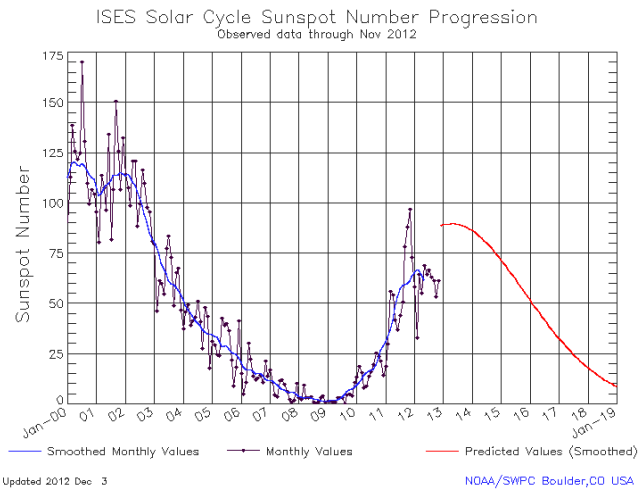
Special Edition – 2012 DXCC Year End Review – by Joe Reisert, W1JR - January 9, 2013

An Overview:
Has the excitement worn off yet? DX wise, 2012 was a great year. Radio propagation greatly improved, especially on the upper HF bands although not to the expected level. There were approximately 290 DXCC entities activated, a few more than in the last few years with one deleted entity. There were over twenty five (25) large scale DXpeditions that took advantage of the better conditions and were often available to "The Deserving" on all bands from 10 through 160 meters and some even on 6 meters. Activity from the Caribbean Islands was high with many operations from the four new 2010 PJ entities.

A Quick Review of 2012:
DX activity was unusually high this year. In addition to the DXCC Challenge and the CQ Magazine DX Marathon, activity probably increased due to several other DX awards. The ARRL Diamond DXCC, the Commonwealth Diamond Jubilee Award and the IOTA 50th Anniversary Award were among the most notable. Also note that over 400 different contests took place during the year with many DX oriented. There were several DXpeditions from places that are high on the "2011 Worldwide Most Wanted Survey" in "The DX Magazine" by N4AA although only one, 7O6T, was in the "Top 10". When the 2012 list comes out it will probably show that the new top 10 in order are P5, KP1, 3Y/B, FT5Z, VK0/H, FT5W, BS7H, VP8 (South Sandwich), ZS8 and FT5/T. Operations also took place from HK0M, VK0M, PY0S and SV/A which were in the "Top 20." Unfortunately as frequently happens, several DXpeditions such as KH5 and VK0/H were delayed (hopefully only into late 2013 or early 2014). Others had to be cancelled entirely (T2) due to transportation problems, logistical problems (T33), shortened due to hurricane (CY0) and storms (ZL9) or were thwarted from operating for one reason or another. Most entities activated were available on SSB. CW still did not die since there were at least 270 entities active on CW during 2012. The "599 TU" QSOs on CW or "59 thank you" on SSB are still very popular especially with DXpeditions although it is evident that some operators are advocating a return to the days when signal reports meant something! Computer sending and receiving were very evident as well as many DXers using the DX Clusters and Reverse Beacon Network. RTTY (now called "Digital" by ARRL) was also used by most large DXpeditions.

A Solar Review:
We are now well into Solar Cycle 24. However, in contrast to prior Solar Cycles, it has been a rocky start with periods of improvements followed by quiet times. Some of the computer models of late are now undergoing modifications. It looks like Solar Cycle 24 will **NOT** be a memorable one with record numbers of sunspots. The computer models from NASA (http://solarscience.msfc.nasa.gov/predict.shtml) are now predicting this solar cycle to peak in late 2013 with only 72 smoothed sunspots. Based on the latest data, this will be the smallest solar cycle peak since Solar Cycle 14 peaked in February 1906!



Solar flux (SF) is a good indicator of improved propagation. SF did stay mostly above 100 for the entire year 2012 with only a few short dips into the 90s. SF peaked at 178 on July 9, 2012, lower than the 190 peak in November 2011. Aurora was evident at some time in almost every month. The most affected stations were at high latitudes. NOAA has the "Stereo Satellites" looking at the Sun from the front and back so now sunspots can be easily spotted ahead of time on the internet by interested parties.

Band by Band Activity:
There was plenty of DX activity in 2012 including over 25 DXpeditions that spread activity out from 160 through 10 meters. 160 Meters is generating lots of LF DX activity especially by DXpeditions usually operating between 1815 and 1830 KHz. 80 Meters is often quiet except during DXpeditions and contests. 80 Meter DXpeditions on CW often operate at either the low end of the band or near 3525 KHz. Several more entities have received permission to operate on 60 Meters. In the USA, the FCC on March 5, 2012 raised the 60 Meter ERP level to 100 Watts and permitting USB, CW, and digital in the established fixed channels. 40 Meters is still the night time breadwinner and was great all year round as usual. DXpeditions used to operate CW near the bottom of the band but nowadays many opt to operate near 7025 KHz to reduce QRM. The expansion of 40 meter SSB from 7100 to at least 7200 KHz for many of the Worlds entities has generated lots more activity, especially during SSB contests. Remember that USA stations can't operate SSB below 7125 KHz. For safety stay above 7128 KHz. 30 meters is very popular, especially 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 there seems to be less congestion. 15 meter conditions have improved and sharing some of the load when the solar flux rises. During this past year 12 and 10 meters really came alive with worldwide DX although not like what was experienced during the peak of solar cycle 23. Despite this, it was easy to work over 200 entities on 10 meters during 2012. Some F2 and Transequatorial propagation DX was present on 6 meters especially around the equinox periods. Sporadic E propagation especially during June, July and December often enhances HF and 6 meter DX but this was not due to increased sunspots.

Equipment and Publications:
Some new equipment came on the market. The five major radio manufacturers all introduced new transceivers and peripherals. New receiving arrays became available for the Low Bands. SDR (Software Defined Radios) also increased with more features. In addition, some do-it-yourself low cost SDR kits became available. More QRP kits and rigs are now available. New antennas were introduced, especially compact multiband verticals and Yagis. Finally, Heath Corporation announced that it is closing down.

Ham Radio and the Internet:
The Amateur Radio sites, DX clusters and of course emails etc. on the internet are really supplying lots of good services. Most major contest logs and some awards now have to be submitted via the Internet often within several days after the contest is over. Internet use and abuse by Amateurs continues to increase especially for DX spotting clusters. The DX clusters are an amazing tool for finding and spotting rare DX. One popular one is "DX Summit." Clusters are a far cry from the way we used to spot DX using either the telephone, spotting frequencies on HF or VHF repeaters. Reverse Beacon Networks which use CW skimmers are now being widely used.

There are several downsides to using the cluster. All too often incorrect or extremely rare call signs (not on the air at the time!) are spotted. Another cluster annoyance is using the clusters for self-spotting or to boast about a QSO or a QSL being received. No one really cares and sending thanks to a station that probably isn't on the cluster is an annoying waste of time. Repeated spots of the same station are also not productive. First check to see whether a spot was previously made before repeating same. A rare call sign can cause a huge pileup that may even cover up the DX station. Always listen before you call to be sure it is the right station and especially if there are special instructions such as listening UP. In these days of seldom signing both call signs, never rely solely on the accuracy of the spot as you may receive a NIL (Not in Log) to your QSL request. During 2012 I often heard two or more DXpeditions operating simultaneously on or near the same frequency and often pileups coincided or overlapped. Also don't post QSY requests. Few DX stations notice and in the case of DXpeditions, they seldom are continuously connected to the internet so they usually don't see your spot.

QSLing:
There is no denying that the cost of QSLing is becoming too expensive. The European postage rates have greatly risen and on January 27, 2013 so will postage rates in the USA for both domestic and foreign. IRCs are costly, not always available (USA discontinuing same) and often can't be redeemed. The ARRL outgoing QSL Bureau or the QSL bureaus in many entities can lower QSLing cost. The ARRL Outgoing QSL bureau shipped approximately 730,000 QSLs during 2012, a decrease of about 10% from 2011. I prefer paper QSLs since they may be needed for awards other than DXCC but I realize that I am now in the minority

To further offset QSLing cost, the ARRL LOTW (Log Book of the World) is becoming extremely popular. The DXCC has been the prime user but other awards are being added. There are now over 465 million LOTW QSO records, an increase of about 12% over 2011 and over 54,000 registered LOTW users, also a 12% increase over 2011 with almost 82,000 active certificates! Near year end there were some very long (days to weeks) delays in uploading to the LOTW especially after contests when the system was severely overloaded. ARRL hopes to decrease this delay with updated hardware in early 2013. Many DX stations, especially the large scale DXpeditions now update their logs on the Internet during their operation. Also, several of the 2012 DXpeditions put their logs directly into the LOTW. As a result of LOTW, many expensive DXpeditions (over $500,000!) are experiencing difficulties raising the necessary funds for transportation. It now can cost between $10,000 and $25,000 per person to participate and travel to the more difficult places for rare DX entities. This was highlighted in a detailed presentation by N1DG at the Dayton HamVention on "DXpedition Costs." It is very enlightening and can be viewed on the NCDXF website (www.NCDXF.org). This also shows why contributions with QSLs, however small, plus donations from clubs and DX foundations are necessary to offset cost and make these rare entities more available.

One very popular QSLing trend is the OQRS procedure where for a donation, no QSL is needed. ClubLog (clublog.org) is very popular and has streamlined the OQRS by making it available on their website. Finally, over the years many DXers find out that they need a QSL from a rare DX station that is no longer available and need a source to obtain a QSL. Hence, N2OO has now volunteered to establish a "**Save Log Bank**" for past operations from rare entities. Contact Bob directly if you can help with such logs.

Operating techniques:

Change happens, sometimes for the better and sometime for the worse. Some new modes of communications have recently appeared on HF. The JT65 digital mode similar to operation used on VHF is now being widely used on HF even on 160 meters. K1JT has recently announced an improved system for HF on his WSJT website. Split frequency operation, especially by DXpeditions should be standard practice but has its own problems. Often calling stations are not aware of the split and QRM the DX. During several of the major DXpeditions I carefully monitored the DX station frequency. Often someone would hear this relatively clean frequency, jump right in, hear the DX station giving reports, imagined that they had a QSO and with impeccable timing would hear the DX station say TU and think they had a valid QSO! It goes without saying that if you aren't copying the DX station well enough to properly identify the station or aren't aware of what technique is being used by the DX station**, DON'T CALL**! There is a good reason to check internet logs if they are posted rather than receiving back a NIL reply to your QSL request. This doesn't mean that we should call continuously and later check the internet hoping to see if your call sign is in the log!

Also, there are the usual problems with "frequency policeman". If you can't refrain from saying something to the interfering stations, drop in a SHORT reminder like "**UP UP**." Sending or saying a long string of **UP UP UP UP UP or Hi Hi** or calling a station a lid often does more harm than good and often QRMs the DX station. Of course, obscenities are NEVER appropriate. Steady tuning up especially on top of a DX station is still a big problem. Also many start calling the DX station before the last QSO is completed causing more confusion. Another problem is directional calls and partial calls with too many responding that are not from the area or call sign in question. This holds up DX, creates delays and deprives others of a QSO. DXpeditions also have other problems. Many of the recent ones are using 30 to even 40 WPM CW. Some operators just can't copy their call sign that fast. Also they often create excessively wide pileups. This causes unnecessary QRM and disrupts stations who are not in the pileup. Finally some DXpedition operators insist on sending DUPE which seems to be a waste of time since it would be easier to just have a quick QSO and move on. Perhaps this happens when a station calling a DXpedition is not sure of a prior QSO due to QRM etc. Also, try not to rag chew on frequencies frequented by rare DX such as 3.795, 14.195, 21.295 and 28.495 MHz as well as 14.260 and 21.260 MHz for IOTA. These are just a few frequencies that come to mind. You may not hear the DX station but transmitting on those frequencies will make it difficult for others that are experiencing better propagation than you are.

Space does not permit more info on operating but the following references are highly recommended reading. First see "The DX Code of Conduct (for DXers) and The DX Code of Conduct (for DXpeditions) (dx-code.org) and "Best Practices for DXpedition Operating" by DX University (www.dxuniversity.com) and others. Let's hope that operators and DXpeditions will adopt these recommended procedures.

Pirates and Unauthorized Operations:
2012 saw many pirate operations using existing or unlicensed call signs. The following are just a few of the most common pirates observed: 5N7CZ, 8Q7HU, 9N1II, A52CW, C30HA, C31YL, CE0LW, CE0XX, EZ8A, D2PZ, HV0E, OD1USA/T6, TO4E, YA/RL3AR, YIIHR, YK1AO, ZB2NZ, ZD7BV, ZD9CI, ZD9KN, ZD9T, ZK3CI, ZL8BV, ZL9DOC, and ZL9RON. In addition, many legitimate stations calls were pirated during the year such as 5X1NH and SV2ASP/A as well as YI1IRQ between August 2008 and November 14, 2012. Z6 operations do not count for Kosovo for DXCC credit at this time. See 2012 DXCC Changes below. Many DXpedition calls were pirated before, during and after their operation. Finally, many calls are often improperly spotted (typos) on the DX Clusters (i.e. EZ1A is really E71A). WFWL (work first, worry later) these stations but this does little good if they are a pirate so sending a QSL is a waste of time and money.

Silent Keys:
The age of DX Honor Roll leaders is increasing and with Amateur Radio in general. The November 2012 QST (pages 104-105) Silent Keys (SK) list was over 1-1/2 pages long! It is sad to note that several well-known Amateurs became SK during 2012 and deserve to be mentioned. Many were well known DXers who were near the top of the DX Honor Roll such as K6ZO, N8GZ, W1BIH/PJ9JT and W1CKA. Others notable SK DX/DXers included 3B8AD, AH8LG, EK6GB/UG6GB, ET3SID, K6DLV/YB0ARA, K6LPL, P43JB, W1UQ/PJ5UQ, ZL1AMO, ZS4PB and Rod Newkirk, W9BRD who edited QST's "How's DX" from 1947-1978! Many prominent VHF DXers such as K1FO, KH6ME, VK3ATN and W3ZZ also became SK. Finally other notable SK included K6SV (Ham Radio Outlet), N6WR (founder of World Radio), N1BKE (QST managing editor) and W2DU of VSWR fame.


ET3SID, Sid May, passed away in September 2012 (photo courtesy of K3LP)

2012 DXCC Changes:
Malyj Vysotskij, R1MVI etc. was removed from the active DXCC list effective 16 February 2012 when it no longer met DXCC criteria to remain as a DXCC Entity. This means that the present active DXCC list total is now 340. If you add the 61 deleted entities, the DXCC total is still 401 entities. It is doubtful that anyone can achieve 400 entities for some time since all of the top leaders missed at least three of the deleted entities. Therefore, until more entities are added, 400 will be an elusive number. Kosovo is still a possible new entity but the Z6 operations in 2012, although being used for Kosovo (Z6 is for ICAO use only), is not an ITU sanctioned prefix for Amateur Radio and therefore does not count for DXCC. Some entity call signs changed. ZK2 is now E6. The YA prefix is no longer used in Afghanistan since the authorities there are now issuing only T6 call signs. At least one DXCC entity is being studied for deletion. The DXCC Yearbook, usually published in August, is no longer free but a copy can be purchased directly from ARRL.

Future DXpeditions:
Several large scale DXpeditions were operational during 2012. Some scheduled DXpeditions were not successful for one reason or another as stated earlier. Hopefully they will be rescheduled. Still no news on KP1, Navassa but I'm sure that it will eventually be activated. It looks like some of the most needed entities in the top 20 will be activated in 2013. The agreement to allow limited operations from some of the restricted access US Possessions in the Pacific area was penciled in 2010. However, they must conform to special regulations and will probably not be activated more often than once every five (5) years. The first one affected to be activated is probably going to be KH5 (Jarvis) but now that has been delayed until the fall of 2014 at the earliest.

The 2012 DX Review:
The following is a brief summary of monthly DX activity during 2012. Emphasis is on rare to semi-rare operations and DXpeditions especially where no resident Amateurs are active.

January
There was lots of activity as 2012 started. Conditions weren't great but improved during the month with solar flux over 110 for the entire month. Some of the activity may have been spurred on by those chasing the new awards such as the Diamond DXCC. It was possible to work over 100 DXCC entities in the first two days of January and over 200

HK0NA ops (L-R) K4UEE, VE7CT, WB9Z, W6IZT and K0IR on the Malpelo Island Tangon. (Photo courtesy of W6IZT)

entities in the month as several of us did. There were approximately 232 entities available in January, slightly less than normal. T2 activity was cancelled due to transportation and water problems on Tuvalu. HV50VR was active as was 3D2AG/P (7K QSO) on Rotuma. They were followed by semi rare 9U3TMM, 9X0PY, 3DA0PW (13KQ), TY2SI and VK0TH, Macquarie using all three modes. The long sought after HK0NA on Malpelo Island really increased activity and operated for several weeks completing over 195 K QSOs, a new tent and generator DXpedition record. Other activity included 4W0VB (24KQ), C21HA, 9N1FE, A35IO, VP6T (56KQ), TN2T (50KQ), 9Q0HQ/7 (documentation still required), TO4M (FH) and FW0NAR. At times there were so many semi-rare stations active as the same time that they unintentionally QRMed each other.

February

The solar flux was mostly above 100 for the entire month. Conditions were good. Several of the DXpeditions that were activated in January were still active. In addition to the above, semi- rare activity was provided by ZK2C, SV2ASP/A (mostly RTTY), 5V7V, S01MZ, 6O3A, 3B9/OE4AAC, XW4XR, H40FN, 3DA0PW (13KQ), 3C6A (15.7KQ) and JG8NQJ/JD1 (MT).

March

Conditions in March began with Aurora but overall were very good especially on 6 Meters where many Southern Europeans were working into Africa on trans-equatorial propagation. Many DXpeditions followed. 3C0E (18KQ) started the month and worked many on 160 meters where it was high on the needed list. They were followed by TT8ES, 9N7BM, ZL7/VO1AU, CE0Y/NL8F, 9M6/OH2YY (Spratly), XT2s, ZD7XF (16KQ), J52HF, E51M (N. Cook 58KQ), HV4NAC, XU7SSB, HD9IWH/8, 5T0JL and 4U1GSC (counts for Italy).

April

April saw 6 meter trans-equatorial propagation with excellent conditions especially near the end of the month. More DXpeditions were available including 5X4B, KH8, 5W, VK9XS, TJ6RM, 9M0L (Spratly, 41KQ), JX9JKA, 5L2RL, VP8SGK (but only 8 Qs from S. GA), YJ0VK, C91JR, 9M6YBG, OJ0B, V63QFL, CY0/VE1AWW and PY0FM (FN). VK0TH completed his operation from Macquarie I. providing over 12,000 QSOs on CW, SSB and Digital. Prior digital QSOs from there were very rare.

May

The big news in May was the surprise operation of 7O6T from Socotra Island in Yemen. They worked all bands and modes and including 160 meters. Over 162,000 QSOs were made with over 37,000 unique call signs. They were followed by 6O0CW (53KQ), E40VB, S79RR, 5X5RO, VK9PN (LHI), XX9E (22KQ), A5A, 6O3A and PW0F (FN). XR0ZA (JF) was also active but mostly only on SSB in Spanish.

June/July/August

June, July and August experienced unsettled conditions near the start of each month. The solar flux hit the high of the year at 178 on July 9th. However, DX especially on the higher HF bands in the Northern Hemisphere is usually poor at this time of year. There was a large operation as A5A (38KQ) followed by TT8PK in June. 1A0C (41 KQ), KH8, H44, TY2BP, EL2DT, more OJ0s, FO/A, FO/M, VK3BF/VK9C and CY9M (cut short by weather. 25 KQ) were active in July. August saw operations from 9M4SLL (Spratly), D64K (61KQ), V63PR and VU7M (5KQ).

September
Conditions picked up in September but this is not unusual for this time of year. HC2AQ/8, NH8S (Swains Island. 105KQ), Z81A and Z81D (S. Sudan), VK9XS, Z60K (Kosovo. 18KQ), C21BN, VK9CS, 5U5U, 3D2C (Conway Reef. 71KQ) and ZD9UW (4.3KQ) were all active. An unusual operation/contest took place on the last weekend of September when all nine (9) Azores Islands were active making over 30,000 QSOs.

Newly licensed Amateur Radio operators from Kosovo are back on the air again after a 13 year hiatus. (Photo courtesy of G3TXF)

October
Many DXpeditions were active in October including 5U (26KQ), TO2M (FH), TT8TT, OJ0R, 3B9SP (24KQ), 9M8DX, T30PY (40KQ), 5V7TH, XX9THX, P29s from various IOTAs and CY0 (Sable I.). The later operation was cut short due to an approaching hurricane. High solar flux at the end of the month yielded excellent conditions for the CQ SSB DX Contest.

November
DXpeditions continued with YJ0AFU, 5V7TH, ZL7A, PT0S (St. Peter and Paul. 44KQ), V84SMD (39KQ), EL, CY0/VE1AWW, VK9s (LHI), VP8SGK (S. GA but only 35 QSOs), 7P8D (32KQ) and 5T0SP.

PY5CC, PY2XB, HA7RY and AA7JV put PT0S on the air from St. Peter & St. Paul Rocks (photo courtesy of PY2XB)

December
5T0SP was still active. After a weather delay, ZL9HR was activated and made 43,000 QSOs. H40FN was also active.

<u>And now the Drum Roll</u>:
These are approximately fifty (50) entities that were NOT believed to have been active during 2012 as follows:
Africa (16): 3B6, 3X, 3Y/B, 5A, 9Q*, E3, FR/G, FR/J, FR/T, FT5/X, FT5/W, FT5/Z, S9, TZ, VK0/H and ZS8.
Antarctica (1): 3Y0 (Peter 1).
Asia (7): BS7H, BV9P, EZ, P5, VU4, XZ* and YK.
North America (8): 4U (UN), FO/C, HK0A, KP1, KP5, TI9, XF4 and YV0.
Oceania (14): FK/C, KH1, KH3, KH4, KH5, KH5K, KH7K, T2, T33, VK9/M, VK9/W, VP6/D, ZK3 and ZL8.
South America (4): CE0/X, PY0/T, VP8O and VP8/S. Sandwich.
*Documentation still needed.
Please note that some rare entities may not be on this list because some operations, however short, were conducted during 2012. An example is the VP8SGK operation as mentioned above.

A list of DXCC entities that are believed to have not been activated in nine (9) or move years are: BV9P, CE0X, E3, FR5/J, FR5/T, FT5/Z, KH1, KH3, KH5K, KP1, P5, VK0/H and VP8 (S. Sandwich). This shows that an avid DXer working hard at DXCC may take at least 9-10 years to make 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 is not surprising and goes to P5, BS7H and FT5W in that order.

<u>Looking ahead to 2013</u>:
Solar Cycle 24 sunspots are ever so slowly increasing although sporadically. This will improve propagation on the higher HF bands, especially 12 and 10 meter and perhaps even open 6 meters on peak solar activity (SF>150). Look for the solar flux to go over 100 with low A (<20) and K (<3) indices. Solar wind below 300 KM per second and dynamic pressure less than 0.5 nPa as show on NOAA Space Weather (www.swpc.noaa.gov) are also good indicators of improved HF propagation.

January is usually a good month for Low Frequency operation. With more sunspots the higher bands should be good during daylight. Not too much info is presently available for forthcoming DXpeditions. However, for starters PY0F/PP1CZ is scheduled in January, 9U4U in February and TX5K from Clipperton in early March. T2GM, CE0Y and TO7BC (FH) follow. In April it's ZK3 with more DXpeditions to follow later in the year.

DX means many different things to many people. Some DXers are only interested in the ARRL DXCC Honor Roll and soon run out of interest and challenges. Others pursue the never ending ARRL Challenge competition. This award includes all the bands from 160-6 meters. 6 meters is a tough band for stations outside of Europe. Over 40 stations in Europe have worked over 200 entities on 6 meters while 176 entities is the maximum for USA with only 15 above 150! Hence the Europeans will probably dominate the top of the DXCC Challenge award for the foreseeable future.

N7NG promises more DX University sessions (www.dxuniversity.com), a DX training course similar in concept to Contest University. The first session was held in Utah and the second at the International DX Convention in Visalia, CA in April 2012. Also don't forget to support the various DX Foundations around the world that help make DXpeditions possible!

Some DXers also like to chase Islands for the IOTA (Islands on the Air) program by the RSGB especially during this 50th anniversary year and its special two year Marathon Award. There are approximately 1200 IOTA Island Groups and many have never been activated so there are lots of challenges. For the last several years, CQ Magazine has reinstituted the yearly CQ DX Marathon to see who can work the most entities in each calendar year. This program has a few more challenges by also adding eight (8) entities recognized only by CQ Magazine but not on the ARRL DXCC list as well as working all 40 zones. And there are the never ending DX Contests. There are lots of things to do. Don't let the airways die for lack of activity. Conditions have really improved. Stay active and join the fun.

Nostalgia:
Sometimes it pays to just look back several years and see where we were compared to where we are now. The ARRL DXCC Program is now over 75 years old. As many of you know, the original DXCC listing was discontinued after World War II. The present DXCC started anew on November 15, 1945 with a list of about 250 countries (as they were called in those days). Back in 1950 the entire list of DXCC Awards only took up a particle page in QST. Now the list of those who have worked all active entities takes pages!

Finally once again I am honored to be asked by Bernie, W3UR to write this review and for his valuable inputs and critique. Congratulate the stations that worked over 275 DXCC entities during 2012. Thanks also to John, K9EL, Dave, NN1N, and Wayne, N7NG, for their inputs and to my son Jim, AD1C for all his computer help! Jim was honored this year by receiving both the Bavarian Contest Club Award for service to ham radio and contesting and as well as being inducted into the CQ Magazine Contesting Hall of Fame. Congratulations Jim!

NOTE: Obviously all the opinions etc. expressed are solely mine as are any errors (I hope there aren't many) that I have made. **This write up is copyrighted**. Therefore copies or use of this review **MUST** first be approved by Bernie and then a courtesy copy of the reprint sent to W1JR.

Best of DX to you in 2013 and here's hoping to see you in the pile ups.

Joe Reisert, W1JR