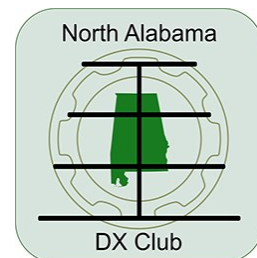


# The LongPath

June 2025 — Volume 49 Issue 6

A North Alabama DX Club Publication



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## From the President

by Bruce Smith, AC4G

Dayton Hamvention was a blast! If you were not able to make it, I included a brief article in the Long Path newsletter online at [www.nadxc.org](http://www.nadxc.org) writing about my adventures at Dayton Hamvention this year. The company in the vehicle on the way to/from Dayton also added a touch of adventure riding with other NADXC members and discussing many amateur radio related topics.

There are some upcoming ham-fests that I plan to attend to sell some of the remaining silent key equipment. If you are interested in any of it, please let Bob, K8KI or I know before we sell it at Lebanon Hamfest, Knoxville Hamfest, Huntsville, or at some other location, etc.

I am looking forward to our meeting on June 10 and seeing each of you and hearing about the DX our members have logged into our individual logbooks over the past month. DXpeditions that are active or soon to be active are ZC4, OY, 5R, MJ, and other holiday style events. We will have more discussion about our banquet in August. We have selected a speaker for our Banquet this year. Our speaker is James Gallo, KB2FMH who has been on many DXpeditions with Steve Werner, AG4W and is also a team member

of the upcoming Bouvet Island DXpedition in 2026. He will be speaking about Burkina Faso (XT2MD) and Bouvet 2026 at the NADXC Banquet. Please be sure to purchase your banquet tickets online to enjoy the excitement that James brings to the table.

Fred, K3FRK has lined up another great program for us for the month of June and at our next club meeting. Rick Dorsch, NE8Z/HC1MD will be discussing his DXpedition to Galapagos Island, HC8MD and continued operations as HC1MD/2 from Ecuador. Please try to be present at this meeting and support Rick.

I will send out the typical email prior to our meeting as a reminder and include the ZOOM details for you that may not be able to attend in person. I look forward to seeing everyone on June 10 at the Signals Museum of Information Explosion on University Drive, Huntsville, AL.

Reminder: Field Day is  
June 28-29



## Journey to 6-Meter DXCC

by Chris Arthur, NV4B

As we find ourselves in the midst of another 6-meter sporadic-E season (and the summer doldrums on HF), many DXers are now turning their attention to the Magic Band. Working 100 DXCC entities on 6m is a real challenge, but it can be done. For my tiny station, it took 27 years of on-and-off 6m activity, but this year, at long last, I was awarded 6m DXCC #2,551.

My 6m quest began in 1998 with the purchase of a used MFJ 9406 10-watt radio from my friend Ray Potts, WB5VGV (now SK) and a new MFJ 1762 3-element Yagi from Martin F. Jue himself at that year's Tupelo Hamfest. I put the antenna up on a TV-type telescoping mast and made my first QSO with W3HHN on June 1. My second QSO, incidentally, was with a giant of the VHF/UHF weak-signal world, Emil Pocock, W3EP, who wrote "The World Above 50 MHz" column in QST for a number of years. I didn't fully understand it at the time, but I was getting my first lesson in the power of sporadic-E propagation. I was simply amazed at how many stations I was able to work with such a primitive radio running so little power.

In 1999, I upgraded to 100 watts on 6 meters with an ICOM IC-736. I made contacts in the June VHF Contest for the first time that year, although not enough to send in a score. I made a total of about 100 6m QSOs over the summer of 1999, but my country count remained at 2, having worked only Ws and VEs.

My activity became highly sporadic (no pun intended) over the next few years as college became the primary consumer of my time until 2006, by which time a Yaesu FT-847 had replaced the IC-736 as my "daily driver." By 2010, I was starting to get more serious about VHF contesting, but my country count remained at 4, having add-

ed XE and ZF by that time. However, in the 2011 June VHF Contest, I worked YN2PR with an FT-817 during my first QRP portable outing on VHF from Woodall Mountain, MS, and worked CO and VP5 the next month to bring my DXCC total to 7.

I would work only four more new ones (FM, HI, FP, and 6Y) over the next four years despite frequent 6m activity from home and QRP portable from the field in contests. Little did any of us know how much the game would change in 2017.

2017 started off with a good opening to the Caribbean on May 28, netting three KP4s, FG4NN, and KV4FZ, and, after a QRP portable QSO with C6ATA in that year's June VHF contest, my DXCC total was up to 15. But the real news came on July 11 with the release of WSJT-X 1.8.0-rc1, which contained a new digital mode called FT8. Coincidentally, just prior to FT8's release, I had begun using JT65 on 6m after noticing a precipitous decline in the number of responses to my CW CQs. Prior to 2017, I had mostly avoided digital on 6m because my analog soundcard interface was particularly susceptible to RFI on 6. I made my first 6m FT8 QSO on July 28, 2017, with VA3HP and never looked back. Within a few days, I was leveraging remote desktop software to operate remotely – albeit without rotator control – and on August 2, made an unforgettable first 6m QSO with Europe with G4IFX, whose signal was solid for the better part of two hours. TI3/W7RI provided the final new country of 2017 on August 4.

With the advantage of the powerful new digital mode, I worked 12 new countries in 2018, beginning with the first of several QSOs over the years with V31MA on May 13, F5II on May 20, and EA8DBM on May 29 for my first 6m Africa QSO.

## Journey to 6-Meter DXCC (continued)

June 4 was the first big, wide-ranging opening to Europe that I caught, and despite hearing 20-plus would-be new ones including 5B4 and 9K2, the only two I managed to work were EA3LL and CT1ILT.

PJ4V, YV6IA, VP9/WA4PGM, and HH2MK on June 9, VP2ETE on June 14, CU3AN on June 17, and ON4GG on July 8 rounded out the list of new countries worked in 2018.

Despite a good bit of activity – including finally getting around to putting up the Cushcraft A50-5S 5-element Yagi I bought in the Huntsville Hamfest flea market two years prior for just \$25 – I did not work any new countries in 2019, so my total remained at 29. 2020, however, was a completely different story.

As bad as the COVID-19 pandemic was and is, it came at a good time for me personally as it allowed me to work full-time from home during a time when my grandmother's health had declined significantly (for reasons unrelated to COVID), necessitating a full-time caregiver. A fortunate coincidence was the phenomenal amount of activity and propagation that we had in 2020 due to others similarly working from home. I got my first taste of transequatorial propagation on April 13-14, working LU5FF and HC2AO plus a backscatter QSO with TG9ADQ. May brought some double-hop sporadic-E QSOs to the south with J68HZ, 9Z4DZ, 8P6ET, and PV8DX.

I had heard of people working JA on 6 meters and saw one pass of JA9SJI and JA0RUG on June 21, 2018, but the “big one” finally happened on June 3, 2020. Over the course of one hour and 40 minutes, I got 316 total decodes from 46 unique JA calls plus HL3GOB. The opening cov-

ered a good bit of the U.S., so the competition was fierce, and I was struggling to be heard. I finally broke through by switching to 50.323 and working JA1JRK for my first 6m QSO with Asia.

June 9, 2020, brought three new Caribbean entities, J35X, HK6RF, and PJ2LS. On June 17, there was a huge multihop Es opening to Europe. Now armed with 5 elements, I was much more productive, working PA, GM, OZ, DL, LA, SV9, SM, and a real prize, OH0. HP2DFA rounded out the parade of new ones that day. The next day, I worked R6KA, and on June 24, EA6VQ. J73WA, 4U1UN, and EI4DQ rounded out a very productive June. I worked four more in July (GI, LY, OK, and OX), and a final late-season new one from D4VHF on August 15. I had gone from 29 to 59 in a year. Now 6m DXCC seemed like a real possibility.

2021 was another great year starting with CX6DRA on April 20, 9A5X on May 19, and frequent openings all throughout June and July, adding TK, P4, YS, CT3, 5T5, S5, GU, HB9, 4O, VP2V, I, YT, ISO, UR, ZB2, GW, FS, and PZ to the worked list. I was now at 78, so this should only take another year, maybe two at this pace, right?

Unfortunately – or fortunately, depending on your perspective – we were approaching solar maximum in 2022, and as any experienced 6m operator knows, there is a palpable decline in sporadic-E during high sunspot years. I had learned this lesson myself after some highly disappointing June VHF contests in 2013-14. I worked CE and OA during spring TEP in April 2022 and cashed in on one sporadic-E opening to Europe on June 8 with HA0DU but worked no other new ones that summer. I returned to the office full-time in September. However, I finally got in on one of the winter openings to VK/ZL on December 3, working ZL3RJ to complete Worked All Continents. My total at the end of 2022 was 82.

2023 began to show signs of F2 life, how-

## Journey to 6-Meter DXCC (continued)

ever – a highly memorable QSO with NH6Y on February 27 gave me state #49 and country #83. I happened to be working from home on that extremely windy day, and I made the QSO remoted into my desktop computer from my phone while I held onto the mast supporting my 6-meter antenna for dear life so the antenna wouldn't turn off of its heading (yes, it is one of those "permanent temporary" mounting arrangements)! There were other F2/TEP goodies in March: HC8 and VP8, then a May TEP QSO with ZP, a double-hop Es Q with V2 in June, and another with PJ5 in July. I made just three QSOs with Europe in the summer of 2023, none of them with needed countries. Of note was a brief but focused opening to Japan on July 9, resulting in seven QSOs over the course of 40 minutes, including three in quick succession in response to my CQs – quite the contrast with the first JA opening I experienced three years earlier.

More F2/TEP to the Pacific added FK, 3D2, and VK in October, and an F2 QSO with 7Q6M on November 10 rounded out the list of new ones worked in 2023. Now at 93 worked, I was knocking on the door.

2024 was one of the worst sporadic-E years in memory with very few openings. One attendee at my Huntsville Hamfest VHF forum said it was the worst year since the 1960s; it was evocative of 2013 – 11 years earlier – to me. I worked FY5KE for a new country during TEP season in early May for #94. This QSO was memorable for being the first new one I'd worked on a mode other than FT8 (CW) since 2017. 2024 was otherwise quiet – until it wasn't.

I'd heard stories of F2 openings to Europe on 6 meters, especially from hams in the north-eastern U.S., during solar maximum, but I had yet

to experience it myself. In late October, we had a stretch of solar flux indices and sunspot numbers both above 200. On November 1, I saw my first F2 signals from Europe. SP3CFM (#95) and GD0TEP (#96) became the first new ones worked via F2 on November 2 while I was operating remotely on my way back from the Tupelo Swap-meet. I found 6m F2 to Europe to be not unlike multi-hop sporadic-E in that there was lots of QSB and signals were generally weak, mostly running in the minus double digits dB SNR on FT8 – in other words, not the rock-crushing S9+ signals we see from EU on 10 meters during F2. Competition was fierce, and both of the new ones were worked on 50.323.

However, I was in for the surprise of a lifetime on November 3. Laura, K4CNY was at my station for the ARRL Phone Sweepstakes contest in which we were entering as low-power multi-op KT4XA. I was somehow tipped off on Sunday morning to a most incredible opening on 6m – folks in the southeastern U.S. were working India! I handed the HF mic off to Laura and made a mad dash to the 6m station, and sure enough, three VU3 stations from Kerala state were coming in consistently. One of them, VU3WEW, recognized the strength of the opening and wisely switched to multi-stream MSHV, allowing more folks to get in the log. I took no chances, and, for the first – and as yet, only – time ever, put my Elecraft KPA500 amplifier in line on 6 meters at 400 watts to make sure I didn't miss what might be a once-in-a-lifetime opportunity. After much calling, I worked Adi at 1535 UTC for #97. I yelled for Laura – who, in the meantime, had just worked our 85th and final section for a Clean Sweep – to try to work him with her call, which she did in two or three calls. VU was an all-time new one for her – and she worked it on 6 meters!

November 11 brought a solid F2 opening to Europe and beyond, netting two very nice new



## Journey to 6-Meter DXCC (continued)

ones, 9K2GS (#98) and 9H1TX (#99). After a two-week layoff, the F2 returned at the end of November, and OE5UAL gave me worked country #100. This was interesting because I had worked OE5OLL three years prior, but Ludwig apparently QSLs solely by eQSL according to his QRZ page, so I didn't "count" it then.

While I waited to get confirmations, 2025 started off with a bang with some mid-winter double-hop Es to 8R1TM, K6VHF/HR9, and J88BTI to bring my worked total to 103.

I drug my feet about applying for the DXCC award hoping I would get enough Logbook of The World confirmations to avoid having to make a paper application, but I ended up stuck at 99 on

LoTW, so I had Terry Sims, NN4R check four cards at the BirmingHAMfest; that application took about four weeks to process. Then, I applied for the remaining credits on LoTW and kept watching for the notification that the application had been processed when, suddenly, one day the certificate showed up in my mailbox! I didn't realize that Logbook of The World no longer sends you a message when an application has been processed, but it had been processed in about two weeks. My certificate is number 2,551, and I couldn't be prouder of it!

If you are working on 6-meter DXCC or are thinking about pursuing it, as long as you have 100 watts, 3-5 elements, and FT8, and you're willing to put in the seat time – remember Bruce, AC4G's mantra, "You must be present to win!" – you may soon have a 6m DXCC award hanging on your wall, too!

## My Field Day Mast by Mark Brown, N4BCD

This project started months ago at a HARC auction where I won a Rohn H50 Push-up mast on a \$30 bid. I was put off by the pricing of hinged mounts from outfits like Max-Gain, TN07, and oth-

ers so I purchased a hinged receiver from an online company. These are uncommon in stores but are popular for folks toting wheelchair ramps.

A trip to the local trailer store and I had a

8-1/4in (209mm)  
4-3/4in (119mm)  
16-1/4in (412mm)  
19-1/2in (495mm)

**KUAFU 2" Folding Hitch Adapter Compatible with 2 Inch Trailer Hitch Extension Shank Mount Cargo Wheelchair Carrier Adapter 500lbs Weight Capacity**

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| Material             | Alloy Steel   |
| Finish Type          | Powder Coated |
| Manufacturer         | Scarman LLC   |

steel plate & 2 1/2" ID tube welded onto the hinged part of the receiver. They even painted it.

As with any online purchase, specs are questionable but this receiver and others like them are rated at 500 lbs. That kind of limit on a loaded hitch bouncing down

N4BCD found a suitable starting point for his custom mount on Amazon.

## My Field Day Mast (continued)



**N4BCD's custom mount in the lowered position**

the road at highway speed is more than enough to hold a 44-pound mast.

Bending moment is another matter. An online calculator predicted about 960 foot-pounds of torque when trying to rotate this to vertical – clearly, I could not erect a fully extended mast.

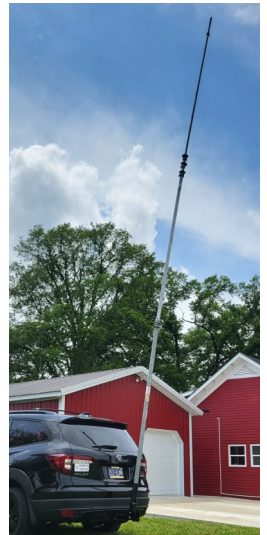
As a trial run, I did extend 3 sections and was able to lift it solo and pin the mast once it was vertical. I should say almost vertical. Receiver hitches (and the tube I use as a sleeve) have

gaps so they don't bind, so it leans a bit. It's not shown in the pictures, but this will be addressed using guy ropes.

Total height, including hitch above ground, is 28' 10". That should be adequate for holding a wire antenna for Lincoln County's Field Day at Stone Bridge Park – where trees are notably too far away from the pavilion.

**Above right: The mount with mast in the raised position**

**Right: Play in the mount will necessitate guying when used at Field Day**



## Dayton Hamvention 2025 Highlights by Bruce Smith, AC4G

My first trip to Dayton Hamvention was back in 2001, just after I returned from a working stint in the Marshall Islands having returned my family and I back to Taft, TN. My last trip to Dayton Hamvention since 2001 was back in 2018 when I rode to Dayton, OH with AG4W, K8KI, and N5DF, fellow NADXC members. The location of the Hamvention both times was the old HARA Arena that everybody knew was about ready to fall any time. A few years ago, mother nature finished off the arena and it was finally torn down for a much better place to host the Dayton Hamvention, which is now held in Zenia, OH.

This trip to Dayton Hamvention in Zenia, OH allowed me the pleasure to ride with Steve,

AG4W; Bob, K8KI; Michael, KF4BOG; and Fred, K3FRK. On the ride up, we had a great time discussing differing ham radio topics, including DX topics. Fred, K3FRK took the steering wheel first. About half-way up, I took over the driving to sail us into Zenia, OH around 4:00 P.M. directly to the AirBNB that we had rented for our stay. Picture 1 shows the room in the AirBNB where I stayed. At first, the temperature was rather cool, but later it got better.

After settling in on Thursday afternoon, we all had places to go. K8KI and K3FRK attended the ARRL Diamond Club Banquet at Wright Patterson AFB, while AG4W and I went to a restaurant for the QRP Group – “5 Days in May” only to find

## Dayton Hamvention 2025 Highlights (continued)

out that all of the activities had been cancelled, except dinner. The room was so full, we had to sit by ourselves in the main dining room. After we ate supper, we picked K8KI and K3FRK up at Wright Patterson AFB Museum. We got a chance



to go inside the museum and take a quick tour, while seeking to find K8KI and K3FRK. After finding Bob and Fred, Bob showed us an AC130 aircraft like

**Picture 1: AC4G's room in the AirBNB**



**Picture 2: AC4G (L) and K8KI (R) in the Wright Patterson Air Force museum**

**Picture 3: This AC-130A Spectre Gunship is one of the AC-130 versions flown by K8KI in combat over Vietnam.**



the one he piloted in Vietnam. See Pictures 2 and 3 inside the museum.

Friday morning, we began by making our typical journey to get breakfast on the way to the Hamvention. After eating breakfast, we made our journey to the Zenia Fairgrounds where we saw a large crowd beginning to form. Picture 4 shows the crowd waiting to get parked.

Thank goodness we all purchased our entrance tickets to the Hamvention prior to leaving home. The lines to purchase tickets were long. The lines to get into the area were a mile long, but that was because many were newcomers and lined up for no reason at all except to “follow the crowd”. We simply made a beeline to the front of the gate to prepare to walk in knowing the ‘ropes’ of the Hamvention. At 9:00 A.M. the gates opened, and we made a beeline to the flea market, looking for good deals. Throughout the day, I enjoyed carousing around the booths located in several buildings that were air conditioned. It was nice to see new equipment being offered by the manufacturers and putting a face to the callsigns I had seen on the FT8 screen or made a QSO with. My impression at the end of Day 1 was that everything in the flea market was priced very high. I found a few items for sale but never ended up buying anything due to the high prices. I figured Saturday might be a better day for deals. I was completely exhausted and walked 19,336 steps Friday.



**Picture 4: First sight of the Parking Lot at Zenia, OH Fairgrounds**



## Dayton Hamvention 2025 Highlights (continued)

At the end of the day Friday, we made our way to drop Bob off at the Flex Dinner, while the rest of us went to the DX Dinner. I felt it an honor to be among so many DXers. The DX Dinner was hosted by the Southwest Ohio DX Club. I met Bill, AJ8B (SWODXC President) who in the past had asked me if he could use some of my articles in his club's newsletter.

As I was standing amongst the crowd during the social hour, I heard a voice from in front of me call my name. It was Ken Claerbout, K4ZW, our NADXC Banquet speaker from two years ago. We chatted for a while when Nodir, EY8MM from Tajikistan joined us. I thanked Nodir for my 160m CW QSO and told him most of my DXCC band slots were QSOs with him. We talked for half an hour and it never dawned on me why he traveled so far, but he was one of the inductees to be inducted into the DX Hall of Fame that night. See Picture 5 of Nodir receiving this honor. I also met some other foreign DXers, before we had to go to dinner.

I also sat at a table with other DXers like me who wanted to listen to Hal Turley's Program and get a chance to win a prize. After dinner the



**Picture 5: NODIR, EY8MM (R) at DX Dinner  
Receiving Honor**

main program began. The main program began with Hal listing and explaining the DXers who made a significant impact on DXpeditions of yesterday. Later, Hal showed details of the most recent DXpedition to the Alaska Aleutian Islands, specifically, near Adak, AK for a new IOTA. Their callsign used was KL7RRC. I had made a couple of QSOs with them, so it was good to see the desolate island where the town had been completely closed due to base closures and see the details of their DXpedition at that location. Afterwards, the DX Dinner prizes were drawn. Unfortunately, I did not win a prize.

Being at a gathering such as this, one can meet DXers who have been around the world. Picture 6 shows James Gallo, KB2FMH who was on the Mediterranean DX Team with Steve, AG4W. James conducted a forum on his adventures to XT2MD, Burkina Faso on Saturday. He is also on the 3Y0K Bouvet team and is the Funding Manager. I was glad I was able to meet James on Friday night. He is from Brooklyn, NY and a pleasure to be around.



**Picture 6: James  
Gallo, KB2FMH of  
XT2MD Fame**

Saturday started off with our journey to get breakfast on the way to the Hamvention. At the Hamvention, I wanted to participate in as many forums as I could on Saturday, especially since Friday plum wore me out and my intention was to not walk as much as I had on Friday. I made my way to the building hosting all the DX forums. I listened to several forums, while afterwards, making my way to meet some of these adventurous DX'ers who travel to distant lands to thank them for working me. Below are a couple of pictures I



## Dayton Hamvention 2025 Highlights (continued)

took of Tennessee Contest Group (TCG) member, Ron, WV4P and DK6SP (German DXpeditioner) who I recently worked during his teams' Marshall Island DXpedition, V73WW. See Pictures 7 and 8.

Saturday night was an-



**Picture 7 (left): AC4G (L) and DK6SP (R)**

**Picture 8 (right): Ron, WV4P (L) and AC4G (R) -  
TCG Members**

other adventurous dinner as we attended the Contest Dinner at the Hope Hotel just off Wright Patterson AFB. All four of us (K8KI, K3FRK, AG4W, and AC4G) attended this dinner. K3LR of DX Engineering kicked off the event by introducing the Master of Ceremony, Mr. John Dorr, K1AR who always does a good job and injects some humor to make the event more enjoyable. After a few door prizes, dinner began.

The main program was by Chris, KL9A who did a marvelous job explaining his family ties to contesting and how he got into contesting at a young age. He currently resides in Montana and has a marvelous spouse who let him travel to support this hobby. He is currently in the process of building a mega-contest station. I recommend you find his program on YouTube and watch it. K3LR's choice of speaker could not have been better.

After the program, more door prizes were drawn and then the grand prize was drawn. Unfortunately, none of us from the NADXC won the grand prize, but Bob and Fred won a door prize. Unfortunately, I did not win a prize, but enjoyed the night out.

Sunday, we packed and left to get home Sunday afternoon. All in all, I am glad I had an opportunity to go back to the Hamvention and see the new location. I believe it is a better venue and offers more room. I am waiting to see if the crowd was larger than previous years. I found a speaker for our NADXC Banquet in August, so it was worth my time.

If you get a chance to go to the Dayton Hamvention in Zenia, OH, I recommend going just to experience the largest hamfest in the world. If you have difficulty walking or have mobility issues, the flea market walkway is graveled with large stones that can at times be troublesome. However, the main fairway is paved and offers food vendors and access to all the buildings without any issue. The number of hams in one location can be surreal.

### Upcoming NADXC Meeting

Tuesday, June 10, 2025

5:45 PM Doors open / 6:30 PM  
meeting

**Program:** "HC1MD/2 Ecuador and  
HD8MD Galapagos Activity" by Rick  
Dorsch, NE8Z

**Location:** Signals Museum of Infor-  
mation Explosion, 1806 University  
Drive NW, Huntsville, AL 35801 and  
via [Zoom](#)

## Tales From the Museum: How and When Did We Learn that Light is the Same as Radio Waves

by Bob DePierre, K8KI

The mid-1800s was a wonderful time of explosion in learning of the then-unknown beauty of electromagnetic waves. Michael Faraday was the center of it all for 40 years. Although uneducated, he became a tireless experimenter and note-taker. He integrated the work of others, such as Oersted, who had found that current in a wire would move a compass needle, in his search for the relationship between electric and magnetic fields. So what does light have to do with electricity and magnets?

Our story starts in the mid-1820s where Faraday had become a member of the Royal Society in London, giving regular lectures on what he had found. He now knew what dc current in a wire would do to a compass, but over time he started to notice that time-varying currents would do more, and that moving an iron rod through a magnet also provided interesting results. Varying electric fields did things very similar to magnetic fields, and they related in such similar ways. And finally, it appeared that you couldn't have one without the other. Not understanding math beyond algebra, he didn't realize he was looking at differential equations. By the mid-1840s, he was seeing results hinting that light was involved in the mystery.

The story broadens when William Thompson (later Lord Kelvin) approaches him and asks if he had ever looked at the polarization of light with magnets or electricity when the light was going through a transparent material. Faraday had been experimenting with light, but this idea was new in many ways.

In 1815, Brewster found an unusual char-

acteristic of polarization. When unpolarized light is incident at this angle, the light that is reflected from the surface becomes polarized. This is why polarizing sunglasses work so well. They block the horizontally polarized light, which is the light reflected at low angles (glare). When light goes from air into a transparent material, the light slows and bends. Iceland crystals are unusual because the amount the light bent depends on the polarization of the light. Therefore when white light enters the crystal it bends the light into two beams: one that vibrates vertically and one that vibrates horizontally. As humans can't distinguish polarization with their naked eyes, the crystal makes two images.

In 1828, a Scotsman named Nicol found the next piece of the puzzle. He wanted to use Iceland crystals to remove one polarization entirely – making the first polarizing filter (prism). He cut an Iceland crystal into an angled rectangle, then cut that into two triangles, then glued the triangles back together. Like all Iceland crystals, when light hits this prism, the light splits into horizontal and vertically polarized light. However, the horizontally polarized light is bent more. The triangles and glue are designed in such a way that when this light hits the glue all of the horizontally polarized light is reflected. This is called total internal reflection and shines out the side. The vertically polarized light, however, bends less so that it bends through the glue and thus passes safely through the prism.

So Faraday shined light from the brightest one he could get, at Brewster's angle, off a piece of glass – getting horizontally polarized light. He then put a Nicol prism in the path of the light so that it filtered out the horizontally polarized light,

## Tales From the Museum: How and When Did We Learn that Light is the Same as Radio Waves (continued)

and he could no longer see the light from the lamp. He then placed a strong electromagnet next to the path of the light. When he ran current through the electromagnet he could see the light from the lamp. The magnetic field had rotated the polarization of the light. When he unplugged the electromagnet, the image disappeared again. Faraday wrote that he had established, for the first time, a true direct relation and dependence between light and the magnetic and electric forces.

There had been a number of philosophical arguments over time regarding the speed of light, but nothing could be scientifically measured. In 1728 James Bradley did calculate the speed of light to be 297,000 km/sec, based on planetary observations. Through various other observations, Fizeau measured it in 1849, while Foucault found similar results in 1862.

In 1846, at an impromptu lecture, Faraday spoke of one of his dreams: that light was electromagnetic radiation. This was hard to believe, even for him, but the polarization experiments, along with other measurements, made the connection unmistakable. Some years later, near the end of his career, he met James Clerk Maxwell, who did understand mathematics.

Faraday and Maxwell met in 1860, just as Maxwell had moved to King's College in London. Despite a 40 year difference in their ages, they were able to make truly noteworthy advances in electromagnetism. Faraday was able to communicate a fairly complete theory to Maxwell, but now the really serious business of the mathematics had to begin. Maxwell quickly understood how calculus was involved, but it went far deeper: this

was 3-dimensional calculus (which wasn't invented until after Maxwell's death), and the "equal signs" in the equations had to include two constants in nature, and in a vacuum (permeability  $\mu_0$ , and permittivity  $\epsilon_0$ ). Permeability was a derived constant, while permittivity had to be measured.

Further, those two constants had to have dimensions. Luckily, their values and dimensions had already been worked out by others by that time. Those are  $\mu_0 = 4\pi \times 10^{-7}$  weber/(amp-m) and  $\epsilon_0 = 8.8542 \times 10^{-12}$  coul<sup>2</sup>/(newton-m<sup>2</sup>). Can you imagine their amazement when they realized that

$$\frac{1}{\sqrt{\mu_0 \epsilon_0}}$$

was a velocity and that its value was identical to what others had found to be the speed of light! As I've heard many times myself, I'll leave it to the reader to show that the dimensions of this equation are in meters/second.

Maxwell published his famous electromagnetic equations in 1865. At that time, it took 20 equations to do it properly. The 3-dimensional version, which we use today, was worked out 20 years later by Oliver Heaviside (who never completed high school). Those included the curl ( $\nabla \times$ ) and the divergence ( $\nabla \cdot$ ). Faraday's Law is now stated as:

$$\nabla \times E = -\frac{\partial B}{\partial t}$$

while Ampere's Law is:

$$\nabla \times B = \mu_0 j + \mu_0 \epsilon_0 \frac{\partial E}{\partial t}$$

These laws inescapably tie electromagnetic waves to light.

But further proof was needed to show that man could experimentally manufacture such waves. In 1879, Helmholtz proposed a prize to the first man who could do such a thing. It was Heinrich Hertz who did it, in 1888. He did a lot more before his sudden death in 1894. But even he never realized the tiger he was holding by the tail.



## Upcoming DX Contests

by Chuck Lewis, N4NM

### ARRL International Digital Contest, (DIG – NO RTTY), 80, 40, 10 Meters



June 7, 1800Z to June 8, 2359Z

Exchange: 4-char grid

See page 83, June QST and [www.arrl.org/arri-digital-contest](http://www.arrl.org/arri-digital-contest)

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



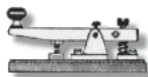
June 14, 0000Z to June 14, 2359

Exchange RS, “ORARI” or “DX”

See page 83, June QST and <https://www.oraricontest.id/>



Grupo Argentino de CW



### GACW WWSA CW DX Contest, (CW), 80-10 meters

June 14, 1500Z to June 15, 1500Z

Exchange: RST, CQ zone

See page 83, June QST and [https://gacw.ar/wp-content/uploads/2024/02/WWSA\\_Reglas\\_Ingles.pdf](https://gacw.ar/wp-content/uploads/2024/02/WWSA_Reglas_Ingles.pdf)

### Asia-Pacific Sprint, (SSB), 20-15 meters



June 14, 1500Z to June 14, 1300Z

Exchange: RS, Serial #

See page 83, June QST and [www.jsfc.org/apsprint/aprule.txt](http://www.jsfc.org/apsprint/aprule.txt)

### Portugal Day Contest, (SSB/CW), 80-10 meters



June 14, 1200Z to June 15, 1200Z

Exchange: RS(T) and Serial # or CT district code

See page 83, June QST, and <https://portugaldaycontest.rep.pt/rules.php>

### Pajajoran Bogor DX Contest, (SSB), 80 – 10 meters



June 21, 0000Z to June 15, 2359Z

Exchange: RS, Serial #

See [www.pb-dx-contest.id](http://www.pb-dx-contest.id)

### All Asian DX Contest (CW), 160-10M



June 21, 0000Z to June 22, 2359Z

Exchange: RST plus 2-digit age

See page 83, June QST and [www.jarl.org/English](http://www.jarl.org/English)



Six Meter International Radio Klub

### SMIRK Contest, (SSB/CW), 6 meters

June 21 0000Z to June 22, 2359Z

Exchange: 4-Char. grid square, member number (optional)

See page 83, June QST and [www.smirk.info](http://www.smirk.info)

### LZ International 6-meter Contest, (CW/SSB), 6 meters



June 21, 1400Z to June 22, 1400Z

Exchange: RS(T), Serial #, 6-Char grid

See Page 83, June QST and [www.radioclub-troyan.bg](http://www.radioclub-troyan.bg)

### Stew Perry Topband Challenge (CW), 160 meters



June 21, 1500Z to June 22, 1500Z

Exchange: 4-character grid square

See page 83, June QST and <http://www.kkn.net/stew/>

### IARU Region 1 50 MHz Contest, (SSB/CW), 6M



June 21, 1400Z to June 22, 1400Z

Exchange: RS(T) plus Serial # plus 6-character grid square

See: page 83, June QST and [www.IARU-r1.org](http://www.IARU-r1.org)

### IARU HF World Championships (SSB/CW), 160-10M



July 12, 1200Z to July 13 1200Z

Exchange: RS(T) plus ITU zone; IARU HQ stns send HQ abbrev.

See <http://www.arrl.org/iaru-hf-world-championship>

## Upcoming DX Contests

(continued)

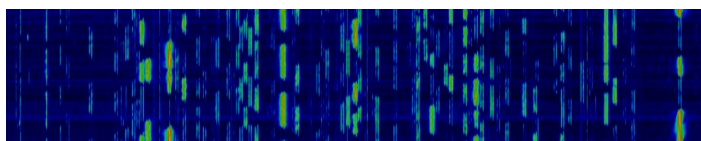
### OTHERS:

WAB 50 MHz, Phone Contest, 0800Z to 1400Z  
June 22

His Maj. King of Spain Contest, SSB, 1200Z, Jun  
28 to 1200Z, Jun 29

Marconi Memorial HF Contest, 1400Z, July 5 to  
1400 July 6

Dates & times often change or are misprinted in the journals; beware. See also: <http://www.contestcalendar.com/contestcal.html>



## About the NADXC

### 2025 NADXC Officers and Directors

|                |                     |
|----------------|---------------------|
| President      | Bruce Smith, AC4G   |
| Vice President | Fred Kepner, K3FRK  |
| Sec./Treasurer | Bob De Pierre, K8KI |
| Directors      | Chuck Lewis, N4NM   |
|                | Mick Bell, N8AU     |

### How to Join

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

### Monthly Meetings

Meetings are held at the Museum of Information Explosion at 6:30pm on the 2nd Tuesday of each month. Participants can also join the meeting virtually via [Zoom](https://zoom.us).

This edition of The LongPath published by  
Fred Kepner, K3FRK

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## 2025 Banquet Tickets Available

Featured Presentation: "XT2MD DXpedition to Burkina Faso and the 2026 Bouvet Island DXpedition" by James Gallo, KB2FMH

Grand Prize: Yaesu FT-710 AESS HF/50MHz 100W SDR donated by Yaesu and GigaParts.

Banquet tickets and more information are now available on the [club website](http://clubwebsite.com).



\*Display is not included. The image is shown with an optional third party external display.



## DXpeditions in June 2025

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|               |               |                      |        |                  |                                                                                                                                                                      |
|---------------|---------------|----------------------|--------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2025<br>May27 | 2025<br>Jun09 | American Samoa       | KH8    | LoTW             | By K0NR as KH8/K0NR and K0JJW as KH8/K0JJW; 20-10m; SSB FT8 FT4; 10w; wires; SOTA activity                                                                           |
| 2025<br>May28 | 2025<br>Jun09 | Cyprus SBA           | ZC4GW  | M0URX<br>OQRS    | By MW0BRO; HF, perhaps 60m; holiday style operation                                                                                                                  |
| 2025<br>May31 | 2025<br>Jun07 | Market Reef          | OJ0L   | LoTW             | By IZ0EWJ; HF + 6m; SSB + digital; QSL via Club Log OQRS or I8KHC                                                                                                    |
| 2025<br>Jun01 | 2025<br>Jun10 | Faroe Is             | OY     | LoTW             | By WB2REM W9MK W2WCM G6TFL VO1IDX K3BAB K4LT W4VKU as OY6FRA OY6A OY/W9MK OY/K4LT; 160-6m; CW SSB FT8 FT4; QRV for ARRL VHF Contest; QSL via Club Log OQRS or WB2REM |
| 2025<br>Jun04 | 2025<br>Jun11 | Madagascar           | 5R8RD  | Club Log<br>OQRS | By IK1TTD fm Tsarabanjina I (IOTA AF-057); 40-10m, mainly 20m; holiday style operation; QSL via IK1TTD direct                                                        |
| 2025<br>Jun04 | 2025<br>Jun18 | St Martin            | FS     | LoTW             | By K9EL as FS/K9EL; 40-6m; holiday style operation; QSL via Club Log OQRS                                                                                            |
| 2025<br>Jun06 | 2025<br>Jun13 | Jersey               | MJ     | M0URX            | By ON4ANN + ON team as MJ/OP2D; HF; SSB CW FT8                                                                                                                       |
| 2025<br>Jun07 | 2025<br>Jun08 | Jersey               | MJ     | ON6QR            | By ON6QR as MJ/ON6QR; 160 80 40 20 15 10m; CW; 5w; QRV for CW Field Day, Region 1 Contest                                                                            |
| 2025<br>Jun07 | 2025<br>Jun09 | Spain                | EA5    | LoTW             | By DL8JJ as EA5/DL8JJ fm Penyet del Moro (IOTA EU-151) (Rare); 40-10m; mainly CW, some SSB; QSL via DL8JJ (B/d)                                                      |
| 2025<br>Jun10 | 2025<br>Jun17 | Bermuda              | VP9    | LoTW             | By WA4PGM as VP9/WA4PGM fm IOTA NA-005; mainly CW; QSL via WA4PGM direct                                                                                             |
| 2025<br>Jun10 | 2025<br>Jun26 | French Polynesia     | FO     | M0OXO<br>OQRS    | By G0VJG as FO/G0VJG fm Bora Bora I (IOTA OC-067); 80-10m. perhaps 60m and 6m; CW SSB + digital                                                                      |
| 2025<br>Jun11 | 2025<br>Jun27 | French Polynesia     | FO     | LoTW             | By G0VJG as FO/G0VJG fm Bora Bora I (IOTA OC-067); HF + 6m                                                                                                           |
| 2025<br>Jun11 | 2025<br>Jun28 | Vanuatu              | YJ0RS  | LoTW             | By ZL1RS; 6m, perhaps 10m; FT8 EME; QSL via ZL1RS                                                                                                                    |
| 2025<br>Jun14 | 2025<br>Jun20 | Cyprus SBA           | ZC4TH  | DK6SP            | By G4WXJ fm KM64ux; 40-6m; CW SSB FT8 FT4; 100w; dipoles, EFHW                                                                                                       |
| 2025<br>Jun15 | 2025<br>Jun21 | Ogasawara            | JD1BQP | JP1IHD<br>Direct | By JP1IHD fm Chichijima I (IOTA AS-031 QL17cb); mainly 6m; SSB FT8 FT40                                                                                              |
| 2025<br>Jun18 | 2025<br>Jul09 | Guatemala            | TG     | LoTW             | By AF4CZ as TG9/AF4CZ; 40-10m;; FT8 FT4, perhaps SSB; spare time operation                                                                                           |
| 2025<br>Jun19 | 2025<br>Jun23 | Palau                | T88PB  | LoTW             | By JA0JHQ fm Koror I (IOTA OC-009, PJ77fi); HF; QRV for All Asia DX CW Contest; QSL via JA0JHQ direct                                                                |
| 2025<br>Jun25 | 2025<br>Jul31 | Morocco              | CN2DX  | F5LRL            | By F5LRL fm nr Kenitra; 40-6m; CW SSB FT8; to continue until Aug 30                                                                                                  |
| 2025<br>Jun28 | 2025<br>Jul14 | St Pierre & Miquelon | FP     | LoTW             | By KV1J as FP/KV1J fm Miquelon I; HF + 6m; mainly SSB FT4 FT8, some CW; QSL via KV1J (B/d) or Club Log OQRS                                                          |
| 2025<br>Jun30 | 2025<br>Jul05 | Dodecanese Is        | SV5    | LoTW             | By S55DX as SV5/S55DX fm Kos I (IOTA EU-001); HF; QSL via S55DX (B/d)                                                                                                |



## Club Business and Announcements

### May 2025 Financial Report

by Bob DePierre, K8KI

Our financial picture is shaping up much the way I feared it would. We've suffered through a lot of Silent Keys this year...and I've never been this old before. More of us are donating our ham shack equipment to charities (we're not exactly 501(c)(3)). I remember getting booed back in January for proposing a budget showing a loss of \$251 (see bottom of budget sheet). Since then, thanks almost entirely to Al Watson/W4ABW, we're almost \$4,700 ahead of where we would have been. Now, we have a lot of bills to pay over the next 3 months (i.e., the banquet), so I'm very hesitant about any more purchases until then. I do remember, back about 7 years ago, where everyone was eager over the next Bouvet DXpedition, and someone proposed sending them over \$2K. The vote passed, we sent the money, and the DXpedition failed. That money came from the N4KG estate. Lesson learned; we go by BOD recommendations now. My recommendation here is to wait until October until we make any more expenditure decisions.

| Budget Category               | 2025 Budget        | Year to Date       | End May            |        |
|-------------------------------|--------------------|--------------------|--------------------|--------|
| <b>Year Start</b>             | <b>5803</b>        | <b>5803.41</b>     | <b>\$9,288.13</b>  |        |
| <b>Dues In</b>                | <b>1100</b>        | <b>992.54</b>      | <b>\$60.00</b>     |        |
| <b>Recurring Exp</b>          | <b>-1106</b>       |                    |                    |        |
| repeater elect                | -63                | -116               |                    |        |
| web hosting/domain service    | -77                | -16.88             |                    |        |
| repeater maintenance          | 0                  |                    |                    |        |
| to HARC for Zoom              | -50                | -50                |                    |        |
| use of museum                 | -400               | -400               |                    |        |
| DX Plaques                    | -216               |                    |                    |        |
| Miscellaneous                 | -300               |                    |                    |        |
| <b>Other Transactions</b>     | <b>-1200</b>       |                    |                    |        |
| Donations/equipment to sell   | 0                  | 4080               | \$380.00           |        |
| Dxpeditons                    | -1000              | -400               | -\$200.00          |        |
| Picnic                        | -200               |                    |                    |        |
| ARRL Bricks                   | 0                  |                    |                    |        |
| <b>DX Banquet</b>             | <b>730</b>         |                    |                    |        |
| Huntsville Hamfest Donation   | 500                |                    |                    |        |
| venue                         | -700               | -700               |                    |        |
| food                          | -2400              |                    |                    |        |
| speaker+room+travel           | -450               |                    |                    |        |
| ticket sales                  | 4100               | 735.93             | \$430.87           | 10 tix |
| raffle                        | 400                | 87.9               | \$57.90            |        |
| grand prize                   | -400               |                    |                    |        |
| beer/wine/soft drinks/glasses | -200               |                    |                    |        |
| insurance                     | -120               |                    |                    |        |
| <b>Year End Bank Balance</b>  | <b>\$5,327.00</b>  | <b>\$10,016.90</b> | <b>\$10,016.90</b> |        |
| <b>Other Asset 3-month CD</b> | <b>\$5,225.00</b>  | <b>\$5,055.07</b>  | <b>\$5,055.07</b>  |        |
| <b>Total Assets</b>           | <b>\$10,552.00</b> | <b>\$15,071.97</b> | <b>\$15,071.97</b> |        |
| Asset delta                   | -\$251.00          | \$4,268.97         |                    |        |

Have you visited the NADXC website lately? The site has information on upcoming meeting programs, the DX banquet, a club roster, current club DX standings, 13 years of past LongPath issues, and more.

<https://www.nadxc.org>

## May 2025 Meeting Minutes

### by Bob DePierre, K8KI

- Bruce/AC4G started the meeting promptly at 6:30. There were 18 members present plus 5 on Zoom.
- Bruce mentioned the passing of Bart Fay/W4NS on April 30. He had been a very active member and DXer many years ago. We also lost Ted Randall/WB8PUM, who had hosted the QSO Radio Show for many years, and was often heard at the Huntsville Hamfest. His obituary said "Fittingly he was 73 years of age."
- Bruce asked to check the number of paid members. I'm not aware of any errors, but they do creep up. Our results may be in the computer, but only because we have manually entered the data. Fred has updated the on-line roster. I count 47 paid. Please check it to be sure we have accounted for you. I must admit we still do have a few old-time members who haven't remembered.
- ZS8W is active from Marion Island. He is only operating ft8, and his schedule is impacted by his work schedule. The pileups are huge. A free beer to any local op who works him QRP.
- The April minutes and budget were approved.
- The board of directors met last week and recommended we support the PJ6Y/YOTA effort at \$200. The membership approved. The 3C2MD DXpedition to Equatorial Guinea was approved for \$600 (Steve/AG4W will travel to this one). We had already supported the VK9 DXpedition to Christmas/Cocos Keeling for \$200. Next will be VU4X/Andaman and then Bouvet next winter. Our budget this year was \$1,000.
- DX Banquet: The grand prize will be a Yaesu FT-710AESS. It has arrived at Gigaparts and will cost us \$523.15. I'll pay the bill and pick it up.

The speaker will be James Gallo/KB2FMH from the XT2 DXpedition. His arrangements are all set. Banquet tickets are now on sale – we have sold 17 so far – and going for 100. Get yours now. Unfortunately, only a third of the banquet guests have been NADXC members/families. I understand we are contacting vendors for additional prizes.

- Bruce is looking to extend our historic Long Path archives. If you know where some may be hidden, please let us know.
- Fred introduced our guest speaker, Don Greenbaum/N1DG on Zoom. Don was part of the Jarvis Island/N5J DXpedition last year. They worked super-fox for the first time ever, and handled most of the operating from the water, while the station was on the beach.



## Mark your calendars!

Huntsville Hamfest will be August 16th and 17th.

The NADXC banquet will be Saturday evening, August 16th. Banquet tickets are now on sale on the [NADXC website!](#)

# North Alabama DX Club (NADXC)

## “Club Fact Sheet”

**Who We Are:** NADXC is a group of active radio amateurs with a deep compassion for working DX, contesting, and other aspects of Amateur Radio. We welcome everyone who is interested in joining our club. NADXC members are active in all facets of DX and contesting. The NADXC also donates funding for various DXpeditions all over the world. The NADXC sponsors a DX Banquet in mid-August of every year in conjunction with the Huntsville Hamfest in Huntsville, Alabama. NADXC members moderate various programs at club meetings and during the Huntsville Hamfest, covering amateur radio technical and operating topics for all to learn and enjoy. The NADXC sponsors a prestigious award at the end of year for the most deserving DXer of the Year from the NADXC club.

**DX Funding Policy:** The policy supports major DXpeditions that meet our requirements for financial sponsorship. Details are available on the NADXC website and in the “LongPath” newsletter.

**Club History:** The NADXC was organized in December 1966 by a group of 12 charter members. The original constitution was adopted and signed on December 19, 1966. The first chairman was Dan Whitsett, W4BRE (SK). In the early-1970's, the NADXC was custodian of the W4, K4 QSL Bureau which became such a huge undertaking that it eventually was passed to other larger clubs. In January of 1977, the club bought a VHF repeater for sharing DX spots and hosting a weekly net on Wednesday nights. The repeater was located on Redstone Arsenal, Weeden Mountain using the frequencies of 147.91/147.31 MHz on two meters. Today, the repeater has been relocated and utilizes the frequencies of 147.90/147.30 MHz, with a callsign of W4QB. The weekly net has been discontinued. In 1980, the club started the monthly newsletter known as the “LongPath” which currently continues to be produced every month.

While organized as a DX club, NADXC members are active in all aspects of the hobby. We trust that this information will be of interest to all and hope all hams have a long and pleasant association with the NADXC.

**Requirements for Membership:** The NADXC welcomes all hams radio operators who have an interest in DXing. It does not matter whether you are a new ham, a seasoned ham operator, an old-timer to DXing, or a ham who has just been hit with the DX bug; everyone is welcome! See the club website: [www.nadxc.org](http://www.nadxc.org). Dues are paid in January of every year.

**Meetings:** The NADXC club meets the second Tuesday night of every month, with the current location at the Signals Museum of Information Explosion (MIE) located at 1806 University Drive, Huntsville, Alabama and virtually via Zoom. Some members gather early to eat their dinner, socialize, discuss DX worked, and then we have a short business meeting starting at 6:30 P.M. CT. followed by an exciting, interesting program to help, entertain, and teach members about DX and amateur radio in general.

**Club Officers:** There are four elected officers (President, Vice-President, Secretary, and Treasurer) and three elected directors on the NADXC Board of Directors. The current roster of club officers and directors can be seen on the NADXC web site or in the “Longpath” newsletter, which is uploaded each month to the club website.

**Website:** The NADXC club maintains a website at [www.nadxc.org](http://www.nadxc.org). This site provides club information and activities throughout the year about a variety of subjects related to the club, DX, and amateur radio.