFWL (work first, worry later) still applies but if you know it's a pirate, don't waste your time or $$ to support that activity. K9EL often lists pirate call signs on the CQ Magazine Marathon page.

Furthermore, please **don't spot rare DX on the DX Cluster unless you know it's legit and surely don't spot rare DX call signs for test purposes.** It causes lots of bells to ring worldwide and unnecessary worry. Finally, don't post rare calls to thank someone for receiving a QSL etc. **No one is watching, cares or appreciates this type of boasting**.

CTU, CWA and DXU: Let's not forget Contest University under the direction of Tim, K3LR. It is now in its 13th year having had over 7,500 students in 8 DXCC entities so far. The next session will be held in Dayton in May.

There is CW Academy by CWops, a program to improve CW skills. CWops just celebrated its 10 anniversary. "Improving Your CW" is another Morse Trainer by G4FON. Also there is DX University at DX oriented conventions.

IOTA: Poor propagation also affected some IOTA (Islands on the Air) DXpeditions to rare IOTAs. This program is arguably the most active DX program after the DXCC. Let's face it, many of the islands are DX and over 100 DXCC entities are already separate IOTAs. Chasing IOTAs can fill in the gap when an operator has worked all the active DXCC entities and wants to remain active on the bands.

The IOTA program website is www.iota-world.org It is filled with info on the program and the almost 1,200 IOTAs that are available. So far only about 1,135 IOTAs have been activated. At least 43 IOTA chasers have achieved IOTA 1100 level. Several rare activations were K7TRI (NA211), R26RRC (AS204), R205NEW (AS205 ATNO), XR1RRC (SA069), VE3LYC/KL7 (NA150), JX7GIA (EU022), KP3RE (NA249) and K6VVA/KL7 (NA004). Remember that QSLing can now be conducted for some IOTA operations using Club Log.

DX Contesting: DX contests are everywhere using CW, SSB and digital modes. The most popular DX contests are arguably the CQ Magazine SSB and CW and the ARRL CW and SSB DX. However there are many other DX contests sponsored by organizations around the world. As mentioned above, DXers should help out the youth to get involved in contesting, especially DX. Younger operators are showing interest especially since most contests require computer logging. Contest rates are slowly climbing with new software and more spotting websites despite poorer propagation. Logs are often required online usually within a few days after the contest. Contests often yield new band countries and modes sometimes even before the contest as stations test out their equipment. The WA7BNM Contest Calendar is a great source of contest activity. The ARRL Contest Update is a monthly newsletter that often has interesting tidbits on operating etc.

Equipment and Technology: New gear is constantly appearing especially from the major radio manufacturers such as Elecraft, ICOM, Kenwood, Yaesu and Flex Radio. Many of these companies are now employing SDR (Software Defined Radio) technology to improve performance. QST and RadCom (RSGB) often publish detailed reports on their performance. Also check out Sherwood Engineering by NC0B www.sherweng.com for info on reciprocal mixing of these radios. Likewise new antennas, power amplifiers, apparatus as well as software programs are very popular.

Safety: This is a very important part of ham radio, especially with high performance antennas. We all remember Rev. Paul, W0AIH falling to his death from a tower in late 2018. Unfortunately there were several such accidents this past year. One was right here in NH when a 40 foot un-guyed tower with two hams on top fell over. One person did not survive and the other is still in pretty bad shape. This could have been avoided.

PV8ADI had a similar accident like W0AIH and he did not survive. Also N3LPJ had a tower collapse and lost his life. These are just a few that we know of. Safety equipment is very important on tower or antenna work. Better yet, have a professional tower crew do the work. K1IR has a video showing "Tower Safety" and is well worth viewing www.maarc.ca/news/tower-safety-video. This reminds us that **every tower climber death is preventable**.

Strained eyes from tablets, phones and computers are also a problem. A recent paper from Cleveland Clinic gives several suggestions they call the 20/20/20 rule. This includes 20 second breaks every 20 minutes and looking 20 feet away to relax your eyes. Frequent blinking is also recommended.

Ham Radio and the Internet: Nowadays the Internet plays an important part in Ham Radio. Most DX clusters are now on the Internet as well as LOTW (more on this shortly) and Club Log to mention a few. Also many contests require logs to be submitted via the internet within a few days after the contest.

With the rise of many new communication modes etc. it's often important when spotting a station on the DX Cluster that is out of the usual band segment to specify the mode in the remarks column such as SSB, CW, FT8, FT8 F/H, FT4 etc.. Of course it is never proper to post foul language etc.

QSLing and DXpedition Costs: QSLing seems to be slowly dying. Postage rates are going out of sight worldwide. DXCC credit via LOTW (Log Book of the World) is very popular with DXers, especially those that don't want or need to collect QSL cards. Club Log and their OQRS (Online QSL Request Service) are also popular for those who prefer a paper QSL It pays to check a stations QRZ page to see how they prefer to QSL. DXpeditions often send their logs to LOTW after several months.

Recently N2OO has acquired the DXpedition logs of W6KG and W6QL as well as VP2VB.

Operating techniques: This past year was a tough one especially for DXpeditions. A few made almost 50% of their contacts on FT8! CW was right up there too. Needless to say, the RST report on CW is almost always 599! Split frequency operation, a must, is almost always used. Unfortunately many call right on the DX frequency and hence cause panic!

DQRM (Deliberate QRM) is still a major problem. Calling out of turn or calling continuously is still a big problem. It slows down the pileup so fewer callers get into the log. Tuning up for long periods of time (greater than a few seconds) on a DX station is a big problem. There is always plenty of spectrum to tune up away from the DX operations. Modern rigs usually have antenna tuners so it should only take a few seconds to tune. Holding down the key is a real problem. If you need to tune up for a long time, keep moving your frequency slightly. It will seldom affect the tuning.

Again, make sure to review the DX Code of Conduct (www.dx-code.org). On CW some DX stations transmit at 30 to even 35 WPM and/or seldom sign their call signs or where they are listening. Some operators just can't copy their call sign that fast**.** Some of the problems may be the limitations of code readers especially for newer operators**. The old adage still applies: Listen Listen Listen before you start calling.**

Try not to rag chew or tie up frequencies frequented by rare DX such as 3.795, 14.025 and 14.195 MHz as well as 14.040 and 14.260 MHz for IOTA. Other suggested frequencies to avoid are listed in "The Daily DX."

Transmitting on these frequencies will make it difficult for others who are experiencing poorer propagation than you are.

Silent Keys (SK): It is always tough to write about Silent Keys. They meant so much to our great hobby. I recently saw a clip from a 1955 QST SK list with only 25 persons. Nowadays it has grown to over 200 in each issue of QST. Lists in other prominent Ham Radio journals are also increasing. 2019 was no exception.

The following is a partial list of notable DXers, contesters, designers or officials in Amateur Radio who became SKs during 2019. They include in no particular order: LU3EAQ, NI5DX, DL6DQW, G3RJV, PV8ADI, DL6WU, GM4JJJ, 9A5K, W5LFL, W4RI, K1IED, K5DJ, K4IIF, W2OKM, HI3K, W8AD, SV2ASP/A, F5QF, GM3VLB, G3JVL, W4MPY, JA2BAY, K1GW, 5T5SA, VU2PAI, N1NLB, N2AA, JA1AA, FO5JV, N7RT, W4RA, FR5ZL and N4PN. May they all rest in peace.

2019 DXCC and ARRL Matters: There were no major changes to the DXCC Rules this year so the active entities stands at 340. However, the rules now prohibit automated contacts.

Rumors in the news media tell us that Bougainville, an autonomous region in Papua New Guinea (P29), has voted to become an independent nation. This could take years to happen before it is added to the active list.

The DXCC yearbook has been published for many years but now it only lists those who submitted DXCC updates during the year. If you want to see the latest DXCC standings, click "on the air" at www.arrl.org/dxcc-standings on the ARRL website for the DXCC standings.

Of course the ARRL runs LOTW and is constantly updating it. The LOTW now has over one billion QSOs on file. You now can import FT4 QSOs. New publications are scheduled for 2020 which will be primarily aimed at assisting newcomers to the hobby. Of course the ARRL QSL bureau is another service.

And now the Drum Roll:
There were approximately fifty seven (57) entities that are NOT believed to have been active during 2019 as follows:*

Africa (17):3B6, 3C, 3C0, 3X, 3Y/B, FT/G, FT/J, FT/T, FT/W, FT/X, FT/Z, TL, TN, VK0H, and ZS8.
Antarctica (1): 3Y0 (Peter 1)
Asia (9): 1S, 7O, BS7H, BV9P, EZ, P5, VU4, YK and ZC4.
Europe (1): R1F
North America (7): FJ, FO/C, KP1, KP5, TI9, XF4 and YV0.
Oceania (14): FK/C, KH1, KH3, KH4, KH5, KH7K, KH8/S, KH9, T33, VK9/M, VK9/W, VP6D, ZL8 and ZL9.
South America (8): CE0/X, HK0/M, PY0/S, PY0/T, VP8 (S. GA), VP8 (S. Orkney), VP8 (S. Shetland) and VP8 (S. Sandwich).

*Please note that some rare entities may not be on this list for 2019 because some operations were short, set up schedules or only on VHF, EME (Earth-Moon-Earth) etc.

The DXCC entities that are not believed to have been activated in ten (10) or more years has increased and now includes: 3Y/B, 3Y/P, BV9P, BS7H, CE0X, EZ, FT/G, FT/W, KH7K, KH3, P5 and YV0. This means that an avid DXer working hard at DXCC may take just over 10 years to make it to the DXCC Honor Roll. This list also serves as a guide to those planning DXpeditions to rare entities. As for me, the top of my need list for the DX Challenge has not changed in many years and not surprisingly goes to P5, BS7H, FT5/W and BQ9P in that order.

Upcoming DXpeditions: There is still a chance for 3Y0I to activate Bouvet Island. Other promised activity in January are ZC4UW, E44RU, VK9NK and TI9C followed by VP8/VP8DXU (South Orkney) in February. Later in 2020 you can expect KH8S, T30, TU, FJ, KH4, CY0C to name a few. 2020 looks like an exciting year for DXers. Stay tuned and check the www.ng3k.com/misc/adxo.html and Daily DX calendars at: http://www.dailydx.com/the-daily-dx-calendar/ for future operations.

Looking ahead to 2020 and Beyond: SC 24 is definitely on its last legs. Solar activity is near minimum as we wait for the official Solar Minimum and the start of SC 25, probably during 2020.

DX means different things to each DXer. Some DXers chase the DXCC Honor Roll, the DXCC Challenge or the DX Marathon. I'd estimate from the latest DXCC mixed listings on the ARRL "DX Standing" list that there are well over 2,000 persons worldwide that have confirmed all 340 on the present DXCC entities list. Fernando, EA8AK now has an amazing 3264 entities to lead the DXCC Challenge. More than 185 DXers have now achieved the very difficult DXCC Challenge 3000 level.

The top 6 meter station, LZ2CC has an amazing 280 entities. There are only about 20 NA stations to break the 6 meter 150 entities level. K2ZD has 209 and W7GJ has 204 confirmed. 6 meter EME is being more frequently used by major DXpeditions and is now a very important factor for leading North American 6 meter DXers.

It's time to improve your 20 and 17 meter as well as your 80 and 160 meter antennas. Then there are the never ending DX Contests, DX Marathon, DXCC Challenge and IOTA chasing. There are lots of things to do. Don't let the airways die for lack of activity. HF radio conditions on the mid-bands are still fair but improving on the lower bands. Stay active and join the fun. Also don't forget to support the various DX Foundations around the world that help make DXpeditions possible!

Finally: We hope this review has been informative especially for historical purposes. Using DX publications and the Internet are a great way to keeping us up to date on what is happening now and in the future. Once again I am honored to be asked by Bernie, W3UR to write this review for the 15th year and for his valuable inputs and critique. Thanks also to John, K9EL, Michael, G7VJR and especially Frank, W3LPL for their valuable inputs as well as my son Jim, AD1C for his computer help! Previous reviews can be read on the K8CX Ham Gallery website.

NOTE: Obviously all the opinions etc. expressed are solely mine as are any errors that I have made. **This End of Year Review is copyrighted**. Therefore copies or use of this review **MUST** first be approved by Bernie, W3UR and then a courtesy copy of the reprint sent to Joe, W1JR. Best of DX to you in 2020. I'll see you in the pile ups.

73, Joe Reisert, W1JR