



## Special Edition – 2017 DXCC Year End Review – by Joe Reisert, W1JR – January 9, 2018

### 2017 Overview:

DX propagation took a sharp decline in 2017 especially on the upper HF bands as we approach Solar Minimum. There were approximately 100 days with NO sunspots. In March ARRL deleted KH4 and KH7K but reinstated them several weeks later so we are still at 339 active entities. There was no known activity from any of the 10 most wanted entities on the Club Log DXCC Most Wanted List and only intermittent or short single operator activity from another 4 entities in the top 20. There were approximately 285 entities activated in 2017, about the same as in 2016 with over 275 on CW. As usual, there were many DXpeditions although not in the 20 most wanted entities. Probably the biggest news this year was the introduction of the FT8 weak signal digital mode introduced in July. More on that later.

### 2017 in Review:

The DXCC Challenge and the CQ Magazine DX Marathon activity were high as usual. The introduction of the ARRL 2018 Grid Square Challenge will surely affect some DX activity next year. DX contesting is ever increasing and new regional contests are always popping up.

We are now using the “DXCC Most Wanted Survey” by Club Log ([WWW.ClubLog.org](http://WWW.ClubLog.org)) since it is very up to date. Michael, G7VJR at Club Log monthly updates this list based on users log entries. The end of December 2017 most wanted list is very similar to December 2016. The latest 10 most needed DXCC entities in order of rarity are: P5, 3Y/B, FT5W, KH1, BS7H, CE0X, BV9P, KH3, VK0M, and KH7K. 2017 saw no notable DXpeditions from the top 10 Most Wanted Survey. However, many semi-rare entities were activated during the year as will be seen later. Club Log now has almost 465M QSO records with 48K active and 67K total users to back up these data.

To say the least the cost and logistics to activate the rarest entities is getting prohibitive and in some cases, can run over \$500,000. Unfortunately, as frequently happens, several DXpeditions such as 3Y (Bouvet) and KH1 were delayed. Some DXpeditions were shortened or had to be rescheduled. For those who criticize DXpeditions, here are just a few of the problems they experienced in 2017 to give us a new entity:

Hurricanes in the northern portion of the Caribbean curtailed many DXpeditions. Puerto Rico had great damage as well as to the Arecibo radio telescope dish, Marshall Law declared (DU1UD/8), security concerns and license

cancellation (9L1T), terrible high (35C) temperatures and humidity (85%) at TL8TT, VK9AR and VK9MAV, dangerous aggressive polar bears and walrus at RI1F,

numerous medical emergencies on location or preventing a trip (KG4LA and many others), delays due to lack of return transportation (3C0L), license expired (RI1FJ), transportation delays (RI0Z, V63J and others), no license available (3C1/3C0 and 8R1 for KC0W), visa problems (D2TI rescheduled), volcano eruptions



**YL2GM, Yuris, and YL3AIW, Kaspars, surprised everyone with the 3C1L and 3C0L DXpedition in October 2017.**

(H40GC), boat nearly capsized (5L3BI and operation cancelled), antennas damaged (VR2/KC0W), to mention some. We DXers shouldn't complain!

Most of the larger DXpeditions (3 or more operators) activated in 2017 were available on SSB, CW and Digital modes. CW was as active as ever since there were over 275 entities active on CW. **The new FT8 digital mode introduced in July is a Game Changer. It is a big advancement in the State of the Art of weak signal detection** making digital contacts in 2 minutes possible versus the slower JT65 mode. Now many small stations can make contacts when the bands seem closed!



YOTA (Youngsters On The Air) as well as JOTA (Jamboree On The Air) activity is increasing especially in Europe and by IARU and ARRL assistance. They often use special recognizable call signs. Give them a call. Youngsters also have launched high altitude balloons (ARHAB). We need to encourage these youngsters as we DXers age. As we will see later the DXer Silent Keys increased at an alarming rate in 2017.

Also, don't forget CTU (Contest University) under the direction of Tim, K3LR. It is now in its 12<sup>th</sup> year having had over 7,000 students in 8 DXCC entities. There is also CWA (CW Academy) by CWops, a program to improve CW skills.

### A Solar Review:

Solar Cycle 24 is definitely on the wane. Solar flux, the major generator of upper HF DX propagation, was mostly below 100 all year except for two short times (early April and early September) when the solar flux rose above 100. The September region 2673 storm was the worst solar storm in the entire SC 24 so far. It is normal for a few flares during the final stages in a SC as activity decreases. SC 24 should bottom out between 2019-2020.

Solar Flux is a good indicator of improved propagation on 10 through 15 meters, especially when the K Index is low (1-2). There were about 100 days with no sun spots usually for several days at a time. Experts are still telling us that this was the weakest SC in over 100 years and that SC 25 may be the weakest in 200 years. Let's hope they are wrong!

### Band by Band Activity:

**160 Meters:** Activity seems to be increasing as propagation on the upper HF bands is decreasing. Some Europeans received additional spectrum on the band. DXpeditions usually operating between 1810 and 1830 KHz. Digital modes, especially FT8 are usually around 1840. W8LRL is still the Top Band leader with 342 confirmed entities (including about 11 deletes). Try to avoid frequencies divisible by 5 (i.e. 1820, 1825, 1830 etc.) since broadcast birdies are often there.

**75/80 Meters:** Activity is slowly increasing especially on CW when DXpeditions are active. The later often operate at either the low end of the band or near 3525 KHz. 75 Meter SSB DX is often concentrated between 3790 and 3800.

**60 Meters:** Several new entities have received permission to operate in this band although many are limited to 15 Watts EIRP and a narrow band centered around 5357. As a result, there is lot of FT8 activity there. Some split frequency CW operation to 5405 is sometimes available. The FCC is considering modifying the USA 5 channel operation to allow non-channelized operation in a small portion of the band to be more compatible with the rest of the world allocations. There have been over 150 DXCC entities active on 60 Meters but the ARRL DXCC program still does not recognize 60 Meters contacts.

**40 Meters:** It's still the go to band during the dark hours and especially during winter time. DXpeditions are often there on the lower end or at 7025 for CW and 7100 and up for SSB. 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 and up:** 30 Meters is becoming more popular especially with DXpeditions and low power stations. Remember that USA stations are limited to 200 Watts output power. The new FT8 as well as other digital modes from 10.135-10.150 MHz were very popular by DXpeditions as well as for QRP and digital modes and is sometimes open 24 hours a day during the darker months. **20 Meters** is still the daytime breadwinner along with **17 Meters** where activity is increasing and there is less congestion. Signal strength on 17 Meters is often better than 20 Meters when both bands are open. **15 Meter** openings are decreasing with the lower solar activity. During this past year **12 and 10 Meters** are showing fewer and shorter openings as solar flux decreases. Sporadic E propagation in the northern hemisphere especially from mid-May through early August and in December often enhances HF and 6 Meters DX but this is not due to sunspots.

**Other 2017 News:** Ever since mid-July the new FT8 digital mode by K9FN and K1JT has taken the bands by storm. This mode is especially popular with operators with limited power and small antenna systems. The most notable activity is on 6-Meters where the propagation can be erratic. On 6 meters FT8 and similar weak signal digital modes usually operate above 50.250 MHz and often cause the lower portion of the band to be quiet even when DX propagation is prevalent!

### **Pirates and Unauthorized Operations:**

This seems to be a perpetual problem. Nowadays many DXpeditions are reluctant to give out their call signs before commencing operation for fear that their call sign will be pirated. Frequent pirate call signs during this year were ZB2A, JX7DFA, JX7F, 5H3PM, 5H3MG, P5/3Z9DX, YK1AO (Omar is now living in the USA), and VK0/KE0HWZ to name a few. 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 calls on the CQ Magazine Marathon page.

Furthermore, don't spot rare DX on the 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 and unnecessary worry. Finally, don't post rare calls to thank someone for a QSL etc. **No one is listening, cares or appreciates this type of boasting.**



### **IOTA:**

The "Islands On The Air" 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.

During the past year the IOTA program has separated from the RSGB and a new website [WWW.IOTA-World.org](http://WWW.IOTA-World.org) has been activated. It is filled with info on the program and the over 1,200 IOTAs that are available. So far only about 1,125 or so have been activated. IOTA DXpeditions happened all year from the easy to the more difficult and rarer IOTAs such as A70X (AS088), R71RRC (AS071), AT7M (AS096), R1F (EU190-New activation), S21ZAS (AS127), S21ZDC (AS140), R70ASIA (AS020), VK9AR (OC216) and VK9MAV (OC267) to name a few. Furthermore, 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 seem to be the CQ Magazine SSB and CW as well as the ARRL CW and SSB. 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 on line usually within a few days after the contest. Contests

sometimes 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.

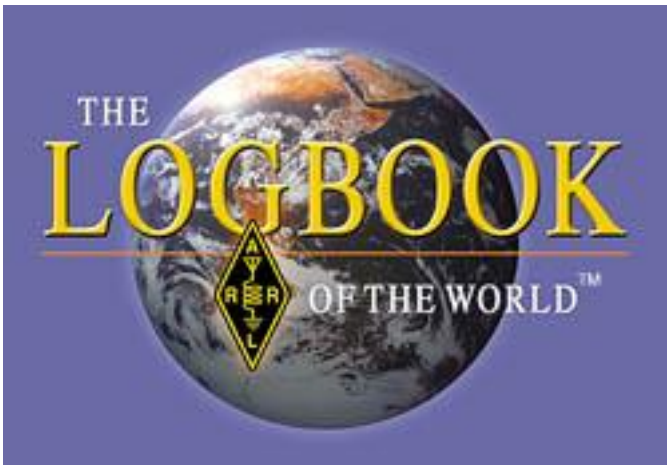
### **Equipment and Technology:**

New gear and programs are still showing up all the time. One of the best places to see what's new is at the Dayton HamVention now held in Xenia, Ohio in mid-May. Elecraft announced a new 1,500 Watt solid state amplifier, ICOM and others have new transceivers, MFJ has picked up the InnovAntennas line and DXEngineering now has the Opti-Beam line. SteppIR has a new moderate sized Urban 2 element Yagi, Spider beams are coming out in several forms, SDR transceivers are becoming very popular from FLEX Systems and others. LDMOS power FETs are improving. Soon tube amplifiers will be replaced by them. Sad to say the ICM (International Crystal Mfg.) and Radio Shack have either gone out of business or are bankrupt. Keep an eye on the major Amateur magazines for new equipment offerings. Finally, be sure to keep safe practices especially on tower and antenna work. The FCC and OSHA have recently announced a new free publication entitled "Communications Tower Best Practice Guide.," **They remind us that every tower climber death is preventable.**

### **Ham Radio and the Internet:**

There is no doubt that the Internet is increasingly playing an important part in Amateur Radio be it DX Clusters, working groups, sending in contest logs, QSL info, LOTW (Log Book of the World), helpful hints etc. Club Log is becoming the go to place to see if you are in a log especially with DXpeditions. Some DXpeditions update their logs daily while others actually update logs continually. **Try to prevent duplicate QSOs on the same band and mode.** Each dupe may prevent someone else from making an ATNO (All Time New One) or even a band slot or mode

Don't forget to correctly spot call signs and frequencies on DX clusters. **Due to the addition of the FT8 mode, it is now important that digital signals be listed by their mode in the remarks column on the clusters (i.e. FT8, BPSK, RTTY etc.).** Of course, self-spotting is frowned upon. Just because a DX station is spotted doesn't always mean the call sign etc. are correct or that the station is really there! Working an incorrect call may result in a NIL (Not in Log) to your QSL request. **Obviously posting obscenities and negative comments on the DX Clusters is never acceptable.**



### **QSLing and DXpedition Costs:**

It goes without saying that postage rates are going out of sight. 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 card. It is a method to obtain a QSL without having to send one (an added expense) and to guarantee that your request makes it to the proper source without theft. What could be better in this day of high and varying postal charges at home and abroad? I prefer paper QSLs since they may be needed for awards other than DXCC but I realize that I am now in the minority.

Most Amateur Radio societies have their own QSL bureau but often you have to be a member to use their service. The ARRL outgoing QSL Bureau or the QSL bureaus in many entities can lower QSLing cost, LOTW is extremely popular and the DXCC has been the prime user but other awards such as WAS, VUCC, Triple Play, and some CQ awards are now available. There are almost 900 million LOTW QSO records, an increase of over 10% since 2016. There are almost 100,000 registered LOTW users and this trend continues to increase and

doesn't look like it will level off for many years. Furthermore, contesters are often uploading their logs immediately after the contest ends. Many DXpeditions are now using LOTW, sometimes while still on location!

DXpeditions to rare entities are getting more expensive and many cost \$100,000 or more. They are experiencing difficulties obtaining transportation and raising the necessary funds etc. It now can cost well over \$20,000 per operator to participate and travel to rare DX entities. Propagation is also limiting the number of contacts especially on the higher bands. Most large DXpeditions are 50% funded by the operators and the rest from clubs, individuals and QSL donations. Please support DXpeditions directly or through organizations such as NCDXF, INDXA, CDXC and EUDXF Foundations etc. The NCDXF contributed over \$200,000 to DXpeditions in 2017 alone!

**Operating techniques:** A look at 2017 statistics on Club Log logs shows that the rarest DXpeditions had more CW than SSB contacts. Of course, the "599 TU" QSOs on CW or "59 thank you" on SSB are still ever present especially with DXpeditions. Operating CW at high speed (30 WPM or higher) has caused problems perhaps due to computer receiving and processing and were very much in evidence although QRM can add to the problem. Serious DXers are definitely using the DX Clusters and Reverse Beacon Network for spotting DX.

DQRM (Deliberate QRM) is still a major problem. Calling out of turn or calling continuously only slows down the pileup so less calls get into the log. Tuning up for long periods of time is also a problem. There is always plenty of spectrum to tune up away from the DX operations. This subject has been beaten to death but we must do our best to speed up operations.

Again, make sure to review the DX Code of Conduct ([www.dx-code.org](http://www.dx-code.org)) W3UR will soon publish some good tips on operating for DXpeditions in his "How's DX" column. On CW some DX stations transmit at 30 to even 40 WPM 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 better propagation than you are.

### **Silent Keys (SK):**

This seems to have been a bad year for Amateur Radio as many well-known DXers and important Amateur Radio people became SKs. The SK column in QST has been listing over 200 per month. Other Radio Societies also have a rise.

The following is a partial list of notable DXers, contesters, designers or officials in Amateur Radio who became SKs in 2017. They include in no particular order: K4DLI, WA5IYX, HB9MX, K4VX, ON6WU, VK6LK, K1VW, RU3AX, DJ9KR, G3IOR, I3BLF, W7TSQ, W7EJ, 4S7NE, I2QMP, 9M6XRO (G3OOK), W3GH, 5T5JL, N4ZC, NP4B, 9M2FK, F5SE, and N4AA, editor of The DX Magazine.

### **2017 DXCC and ARRL Matters:**

The ARRL had DXers all in a tizzy when they moved KH4 and KH7K to the deleted list last March. Fortunately, they re-instated same several weeks later. Therefore, the total number of active entities remains at 339. The CQ Magazine WAZ (Worked All Zones) award is now able to access LOTW. The 2018 ARRL Handbook, a great reference book, is now available. It was



extensively rewritten and now weighs about 6 pounds and over 1200 pages! QST page size has been slightly reduced as is the number of pages (about 10%).

Latest license figures in the USA shows a slower but gradual rate of growth of about 1%. The 2016 “DXCC Yearbook” was available on the internet after all later in 2017. Perhaps there will be a 2017 version later in the year. However, all this Yearbook contains is a listing of all the DXCC confirmations that took place during the year. For up to date info, the ARRL website lists are always updated continuously throughout the year.

### **Sample 2017 DX Activity Month by Month:**

**January:** DX activity was moderate with about 220 entities available but it was much more difficult to contact rare ones as propagation deteriorated especially on the longer paths. My own total for 2017 was down from a usual 200 to 175 entities in the month. Some notable rare to semi-rare stations active included: S01WS (active all year on all bands and modes), VK8RR/9 (CK), H40DA, SV2ASP/A, XW4ZW, E51AMF (N/C), ZC4s, XT, 5U, TZ, TU, A3, S2 and UA4WHX from several W. African entities.

**February:** TL8TT (63K QSOs), 3X, 9Q, A5, 7P8, 9X, 5T, VP6EU (39KQ), TX5T (FO/A), J5 and J2.

**March:** H40FN, 5V, 9G5X (29K), 5U7R (75K), 9N7EI (30K), TU7C (52K) T2 (10K), S21s (51K), T30TM, VQ9, WW6RG/KH9, and VK9VKL (new resident on Xmas).

**April:** 4W, 3D2/R, FJ, J5B (19.5K), 5A5A, A25UK (44K) and 5V7P (16K).

**May:** VK9L, FO/A, VU7s, OJ0W, TJ, E44WE, E31A (36K), T2R and TN5E.

**June, July and August:** To describe the summer conditions in the Northern Hemisphere as poor would be an understatement. DX during this period did include VK9AA (Xmas). FH/DJ9RR, Z81D, FJ, FP and 9X0TA.

**September:** OJ0, KH9/K7ASU, E6AG, A25s, R1F (FJL-11K), YJ,

HC8, 4W6RR, A5A, 7Q7WW, and S9YY.

**October:** S9s, 5X, 3C0L (32K), FT5XT, VU7L, 3X, T2AR, ELs, VK9CZ (CK) and E44WE.

**November:** 3C1L (42K), VK9N, 4W, H40GC (36K), 9U4M (55K), J5T and 5X.

**December:** Really faced poor conditions. Activity included 9L/KW4XJ (digital), HC8LUT and OJ9X, Santa himself (over 60K).

### **And now the Drum Roll:**

There were approximately Fifty-four (54) entities that are NOT believed to have been active during 2017 as follows: \*

**Africa** (11): 3B6, 3Y/B, D6, FT/G, FT/J, FT/T, FT/W, FT/Z, T5, VK0H, and ZD9.

**Antarctica** (1): 3Y0 (Peter 1)

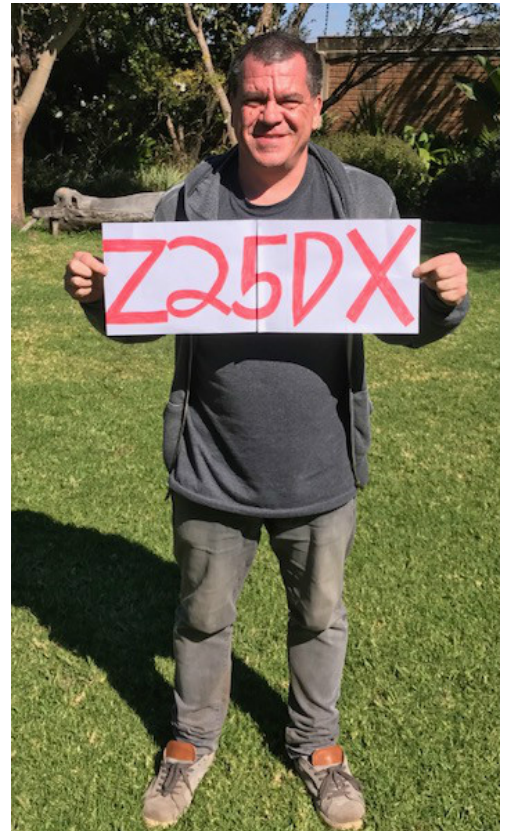
**Asia** (8): 1S, 7O, BS7H, BV9P, EZ, P5, XZ, and YK.

**Europe** (2): 1A0 and JX

**North America** (8): 4U1UN, CY9, FO/C, KP1, KP5, TI9, XF4 and YV0.

**Oceania** (18): 3D2/C, FK/C, FW, KH1, KH3, KH4, KH5, KH7K, KH8/S, T31, T33, VK0/M, VK9/W, VP6/D, ZK3, ZL7, ZL8 and ZL9.

**South America** (6): CE0/X, HK0/M, PY0/S, PY0/T, VP8 S. Ga, and VP8 S. Sand.



**KC0W, Tom, operated from several locations in Asia and Africa. Here he is shown in Zimbabwe.**

\*Please note that some rare entities may not be on this list for 2017 because some operations were short, set up schedules or only on VHF etc.

The DXCC entities that are not believed to have been activated in ten (10) or more years has increased and now includes: 3Y/P, BV9P, BS7H, CE0X, EZ, KH1, KH3, KH7K and YV0. Two of them are promised in 2018. This means that an avid beginning DXer working hard at DXCC will take at least 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 and FT5/W in that order.

### **Upcoming DXpeditions:**

There are only a few announced DXpeditions for 2018 on the DX Most Wanted List. 3Y0Z is scheduled from Bouvet Island in January/February and KH1/KH7Z activity is promised for June. Other rare entities promised for 2018 include 9M0W in March, 3B7A in April, and VP6/D in Oct. The often delayed YV0, Aves Island DXpedition could still happen. Stay tuned and check the Daily DX calendars at: <http://www.dailydx.com/the-daily-dx-calendar> for future operations.



### **Looking ahead to 2018 and Beyond:**

SC 24 is definitely on its last legs. Solar activity will continue to decline until 2019/2020 when we hit rock bottom. From the predictions, we've been hearing SC 25 will be even weaker. Believe it or not, the first sunspot for SC 25 occurred back on December 18, 2016! The new FT8 weak signal digital mode should help when conditions are poor.

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 that there are well over 2,000 persons worldwide that have confirmed all 339 DX entities. Fernando, EA8AK now has 3256 entities to lead the DXCC Challenge. More than 150 DXers have now achieved the very difficult DXCC Challenge 3000 level. The top 6 meter station, LZ2CC now has 267 entities. W7GJ became the first North American station to break the 6 meter 200 entities level with 202 entities while only about 25 are above the 150 level. EME 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. WRTC 2018 in July will be sponsored by the DL Bavarian Contest Club. 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. 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 13<sup>th</sup> year and for his valuable inputs and critique. Thanks also to John, K9EL and Frank, W3LPL for their valuable inputs as well as my son Jim, AD1C for all 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 2018. I'll see you in the pile ups. 73, Joe Reisert, W1JR