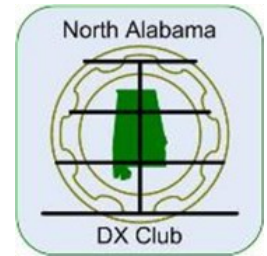


The LongPath

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From the President

By Bob DePierre, K8KI

The New Year seems a good spot to take inventory of things, reflect on where we've been, and where we should/could go. For the NADXC, our mixed bag is much more positive than otherwise. We are a fairly small club, with between 25-40 members often participating in our activities and events, and about 55 total dues paying members. That's much, much smaller than HARC. Yet we have the closest personal relationships of any such organization I've known of, we sponsor a DX banquet that beats all but a couple that you'll find at Dayton, and we write a monthly technical journal that spanned 35 pages just last month. Those are some achievements to be proud of.

Which brings me to our yearly budget, which we'll discuss at our next meeting. I like to think and do big, as do many of our most active members. Financially we're on firm footing, but a small group like ours has limits on how much money we can raise to keep these activities and events going. Right now we're in especially good financial shape due to Tom Russell/N4KG donating a sizable share of his estate to us – an event that had never happened previously. Events like this can't be predicted or managed ahead of time.

If you look at our budget page, you'll see a number of large negative numbers. We can live with this today and enjoy it. But we have limited capacity to increase the income so as to balance it out better. We could raise the dues, increase the banquet ticket price, invite a local banquet speaker, drop some of the ongoing expenses, find a less expensive banquet venue, or donate less to DXpeditions. Or we could just keep going the way we are – which would be ok until we auger into the ground. When I was the club treasurer a dozen years ago, I had a rule-of-thumb saying the year-end bank balance must never go below the cost of the banquet (now a \$5000 disaster insurance buffer). Be ready to vote on Tuesday.

We'll start working on the next banquet in February. The Spring Hill was close to maximum capacity last year. And we need to select and invite a speaker – any ideas?

I'm constantly impressed by achievements of club members. I'm sure you've read the spread in Dec CQ Magazine by Steve Werner/AG4W. Well, he's now been asked by a British Club to deliver a program on it!

A year ago, I sent out a survey asking about subjects you may want to

From the President (continued)

see us do or write about. Some of the responses were very surprising, and they helped...I think. I'm now asked to do it again. I'll change and update some of the questions to reflect where we are at now. All you'll have to do is mark blocks in the email I'll send you. Pretty easy. When you get it, would you please be sure to mark your responses and send it back to me?

Fred Kepner/K3FRK will deliver our next program, a historical one, on DX Entities. If you came to our Christmas Party last month, you'll remember that Fred was voted our 2021 DXer of the Year.

So, let's have the next NADXC club meeting



The Museum of Information Explosion

on Tuesday, January 11, at the Museum of Information Explosion at 1806 University. The Zoom sign-on will be exactly the same as in the past. I'll send members the Zoom invitation on Sunday just before the meeting. Again, remember to pick up your dinner on the way over. I'll get a few of you to help set up the tables and we'll just eat here. I'll open the doors by 5:45. The meeting will start at 6:30, and the program a little before 6:45.

High Voltage RF and Extremely L - O - N - G Antennas!

By Kim Hensley, WG8S

Here at the outset, I'm going to give you another view of RF, of the high voltage kind.

I've worked in the electric utility industry for almost 44 years now. As an engineer and a manager. I've been here in Huntsville 20+ years with Huntsville Utilities.

When I first arrived here, I was responsible for engineering as it pertained to our substations, and was sometimes pulled in for help in other areas.

Over the span of my career, I have worked with distribution lines and systems, transmission lines and systems, substations, and generation (hydro and steam).

I've enjoyed every segment. One co-worker, realizing the extent of my experience, asked me: "what's your favorite?" I can't settle on one.

The interaction with the people over the years has been great, both employees and cus-

tomers. At the end of the day, it's all about safety and keeping the lights on.

There's camaraderie like the military, but there's a difference. We have to be focused every day. The "enemy" is a daily, constant threat. You have a different work environment. The stress is already there. You don't need to add more.

Now to move from the general, to things here at home, Huntsville.

We've got a good group of hard-working people. The system is presently growing like crazy because of new homes, and new businesses. There's been covid. Storms. Added to this: supply issues.

Within the realm of substations, I've had to get our focus on increased safety, technological changes, and to get to the real reason for an outage, especially if substations are related.

Over the span of my career, I've worked for four (4) different utilities. A few years ago, that

High Voltage RF and Extremely L - O - N - G Antennas! (continued)

was not normal. It's more commonplace now, especially among the more specialized trades. One such trade is protection and control involving power systems, be it generation, transmission, or distribution.

Protective relays are the cornerstone of protecting electric power systems. Electromechanical relays were invented and developed early on for this role. They were extremely reliable back then, and today. With the advent of electronics and microprocessors, microprocessor-based relays are now widespread. In addition to protection, they provide a wealth of information and analytical information that was unknown in the past. They provide immense information when it comes to troubleshooting phasors, oscillography, waveform capture, etc.

Within the confines of 3-phase power and its characteristics, this provides a variety of tools for analyzing faults, problems, etc.

In the past, you may remain clueless for a long time as to why an event occurred. Now, some event anomalies are solved in a matter of minutes or hours.

Some electric utilities see themselves as technology companies. And why not? Getting electricity from a generating source to your house involves technology every step of the way. Unfortunately, not all utilities embrace that outlook. I'll leave that be for now, suffice to say there's leadership, and there's technical leadership. Not all leaders succeed at technical leadership.

From my first job, I was instructed and taught to review a job, and see how it could be done better the next time. Process improvement. That's been part of how I've done things my entire career. Something else I was gifted with: observation. When it comes to events, be they good or bad, what do you observe? What don't you observe? Those working for me know my emphasis on process improvement and observation.

The substations we have completed in the past year look nothing like the first substation I

did here 20+ years ago. A lot has changed regarding protection and control systems.

Returning to the local scene, most of what we have is a distribution system. The next layer up is the transmission system. While we do have that, it's not sophisticated. Both our distribution and transmission systems are radial lines. Some interties are possible, but it all depends on the local loading of the lines. The next layer are the substations. We have on the order of 100 or so. This seems like a lot, but we have "substations" that are dedicated to commercial/industrial loads only, and some of them are not very big. Our smallest substations are on the order of 3- to 5-MVA. Our largest substation totals 495 MVA.

In my first 10 years here, we had some substation outages with some anomalies to them. As there were electromechanical relays involved with scant information, it took some time to observe the processes, troubleshoot, and correct the issues.

Based on what I had seen to date, it was time to check the protection and control systems for about 3 dozen substations. Problems were widespread enough to realize there may be some systematic issues, and there were. We corrected deficiencies in 17 substations, and saw the number of substation outages significantly decrease.

Outages at substations still occur, but most are related to animal intrusions, weather events, and deterioration attributed to age and/or the outdoor environment (hot and freezing conditions).

Down at the transmission and distribution level, transmission line outages are rare. These are caused by lightning, high wind events, animals and snakes, trees, and vehicles.

These same things occur at the distribution level, but more often. There are more distribution lines, and therefore more exposure.

As voltage levels increase, spacing and the size of insulators also increase as they (their length) are directly proportional to voltage. Squirrels and birds cause a lot of outages at the distribution level, whereas they rarely do at the transmission level due to increased spacing. We do install mitigation materials for birds and squirrels.

High Voltage RF and Extremely L - O - N - G Antennas! (continued)

These are very effective, but an occasional bird or squirrel does get by.

At the service level, the distribution system is involved as well as the individual services to residents and commercial establishments. Voltages range from 120/240- to 277/480-volts. Trees and vehicles are involved with outages at this level.

Laying out services, distribution lines, and even transmission lines are fairly standard processes. This was recognized early on by electric utilities, so standardized “designs” evolved. Looking at this standardization you would think of it as a “cookbook” approach to the “design” and construction of these facilities. While this achieves very good economies of scale, there’s a negative side to this. If you don’t know the foundations to these processes, you can find yourself at a loss if you have to think outside-the-box. That’s why it’s important to have an educational process in place to make your personnel aware of the foundations, approach, and philosophy that made up these standards.

At every level from the source of generation to the network bringing electricity to your house, behind the scenes and mostly out-of-sight are the protection and control systems to keep the flow of electricity safe, reliable, and economical. These are made of circuit breakers, switches, fuses, and relays. These are coordinated to achieve safety and reliability.

We don’t want a tree taking down a power line in the front of your house to take out power to all of north Alabama!

Engineering is a big part of this, but it’s also an art. Some folks get it, and some don’t. Why an art? You’re trying to balance things. You have to take into account how devices operate, load levels, and fault currents. Short circuit currents are called fault currents. You can calculate fault currents. That’s a computer model. What really happens when a fault occurs? What lines have been switched around? What amount of genera-

tion is in place at that moment? What’s the condition of your grounds that day? Hence, your practice is an “art”.

What’s the source of electricity for us here in Huntsville? Electricity loves the path of least resistance. The bulk of our power comes from Brown’s Ferry. Other sources depend on network conditions. It could be hydropower from Wheeler or Guntersville Dams, solar, fossil, or gas turbines. It’s always a mix of resources.

Let’s move towards R.F. 60 Hz., the frequency of our electric system here in the U.S. A quarter wavelength is 776.5 miles. For the most part, it is contained. It doesn’t take off and radiate.

However, it’s high voltage likes to stir the pot if things aren’t right. When that pot gets stirred, we have R.F.I., which we’ve all encountered and/or heard at one time or another.

I don’t put myself at the forefront, but behind the scenes I stay aware of RFI issues. I have helped out on some. I listen to local repeater conversations. Sometimes I’ll get a phone call or email. Other times when driving around, I may listen to the AM band.

Years ago, we used to have some good equipment for doing RFI work, but that has aged and we haven’t kept up. We have TVA come in and help us. Their gear is from Radar Engineers. Their entire “tool set” costs something like \$15,000. I hope we can acquire this within the next year in order to be more responsive to RFI complaints.

I’ve tried to keep a consistent message to our folks that RFI is important. If the person suffering from this gets vocal enough, having the FCC to answer to won’t be fun.

RFI cases run from the simple (bad connections, bad lightning arresters) to the bizarre and strange. I’ve seen RFI generated on power lines for a distance of at least 3.5 miles from its source (a bad switch connection at 69,000 volts). I’ve also seen a 120-volt circuit without a proper return generate noise that blanketed an entire neighborhood. Sometimes there are cases that are not solved. You get a direction for the source,

High Voltage RF and Extremely L - O - N - G Antennas! (continued)

but despite your best efforts you can't find it. Those sources that come from residences can be hard to resolve. If the customer won't cooperate,

there's not much we can do other than be aware of the source.

I hope you've enjoyed this overview. Electricity to your house: it's more than flipping the switch to turn on your lights.

Ionospherica

By "Kai" Siwiak, KE4PT

Propagation Prediction Software can be Coaxed into Considering the Latest Digital Modes

There is no need to operate low power in the blind. You can stack the propagation odds of logging a new DXCC entity in your favor by using free software to predict your path link propagation performance. At least two propagation predictors are available for free. You can choose the Ham-

CAP¹ interface from Alex Shovkoplyas, VE3NEA, or VOACAP-Online^{2,3} by Jari Perkiömäki, OH6BG. Both are graphical interfaces to the free VOACAP HF Propagation Models from NTIA/ITS.

Here, I'll explain how to extend the propagation predictions to include the new digital modes.

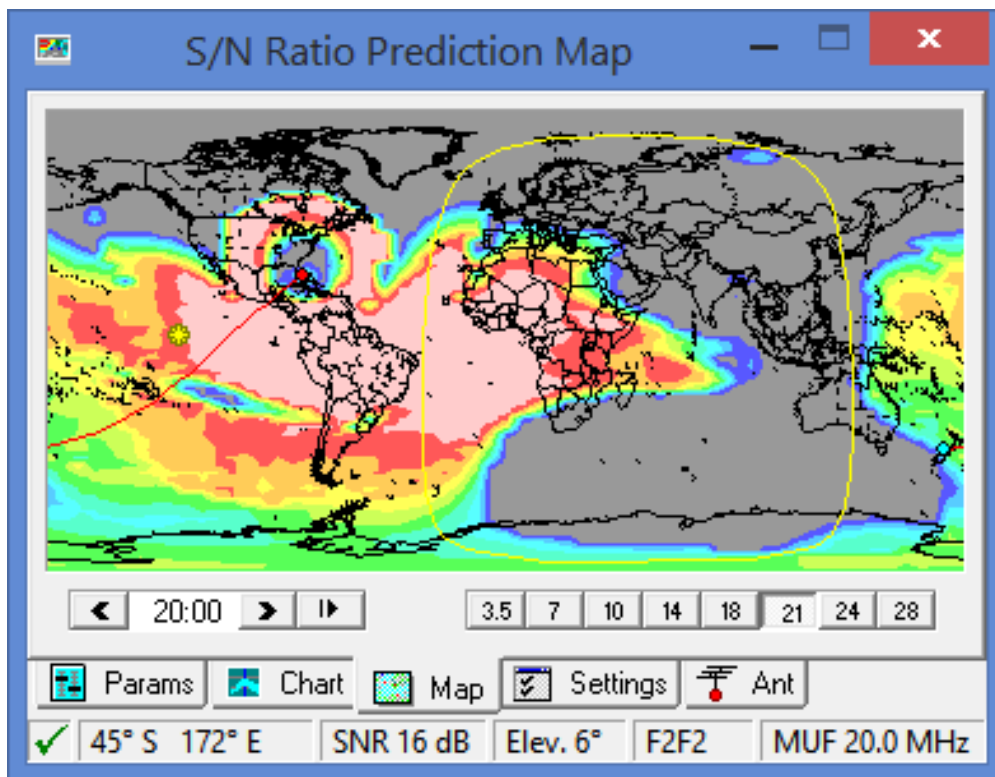


Figure 1 – Hovering your pointing device over a point on the map (here, New Zealand) reveals the latitude and longitude; SNR/Hz, and the propagation modes for a path between the transmitting station (here, Florida USA) and that point. [Image generated by HamCap: www.dxatlas.com/hamcap/].

Propagation Predictors

First choose the propagation predictor that you want to use, HamCAP or VOACAP-Online. Both are extensively documented, and both provide a wealth of choices and predictions.

Each of the predictors calculates the signal to noise ratio (SNR) available at the end of a link for your choice of transmitter power and antenna type at each end if the link. They differ in the way they accept your data parameters, and how they present the predictions.

HamCAP

One of the HamCAP presentations is SNR over a

Ionospheric (continued)

UTC 24-hour period versus frequency. Hovering your pointing device over the graph reveals the SNR at that frequency and time, for the transmit-receive path that you selected. Another presentation, Figure 1, shows SNR plotted on a small world map. Again, hovering over points on the map reveal the SNR that your transmitted power and antenna selections produce on the world map.

SNR? How is that useful? The SNR shown is the signal to noise ratio in a one hertz bandwidth. We can then relate that to various modes based on the chart of Table 1.

The key is that conversational Morse CW

Mode	Margin, dB	Equivalent Power
CW	0	5 W
PSK31	7	25 W
FT8	19	500 W
JT65	25	1,500 W

Table 1.— If you operate a digital mode from Figure 2 at 5 W, choose “CW” in VOACAP, then select the “equivalent” power level to compensate for the improved link margin of these mode.

Enter the power level from Table 1 into HamCAP, Then, hover your pointing device over the HamCAP presentation looking for the time and frequency combinations where the SNR is greater than 30 dB/Hz.

VOACAP-Online

The underlying VOACAP engine is the same as in HamCAP, but the VOACAP-Online user interface is different. You can select only AM, SSB or CW modes, and CW mode is set for an SNR of 24 dB/Hz, so we must “bend” the data to handle

requires an SNR of about 30 dB/Hz. Table 1 takes into account not only the receiver sensitivity but also the relative transmitter peak-envelope-power for a given mode.⁴

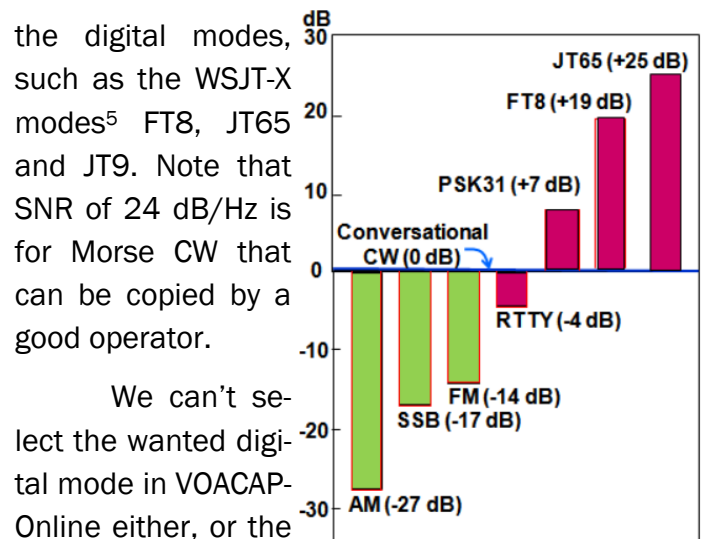


Figure 2 – The full path link margin between the, transmitter and the receiver, is linear, so we can chose another link-margin dependent parameter – such as the improvement offered by some digital modes. JT9, not as power, just as we did with HamCAP! better than JT65.

Again, we use the equivalent transmit power levels of Table 1 as the “conversion” so we can glean the performance of some of the digital modes using VOACAP-Online with “CW” mode selected. Per Figure 1, JT65 has 25 dB more ‘punch’ than CW, so instead of choosing 5 W, use 25 dB more power (1,500 W).

Figure 3 shows the time-frequency plots of the probability of a contact along a Florida USA to New Zealand path for three cases during October 2017. The left image shows Morse CW at 5 W, with 5 W entered as the transmit power. The center case shows the probability of an FT8 digital mode link at 5 W power. This is entered as “CW at 500 W transmit power”. The right hand image shows JT65 mode at 5 W, entered into VOACAP-Online as “CW at 1,500 W”. The power conversions are approximate, because I picked the nearest available power level data entry choice in VOACAP-Online. For example, FT8 and JT65 are

Ionospherica (continued)

about 6 dB apart in the link margin, but the nearest available power choices are 500 and 1,500 W; 5 dB apart. This is close enough!

As long as your input data are correct, the VOACAP engine will produce reliable results.

In Summary

The limitations in the data entry choices and in the presented results need not stop you from predicting the performance of various modes. The limitations can be overcome by using equivalent input data once you know the relative performance of the different modes.

Doing your propagation planning can reward you with spectacular low-power contacts, as it did on my recent excursion to New Zealand⁶. With propagation planning I knew what to expect, and when, and where. I could then select the proper digital mode to employ, and choose the

right time and band of operation.

References

1. Alex Shovkoplyas, VE3NEA, HamCAP, www.dxatlas.com/hamcap/.
2. Jari Perkiömäki, OH6BG, VOACAP-Online, www.voacap.com/.
3. Point to point prediction data entry, www.voacap.com/p2p/index.html.
4. K. Siwiak, KE4PT and B. Pontius, NØADL, "How much 'punch' can you get from different modes?", QST, Dec 2013 pp 30-32.
5. <https://www.physics.princeton.edu/pulsar/K1JT/wsjsx.html>.
6. K. Siwiak, "A New Zealand Portable Adventure" QST May 2015, pp 69-70.

Kazimierz (Kai) Siwiak, KE4PT, is an avid DXer who packs a DX Go-Bag station on his travels. Kai is Contributing Editor for QST, the ARRL Membership Journal, and is the Editor of QEX, the ARRL Forum for Communications Experimenters.

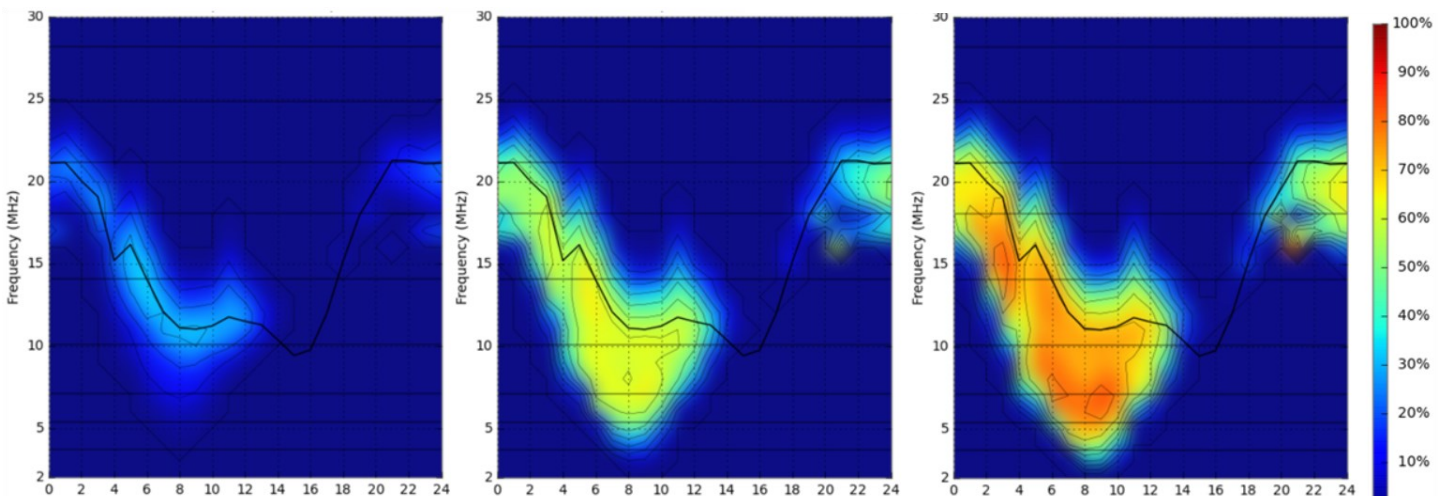


Figure 3 – The probability of a successful link between Florida, USA and New Zealand, using 5 W pep depends on the mode. Here, a CW link (left) has at best a 30% probability of success at a few time-frequency combinations. An FT8 link (center) improves those odds to about 60% and expands the time-frequency opportunities. A JT65 link (right) further improves opportunities, and increases the odds to 90% at certain times and frequencies. [Images generated by VOACAP-Online: www.voacap.com/prediction.html].

The Ultimate Christmas Gift

By Mike Werner, KF4BOG

I hope everyone had a good Christmas this year. I enjoyed my Christmas a lot. Having my girlfriend with me was a lot of fun. And having her share Christmas with me was fun all by itself. She watched me open my big gift this year. And what was that the gift you might ask? It was the Yaesu FTM-300DR. This dual-band transceiver has a lot for the new user of System Fusion. It's very easy to use and operate so much so you don't need the manual. Well, I actually cheated. I listen to a lot of YouTube videos and reviews. And who needs a manual when you can watch YouTube.

The FTM-300DR has a very nice display and works really well. My only gripe is that the head of the radio does not mount well to the body. I like the fact the radio is easy to program. You don't even need the programming software for this radio. Linking it to my hotspot was also easy. As you remember in one of my articles, I talked about my Pi-Star hotspot and how I got it to work with all my radios. Now with the new radio I am able to use it without having to use my handheld which required charging a battery. If you're going to use a hotspot with your radios, especially a mobile/base unit, I recommend having it on low power because the hotspots are sensitive.

My first impression of the radio was that it's very heavy and well-built. After speaking with the manufacturer, I can see why it's difficult to keep parts in stock for this radio let alone inventory because of its popularity. I believe this is going to be the replacement for the FTM-100 and 400. The pricing for this radio starts at \$449 at Gigaparts, but even they are out of stock.

Setting up the APRS is similar to one of my old radios, but it's a little bit of a learning curve. But once you get used to the set up its very easy.

Setting up Yaesu System Fusion for direct use was a little difficult because sometimes it would not connect directly to the node. Depending on what your location is you may need a higher gain antenna to hit the repeater. A hotspot is good if you live out in an area that is not close to a repeater.

I also found a website that has the manual for this radio. The website is <http://manualslib.com>. This website will take you through a lot of manuals and not just on radios. They probably have a manual for anything else you own. I recommend that you make an account with it so they can save the manuals for whatever radios you have. I did that for all the manuals I need since I tend to lose them.

As you can see in the picture shown this radio has a really good display. It's easy on the eyes and the color TFT display is much easier to read. This is especially good for those with poor eyesight. There are so many things that this radio can do I can't list them all. So, if you're looking for radio that you cannot only use as a mobile rig, but as a base station, this is the one for you.



KF4BOG's new FTM-300DR



Simplify Your HF Antenna Farm with an OCF Dipole

By Walter Miller, AJ6T

If your potential wire antenna supports are limited, you might consider installing an Off Center Fed Dipole (OCFD) to cover most of the HF bands with a single antenna. I have had great success with that approach.

Although some amateurs consider the OCFD to be a compromise antenna, I have found it quite effective and convenient. An OCFD can provide multi-band operation with reasonably low SWR on a single coaxial feedline. The theory of operation is quite simple. A dipole cut for the lowest frequency of operation (3.5 MHz) can be fed at an offset point (rather than at the center) where the impedance becomes relatively constant at multiple frequencies. Various designs with different offsets have been presented in the amateur literature, but the one I prefer is the W8JI design which is fed at 80% from one end (https://www.w8ji.com/window_off_center_fed.htm). The

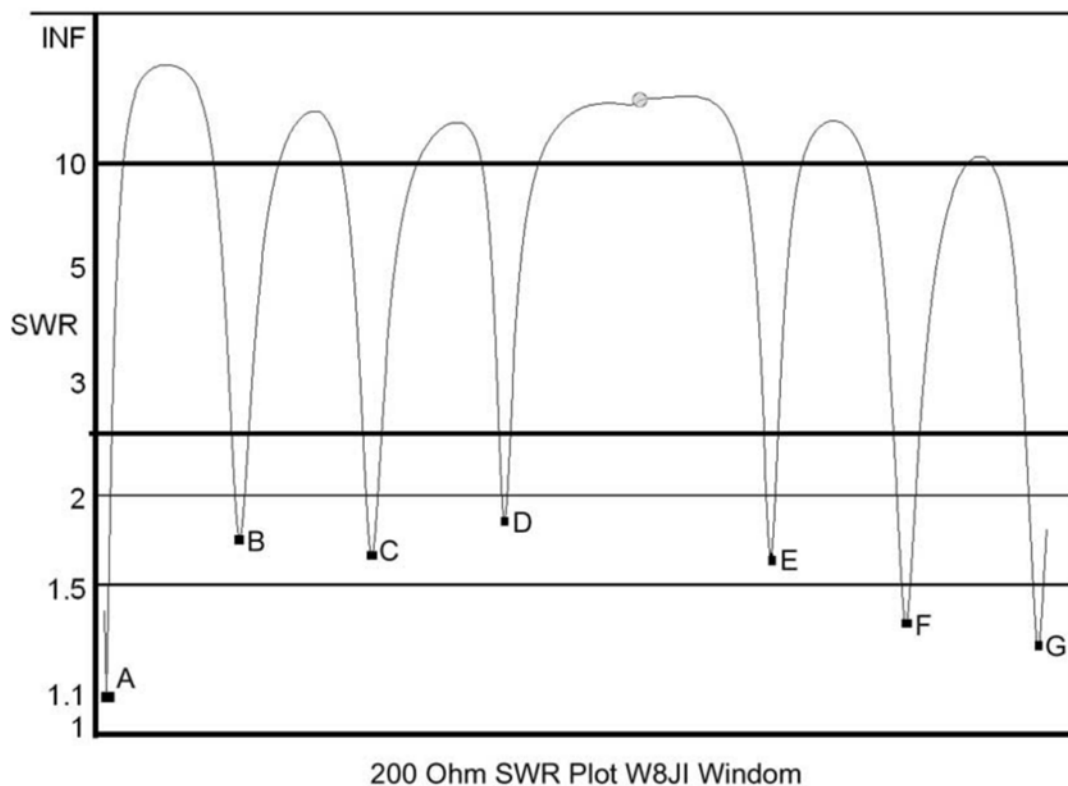
feedpoint Z of that antenna is close to 200 Ohms on 80, 40, 30, 20, 15, 12, 10 and 6 meters. When fed with a 4:1 balun backed up by a common mode current choke (to handle the imbalance due to the offset feed) the SWR can be below 2:1 on all those bands. A combination balun like that capable of handling 1500 watts (we are DXers after all) is not a trivial design as pointed out by W8JI. A commercial hybrid balun model 4116 from Balun Designs is recommended (<https://www.balundesigns.com/model-4116-4-1-hybrid-balun-1-5-54mhz-3kw/>).

Note that this antenna is not useful on 60m or 17m due to high SWR. That's a fair compromise for the good coverage on all the other HF bands.

Here is a plot of the 80% W8JI OCFD SWR versus frequency from the W8JI webpage. Notice

how nicely the SWR dips down below 2:1 in the various ham bands (A=80, B=40, C=30, D=20, E=15, F=12 and G=10).

I made my 80-meter OCFD from AWG 14 insulated house wire, and reduced the dimensions given in W8JI's web site by 2% to account for the effect of the insulation. The antenna resonates low in the 80-meter band, perfect for CW and FT8 but it's



Simplify Your HF Antenna Farm with an OCF Dipole (continued)

not especially useful up high in the SSB portion of the band. I mounted it at 50 feet strung between trees with pulleys and a counterweight to accommodate the trees swaying in the wind and fed it with 100 feet of LMR400 coax. In my version the SWR is well below 2:1 on all the designed bands except 30 meters where the SWR is about 2.8:1. A little touch-up on the K3 internal tuner takes care of that. My antenna even has a useful SWR on 6 meters.

An 80-meter dipole at only 50 feet is not a

low angle radiator, but even so I have worked plenty of DX with my OCFD. At the higher bands the DX performance is surprisingly good.

The pattern of the OCFD is the typical dipole double lobed shape on 80 meters, but at the higher bands the pattern becomes multi-lobed with peaks (some with significant gain) and nulls in azimuth. I've never had the impression that the antenna suffered from weak directions at the theoretical nulls, perhaps because the nulls are somewhat filled in at this low height.

If an inexpensive homebrew nearly all-band HF antenna intrigues you, perhaps there is an OCFD in your future. Try it, you might like it.

The Dreaded "QSO B4"

By Bruce Smith, AC4G

When current DX'ers and contesters had their interest first sparked to work DX or enter an amateur radio contest maybe by watching a mentor work DX on-the-air in a contest and/or visiting a contest at their QTH watching them rack-up QSO's in a contest, or perhaps having an opportunity at field day to rack-up QSOs for their club, a potential DX'er or contestator will be eager to join the ranks of their fellow peers and work toward a goal of becoming a DX'er or contestator themselves as soon as they can. Typically, this occurs after having obtained a "ham radio" license in hand for a few years and maturing thru the ranks of amateur radio. These new hams are eager to get on the air to make contacts of their own with a goal of either increasing their DXCC totals or increasing the number of QSOS in a particular contest.

DX'ers chase dxpeditions to increase their country totals, while contesters look for the major contests to "run" and attempt to out-do their contesting peers making a few hundred or a few thousands QSOS in a contest. After spending much

time on-the-air, sometimes we may be surprised to hear the dreaded "QSO B4".

Some ham radio operators have a policy to make only one QSO on each band and mode with a radio amateur. They absolutely will not QSO you for a second QSO on a particular band or mode after being in their logbook assuming you both had a legitimate QSO and both logged it. They merely send you the "QSO B4" message. Have you ever received this message?

I must admit that I have. Sometimes band conditions, deliberate QRM, QSB, etc. prevent a ham from receiving the needed QSO exchange information for logging the QSO. Insurance contacts are a No-No as well. Why do some hams have a policy of not QSOing twice on a specific band and/or mode? What does a policy of this sort accomplish? I can tell you that I have had to either wait a long time for another dxpedition to a rare country or another ham with a completely different callsign in a rare country in order to put the needed "new" DXCC country in the log on a partic-

The Dreaded “QSO B4” (continued)

ular band and/or mode.

Perhaps, we all have been in a pileup to make a QSO with that coveted dxpedition on the “Most Wanted” list or make a QSO with the rare and semi-rare contester that can provide a multiplier giving us an advantage over our fellow contesters during a contest. Sometimes the band is noisy with QRN or QRM. We transmit our callsign and exchange believing we made a contact, but sometimes we are just not sure if the DX got our callsign correct. So, after several minutes contemplating whether we made the logbook of the rare entity, we try again to make an insurance contact. Rest assured on top band (160m) where the band is typically noisy, I have done this a few times hoping to make the QSO to the rare entity. Sometimes after a second attempt at making the QSO on a different time/day might work, still receive the dreaded “QSO B4” message, and am not in the log at all after a Dxpedition departs their DX location. This really hurts.

Years ago, Tom Russell (N4KG-SK) used to tell me, “if you are not sure, make an insurance contact.” I understand that if every DXer or contester made an insurance contact, the rare entity would be taking time away working those that have not attempted a QSO. To be honest, for me, making an insurance contact rarely occurs. Conditions and propagation sometimes force me to attempt to make a contact in these conditions when the contest has limited time duration or when the rare Dxpedition has only a day left before they pack-up and leave. In a contest, it does not take that much time for the DX to simply log another contact with me and doing so does not penalize the DX contester. Don’t worry if you have already worked them in a contest, log it again. It does not

go against your score.

Actually, a few weeks ago in the Stu Perry Top Band challenge, I received a “QSO B4” from a ham in North Carolina of all things. I know exactly what went wrong. The NC station was very close to a weak European station that I was attempting to work. I heard the NC station send my callsign $\frac{1}{2}$ kHz down and give me a signal report with my tight CW filters activated. I did not immediately respond to the NC station focusing on the exchange being received by the DX station. I sent the rare DX a contest exchange a couple of times before the rare DX confirmed. Apparently, the NC station mistakenly recorded this as a contest QSO with me all the while I did not know what had happened until later. In the meanwhile, I moved past the NC station (who apparently logged me in his logbook) chasing other DX contesters on top band planning to run back up the band to QSO the US stations I could hear and work. When I ran up the band, I attempted to QSO this particular NC station only to hear that the station sent me the dreaded “QSO B4” message. I assume he did not log me this time, but I LOGGED HIM. One problem with this. Neither of us have a QSO in this contest that counts for any points. The NC guy logged me while I worked the rare DX probably because stations were only $\frac{1}{2}$ kHz away from each other, thinking I was working him, but I did not log the NC station because I was not working the NC station. I only realized this when I actually tried to call the NC station on my first REAL attempt chasing US stations. And when I passed back up the band, I attempted to QSO and work the NC station when he sent me a “QSO B4”. Neither of us wins due to the mentality of the “QSO B4” message.

It would have been advantageous for the NC station and DX stations not to worry about a second QSO with me. My recommendation would be for the NC station and DX stations promoting this policy to log the “second” QSO rather than fret

The Dreaded “QSO B4” (continued)

over a second QSO in his logbook. Why would I work him two times if I had logged him the first time? Could something have been amiss the first time? N1MM clearly shows dupes and I had not logged the guy, because N1MM did not show a dupe in my log. So, it would have been in his best interest to wonder why I am attempting to QSO him again and log me a second time. Needless to say, for this contest we both lost out on a QSO and contest points. Why not log twice to make sure the QSO counts? It does not go against either of you if the QSO is logged twice. Only one of the QSOs would count anyways. You are not penalized for dupes either.

Which brings me to my final point. If I were chasing rare DX and the DX station had sent “QSO B4”, would I not still be needing the DX country for a QSO whatever the circumstances be? If they would not QSO me a second time, the dpxpeditions would depart their rare DX country leaving me without a QSO for a long needed DXCC entity on a particular band or mode. I could have to wait for years to get my needed QSO with this rare entity.

Another example...while monitoring 60m FT8 the other day, I saw a few stations that had QSO'd HR5/F2JD a few times. Apparently, the US stations were not satisfied that they had QSO'd this station. The DX station QSO'd them about five times. It was very obvious that the US stations could not receive the “RR73” from the DX in fox/hound mode that I was receiving on the band. The DX station did send the usual “RR73” and perhaps logged multiple times. So, what? Did the US station log the QSO(s) or merely write it off as ‘unable to make the QSO because they were not able to receive the “RR73”?’ My point is that sometimes conditions prevent one operator from

hearing that their QSO was confirmed.



Picture 1: AC4G's (ex- N4GAK) 1990 Bouvet Island QSL Card

In my last example, in January 1990, Bouvet Island (3Y5X) was active. I worked them on 15m SSB and thought I had them on 20m SSB. This was in the good ole days when packet clusters were not around and we used the 2m repeater to announce DX. You really had to listen and make sure you were in the logs. There was no “Clublog” in those days to verify your contact, only a buddy on 2m that may say, “good job, you got ‘em.”. Unfortunately, only after this dpxpedition had ended and the team made it home, did I learn that I had made only the 15m QSO when my QSL card was delivered. Fortunately, these days we have online cluster tools which allows one to see if they made the logs, if the dpxpedition uses these tool. We are spoiled. My point is that perhaps I should have tried again if I had any thought that he had not worked me. Would he have worked me again if I had indeed been in the 20m SSB log? Or would he have sent me “QO B4”? One of the worst causes preventing the QSO/callsign exchange is deliberate QRM (DQRM) which I have experienced many times. The dpxpedition transmit frequency was jammed for hours with profanity and other innuendos. I recorded the terrible DQRM during this 3Y5X dpxpedition from the begin-

The Dreaded “QSO B4” (continued)

ning to the end, but I dare not play it in public due to the profanity, etc. The dxpedition transmitted out of the US Phone Band listening up in the US band for US operators, but many US operators were heard transmitting their call-signs out-of-band just causing more confusion. It was reported that the FCC was called and hundreds of operators were given citations during this dxpedition. Due to the distance and lack of satellite phones and good HF communications, the 3Y5X team did not understand this until after the dxpedition. This is why I had difficulty on 20m and other HF bands. I simply gave up – I was flustered after trying for days on end and hours trying to get thru this mess. These were the worst behaved ham operators I have ever witnessed first-hand in a pileup! Be reminded that propagation was not there a lot of the time either for our part of the world. Knowing now the rarity of this DXCC entity, I wished I had not have given up so quickly. It has been almost 25 years since Bouvet has had any significant dxpedition and it would behoove us to make sure we are in the log even if we get the “QSO B4” sent to us even if it is an insurance contact.

3Y5X

OPERATORS: LARS, Einar, LAZOV, Kire, JFIST, Jin, FCOM, Jacky, HEGARL, Wily
QSL MANAGER: LAWM, Erling

EQUIPMENT:
HF: 5 sets 100m IC-781A, IC-2KL, AT-300
100m IC-5750
Antennas: Huska Y5-35, Nagara TA-351, TH-3-3, Battlecreek Special, Butternut HF5-A, Dipole, Maspro 5015
Generators: Rohco, Honda EB-3000
Helicopter: Hughes 300, UN-OTF

CONFIRMING QSO:

STATION	DATE	UTC	BAND	MODE	RST	Verified by
N4GAK	11 JAN 90	2308	21MHz	SSB		[Signature]

Computerized log by LAUK, LAIK and LAIT

BOUVETØYA

The island was discovered January 1, 1799 by Frenchman Jean-Baptiste Lamar Bouvet. It was the first known sighting of land south of 50° South. The first landing was by an American expedition in 1925. The island was more accurately positioned by the German Meteor expedition in 1926-27. In the 1927-28 southern summer Consul Lars Christensen of Norway equipped the vessel S/S Norge for scientific research in the South Atlantic, and the expedition landed and claimed the island for Norway on December 1, 1927. A Norwegian law of 1930 gave the island status as dependency, a status with seals, penguins and other sea birds. By a Royal Resolution in 1935 sealing was prohibited on the island, and a Royal Decree of 1975 declares the island as a nature reserve.

The island is located at 54°25' S and 3°21' E, and measures 6000 ft by 9 km. Fully 95% of the island is covered by ice, and steep cliffs almost around the whole coast, together with high seas make landing very difficult. The island is located at the southern end of the Mid-Atlantic ridge, and is an extinct volcano. No volcanic eruptions have been reported by visitors, but fumaroles are frequently observed. The area Nydøya was formed by a large rock-slide between 1965 and 1967. This area on the west coast of the island is the only safe site for expedition camps. It forms a plateau rising to an elevation of about 50m above the sea-level. Past Norwegian expeditions had made an accumulated total of about 2500 QSO's from the island: 3Y5VC and 3Y5CQ in 1977, 3Y5VC and 3Y5CQ in 1978-1979.

Picture 2: Back of 3Y5X Bouvet Island AC4G (ex-N4GAK) 1990 QSL Card

I believe that if a ham is calling for a second time, the DX should realize that their “QSO B4” policy is flawed and for some reason the stations needs another QSO to make sure they are in the logbook. With a rare entity like Bouvet Island, can we expect this behavior again? I hope not! In my opinion, the DX should go ahead and allow the calling station to make another QSO and log a “dupe”. I believe the DX should stick with making a successful QSO instead of moving on to another station in order to make as many QSOs in the final QSO tally for their dxpedition. It should be about making “successful” QSOs, not making a large number of QSOs for that dxpedition to be “Dxpediton of the Year”.

I hope you do not ever have to receive the dreaded “QSO B4” message. Make sure the other station is working you and that you transmit and receive your exchange before relenting. The 2022 and 2023 dxpeditions are getting here fast. I trust you will give this some consideration and that the DX will also re-think their “QSO B4” policy while working each of us on the receiving end. Good luck and see you in the upcoming pileups.

2022 NADXC Officers and Directors

President	Bob De Pierre, K8KI
Vice-President	Steve Molo, KI4KWR
Sec./Treasurer	Chris Reed, AI4U
Directors:	Bruce Smith, AC4G
	Fred Kepner, K3FRK
(Ex-Officio)	Steve Werner, AG4W

How to Join

Come to a club meeting or send in an application by mail (form on www.NADXC.org)

This edition of The LongPath published by:
Fred Kepner, K3FRK

A Time for Reflection and Planning for 2022

By Steve Werner, AG4W

This is a time for reflection on last year and planning for next year. Many of my plans for ham radio got changed last year due to two lightning strikes that were really tough to deal with. Before this year my last and first lightning strike was in 2012. I hope I will not see another in this new sunspot cycle. I thought I had repaired all the damage from the last strike in June and my 40 meter vertical array failed in the CQWW RTTY contest. I was amazed to see the inside of the control box because it was all black. It is hard to imagine how it worked for the first half of the contest. The lightning melted a relay. Replacing everything in your shack is difficult and takes time. I improved my lightning protection in 2021 and have more plans to improve it in 2022.



AG4W's 40-meter array control box

Upgrading my computer was done three times last year, once before the first lightning strike in April and again after both lightning strikes. The last time I changed computers was 2012. I should have done it sooner. I have upgraded from a second generation i7 processor to an 11th generation i7. That plus solid state drives gives amazing performance. The new Dell is also

quiet enough to use with my EME station. That was a big improvement from using an underpowered low noise laptop.

I managed to melt the coax again on my EME station antenna. The coax was not derated enough for when the SWR went up when it rained. Coax is rated for 1:1 SWR. It all worked for the first weekend of the EME contest. It rained right before the second weekend. I had melted that co-



Top: AG4W's center insulator after lighting strike.

Bottom: AG4W's new center insulator

ax before and upgraded it to Airborne 10 Messi and Paoloni. I just upgraded that to LMR-500. I believe the much larger size will help dissipate heat better. I think water got into the shield of the old coax. I have also changed my center insulator design. In the end I have tried to make lemonade out of all the lemons I have been given last year.

One of the goals I had for last year was to write an article for CQ magazine. I ended up writ-

A Time for Reflection and Planning for 2022 (continued)

ing three. There are so many exciting things to do with ham radio. I hope I have encouraged others to try something new. As a result of my recent EME article in December I have been asked to do a Zoom presentation in February for the Denby Dale Radio Club in England. That should be interesting.

For next year I highly encourage you to try something new. It can be a new band or new mode. It can include operating portable or remote. Maybe you should try QRP or QRO. It is time to make sure your high band antennas are working. The sunspots are coming back. It is a great time to consider an antenna upgrade. You should also consider participating in a DXpedition. If you never tried operating at a multi-multi station that is great fun.

You should consider going to a hamfest you have never gone to. Everyone should go to

Dayton once. If you do you will go back. Orlando and Friedrichshafen are also great places to visit with other non ham attractions.

If you have never given a club presentation try it. The research you do for it is half the fun. Another thing you can do is improve your ham skills. I plan to improve my CW skills this year so that I can run with a pileup at over 25 WPM for a long period of time. Morse Runner is a good program to develop those skills. I think it is important to exercise the brain and your body as you age. What better way than high speed CW.

You can also try to earn a new award or endorsement. I plan to continue to add band countries to my DXCC Challenge and grid squares to my 6 and 2 meter VUCC. If you think 160 meter DXCC is tough try 2 meter VUCC.

Whatever goals you set for this year take a baby step this week to get started. Then tell others in the club about it and you will get help if you need it.

Products in the Spotlight

By Steve Molo, KI4KWR

DigiRig Interface Kits

The DigiRig Interface Kit will be available very soon and will support several radios from various manufacturers. Kits for the following series of radios will be available at the initial release: BAOFENG, Lab599 TX-500, Xiegu G90/X5105, Elecraft KX2 and KX3, Icom IC-706, and Yaesu FT-8XX.

The DigiRig Digital Interface Kit is a digital modes interface requiring only a single USB connection to your computer or laptop. Inside the small, sleek box is a USB hub, audio codec, and a serial CAT interface. This turnkey kit comes with everything needed to operate digital modes on your radio.

Features:

- Combines audio codec and serial CAT interface
- Supports full featured CAT interface: PTT, bands, tuning etc. (not just VOX based PTT)
- Connects to your computer with a single USB connector
- Serial TxD/RxD lines can be switched to open-collector PTT/CW drivers controlled by RTS and DTR line of COM port
- Auxiliary connection points to CM108 codec – used in Allstar homebrew node builds
- Uses widely supported CP2102 serial interface ([latest driver here](#)) and CM108 audio codec

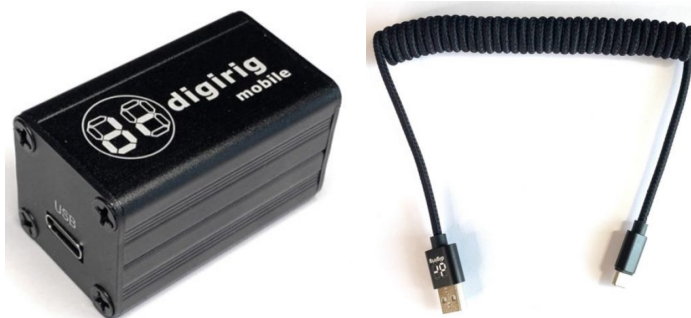
Products in the Spotlight (continued)

(generic audio device – no driver necessary)

- Small, rugged, and sleek aluminum enclosure ideal for mobile operations

Kit Includes:

- DigiRig Mobile
- Coiled USB-A to USB-C Cable
- Radio Cables for DigiRig Mobile



Above left: DigiRig Mobile unit
Above right: USB interface cable
Left: Radio interface cable for Yaesu FT-8XX

As soon they arrive, I will be getting one for my IC-706MKIIG Go-Kit for operation with digital modes. Beyond adding the ability to operate HF digital modes, this tiny unit will allow VHF/UHF users to add Winlink and APRS capabilities to their radios.

GigaParts Personalization

Have you seen the LED desk lamps that some operators show in their shack on YouTube or QRZ? Well, now you can get one from GigaParts and you won't have to wait weeks for it to arrive. Gigaparts is currently offering the following pictured designs. These designs are laser etched into lamp. The lamp in the first picture can be

customized with your callsign, the other three are not customizable. Regardless of which design you choose, these lamps are a cool addition to any ham shack. For other items please check out the following link: <https://www.gigaparts.com/personalized-items>



Four LED lamp designs are available from GigaParts. The top left lamp can be customized.

GigaParts
Technology Superstore

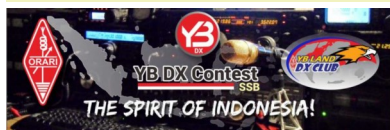
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Upcoming DX Contests

By Chuck Lewis, N4NM



YB DX Contest, (SSB), 80-10 meters

Jan. 8, 0000Z to 2359Z

Exchange: RS plus serial number

See page 76, Jan QST and

www.ybdxcontest.com

EUCW 150 Meter Contest, (CW), 160 meters

Jan. 8, 2000z to Jan. 9, 0700Z

Exchange: RST, Name, Member or "NM"

See Jan. QST and www.eucw.org



NRAU-Baltic Contest (SSB), 80 & 40 meters

Jan. 9, 0630Z to 0830Z

Exchange: RS, Serial #, region/province/
Fylke/lan

See Jan. QST and www.nraubaltic.eu



DARC 10 Meter Contest, (CW/SSB), 10 meters

Jan. 9, 0900Z to 1059Z

Exchange: RS(T) plus serial No., DOK code

See page 76, Jan QST and www.darc.de



Malaysia DX Contest, (SSB), 80-10 meters

Jan. 15, 0000Z to Jan 16, 2359Z

Exchange: RS + Age

See page 76, Jan. QST and

www.9mdxc.com

HA DX Contest, (CW/SSB), 160-10 meters

Jan. 15, 1200Z to Jan 16, 1159Z

Exchange: RST + S.N.; HA sends

County

See page 76, Jan QST and www.ha-dx.com/en



BARTG RTTY Sprint, (DIG), 80 -10 meters

Jan. 22, 1200Z to Jan 23, 1200Z

Exchange: Serial no.

See: page 76 Jan. QST &

www.bartg.org.uk



UK/EI 80 Meter Contest CW, (CW), 80 meters

Jan. 26, 1200Z to Jan 26, 1200Z

Exchange: 6 char. Grid square

See page 76, Jan. QST and

www.ukaicc.com

CQWW 160 Meter Contest, (CW), 160 meters

Jan 28, 2200Z to Jan 30, 2200Z

Exchange: RST + State/province; DX
send RST + CQ zone

See page 76, Jan. QST and

www.cq160.com



REF French Contest, (CW), 80-10 meters

Jan 29, 0600Z to Jan 30, 1800Z

Exchange: RST plus serial no. (F stns.
give Dept. ID)

See page 76, Jan. QST and <http://concours.r-e-f.org>



UBA (Belgium) Contest (SSB), 80-10 meters

Jan 29, 1300Z to Jan 30, 1300Z

Exchange: RS(T) plus serial no.; ON sends
province

See page 76, Jan. QST and www.uba.be/en



Beware — dates & times often change or are misprinted in the journals.

DXpeditions in January 2022

Reprinted with permission of Bill Feidt, NG3K

January					
Start Date	End Date	DXCC Entity	Call	QSL via	Info
2022 Jan01	2022 Jan20	St Martin	FS		By F8AAN as FS/F8AAN; 40-6m; CW; 100w; verticals
2022 Jan04	2022 Feb06	Sint Maarten	PJ7	LoTW	By VA3QSL as PJ7VA3QSL fm IOTA NA-105; 40-6m; CW SSB + digital; QSL via
2022 Jan09	2022 Feb18	Montserrat	VP2MDF	W2APF	By W2APF; 80-10m; CW SSB; 100w; Buddipole, Hexbeam, Delta Loop
2022 Jan20	2022 Feb01	Guadeloupe	TO6S	F6KJS Direct	By F6BCW F1MNQ F1TCV F5LRL VE7KW fm Terre de Haut I (IOTA NA-
2022 Jan20	2022 Jan27	Mauritius	3B8HH	See qrz.com	By HB9DNG fm Pereybere; 80-2m; CW PSK RTTY, some SSB; daily fm 1800z;
2022 Jan23	2022 Feb01	Aruba	P4	DL4MM	By DL4MM as P4/DL4MM; HF w/ focus on low bands and WARC; CW
February					
2022 Feb03	2022 Feb20	Zimbabwe	Z2	LoTW	By DL7BO as Z22O and dDJ6TF as Z21A; 160-10m; CW SSB FT8 FT4
2022 Feb08	2022 Mar01	St Kitts & Nevis	V4	LoTW	By KG9N as V4/KG9N fm St Kitts (IOTA NA-104); @V47JA; HF; QSL via KG9N



North Alabama DX Club Draft Budget for 2022

Draft Budget for 2022			
	Proposed		
Description	2022 Budget	subtotals	2021 Actuals
Bank Balance, Beginning of Year	\$7,436.35		8,638.51
Projected Dues receipts (est. 55 members @ \$15 each)	\$720.00		720.00
Ongoing Expenses	\$488.00		
Repeater Power Bill (Janet Richardson)		80.00	
Repeater maintenance		100.00	
Annual Web Hosting & Domain Service		73.00	72.72
Young Ham of the Year Plaque			
Memorial Brick and Replica			271.95
Plaque, Dxer of the year		60.00	59.99
Annual Club Picnic (picnic supplies)		75.00	
Christmas Party Room Reservation		100.00	250.00
DX Expedition Sponsorship Cap	\$1,000.00		1,000.00
Annual DX Banquet	\$110.00		267.50
Annual DX Club Banquet Receipts		4940.00	4,636.00
Annual DX Club Banquet Expenses - venue & meal		4450.00	4,075.90
Ticket Refunds			266.00
Venue Deposit		300.00	300.00
DX Banquet Speaker Expenses: transport, lodging, meals		300.00	261.60
Net Difference in Bank Balance	\$878.00		\$1,202.16
Bank Balance, End of Year	\$6,558.35		\$7,436.35

Upcoming NADXC meeting:

Tuesday, January 11th, 2022

5:45 PM doors open / 6:30 PM business meeting and program

Program: Top 20 Most Needed DX Entities (Part 1 of 2)

Location: Museum of Information Explosion and via Zoom

[Click here to join the meeting](#)