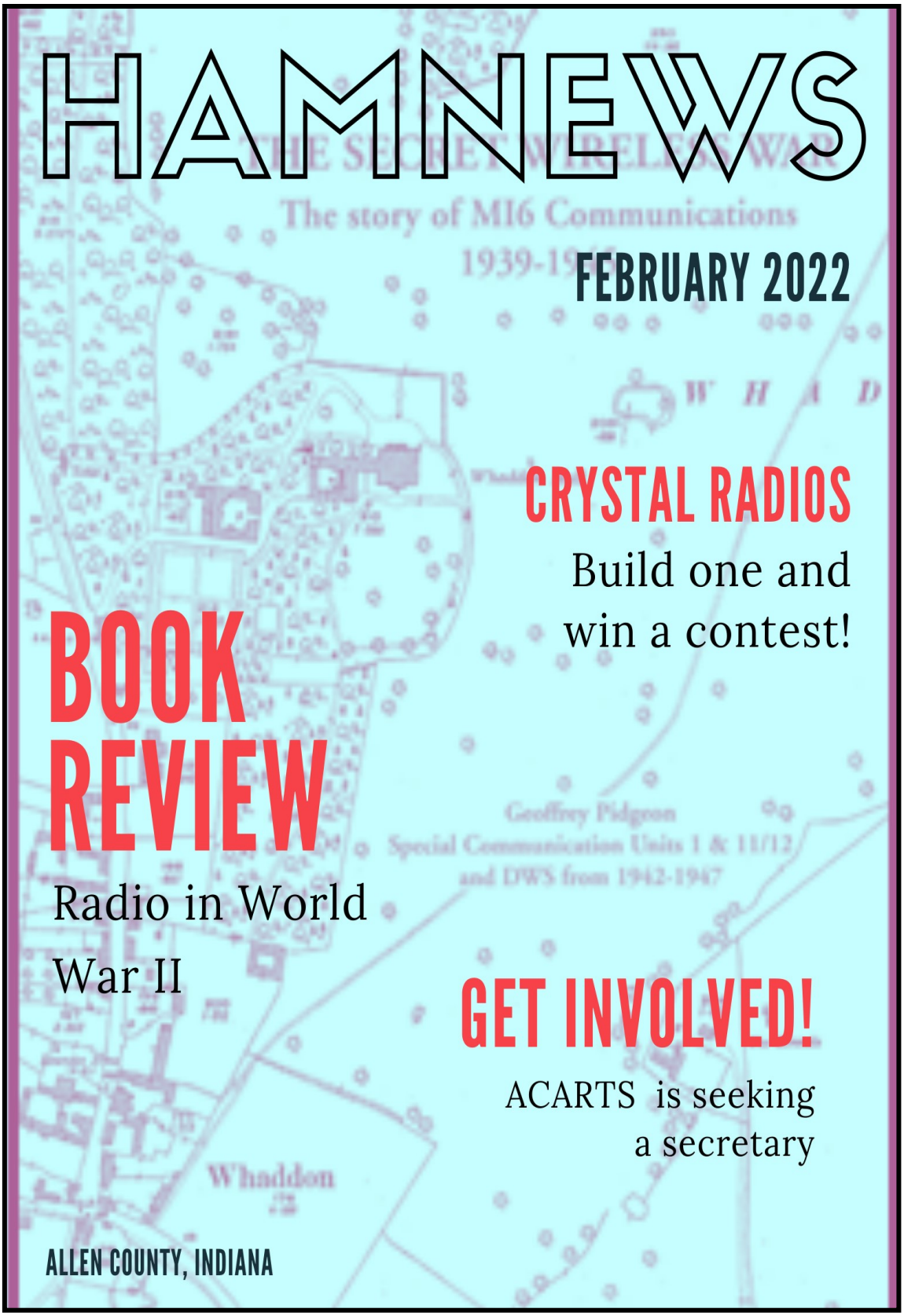
Allen County HamNews
Fort Wayne Radio Club Fort Wayne DX Association Allen County Amateur Radio Technical Society

February 2022
Volume 23
Issue 2

In this edition:



FROM THE EDITOR

de W9HT

Baby, it's cold outside! While that statement is par for February, at least we are getting closer to spring.

Book Review

Hopefully Santa brought you all kinds of radio goodies. Read about Steve, W9SAN's book review about a radio book that he got for Christmas.

Cycle 25

Speaking of weather, how about space weather and DX? Where are the sunspots? How is the new cycle looking? Check out K9LA's column for the latest forecast.

Hamcation

If you want to escape the winter weather for a weekend, head down to Orlando for the 2022 Hamcation event over the weekend of February 11-13. More information is available at: www.hamcation.com.

Get Involved at ACARTS

ACARTS is seeking a secretary for its board. Please see Chris, W9TSB's column for more information.

Straight Key Month: SK!

I was able to spend a few hours throughout the month operating as a SKCC K3Y/9 special event station, along with helping out with the K3Y/8 station up in Michigan this past weekend. Check out N8KR's columns that highlight how W9TE and other local stations did in this event in January.

Nasty Winter Weather

Wind, snow, ice, freezing rain, or sleet—stay safe and stay tuned to the National Weather Service, local news sources, and local repeaters for information.

73,

Josh, W9HT

February

Allen County HamNews

HamNews is a monthly publication of the Fort Wayne Radio Club, the Allen County Amateur Radio Technical Society, and the Fort Wayne DX Association.

Articles are written by members and friends of the three clubs. New submissions for HamNews are always welcome. Please send your information to the editor within two days of the end of the month for inclusion in the next edition.

HAMNEWS EDITOR

JOSH LONG, W9HT

DRJOSHLONG (AT) GMAIL.COM

50th FORT WAYNE HAMFEST

Host to the

2022 ARRL CENTRAL DIVISION CONVENTION

ARRL Forum - Saturday 10:00 AM

Carl Luetzelschwab K9LA
ARRL Central Division Director

Brent Walls N9BA
ARRL Central Division Vice – Director

James Merry Jr. KC9RPX
ARRL Indiana Section Manager

Jim Moehring KB9WWM
ARRL Indiana Section Emergency Coordinator

November 19 & 20 2022

SAT 9 AM to 4 PM
SUN 9 AM to 2 PM

Admission: $8 Sat & Sun
$4 Sun only
Children under 12 free
(with adult)

Ham Radio License Testing All Classes ($14)
9 AM till 12 PM Saturday

WAS & DXCC Card Checking and CQ Awards

Youth Lounge (under 12 accompanied by adult)

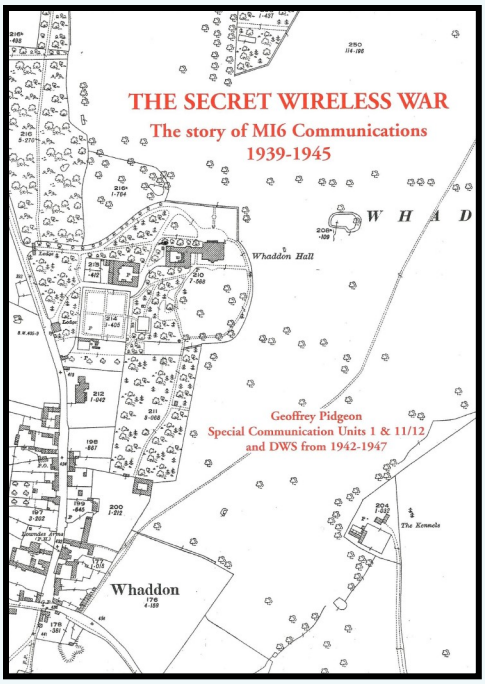
New & Used Ham Equipment Dealers
Main & Hourly Door Prizes
2 Rooms of Special Interest Forums All Day Saturday

Talk-in Radio Frequency 146.880 (-)

Tables: $30 Regular, $50 Premium, $33 Electricity
Drive Directly to Your Table for Setup

Allen County War Memorial Coliseum
4000 Parnell Ave
Fort Wayne, IN
73,000 sq. ft. all indoors
(Coliseum Parking $8 per vehicle)

Get the latest information at
www.fortwaynehamfest.com
www.facebook.com/FTWAYNEHAMFEST/
Contact (260) 579-2196 , PO Box 10342, Fort Wayne, IN 46851



HAM RADIO BOOK REVIEW: THE SECRET WIRELESS WAR by Geoffrey Pidgeon

Reviewed by Steve Nardin, W9SAN

Among the several “ham toys” I got for Christmas this past year were several books. One of these is an interesting (and large) book about British efforts during World War II called “The Secret Wireless War” and subtitled The Story Of MI6 Communications 1939-1945. Written by one of the engineers who worked for MI6, it is a compilation of the many different units that supported the British Secret Service called MI6 that were charged with maintaining communication ability within the British Empire and with the Allies, but to a large degree with intercepting Axis, mostly German, communication and working to use this info for the Allies’ advantage.

Of primary interest to us hams is the role that our UK counterparts played in the war effort. When war broke out, British hams were forced off the air and indeed were required to turn in their transmitters! But the brits had a cool way of encouraging on-the-air hams to work at the Whaddon Hill receiving site. When war broke out, the two best receivers that they could find were the National HRO and the RCA AR88. The HRO cost almost a year’s wages for the typical UK ham, but the promise was that the operator could have the radio when the war was over for about 2% of the cost! Hams also got to join in from home if they wanted by becoming a “VI” or Volunteer Interceptor. Several thousand joined in and although they couldn’t transmit, all were eager to assist in the fight against the Nazis.

Radios weren’t the only American hardware desired by the brits. One of the tasks assigned to MI6 Section VIII was to build up specialized communications vans for providing reception intelligence on the go. MI6 literally bought up the entire inventory of Packard sedans on the British Isles and converted them into rolling stations. The second most popular vehicle was the Dodge standard ambulance. Hundreds were converted in rolling radio shacks as well. The section had many aircraft to convert for intelligence work as well.

The book also covers all the receivers and transmitters that this section built for use either by diplomatic corps or actual spies that were sent behind enemy lines. Most of these radios were battery powered, but some high-powered units actually had an Onan generator that had to be taken as well. Lower power FM radios for communicating from spies and resistance fighters to parachute drop airplanes were designed and built-in house for use in the war.

Stories about behind enemy lines operations are included, as well as stories from their German counterparts who manned the Enigma machines. Most of the communications were via CW in international Morse Code. Listeners had to be trained to receive a solid copy at 25 WPM or faster while typing on a mechanical typewriter. These operators got so good that they could recognize the “fist” of individual German operators, even to the point of recognizing people when they shifted frequency or location. This proved to be valuable information when the codes were finally broken, and they could associate operators with specific military operations underway. Many of the receiving personnel were YL’s by the way, and quickly proved themselves as valuable assets.

One aspect of the war effort via radio waves was so-called “Black Propaganda” stations. The concept here is simple; transmit pro-German programming with very carefully constructed stories that actually undermined German morale. In order to overcome any German jamming of these signals, the British went to the US and purchased some high power (up to 500 Kilowatts!) of AM radio transmitters. These stations beamed their signals to German cities. Some spies also provided details on internal German operations and even football matches played in occupied territory. Amazingly, these stations were the first to inform the German population about the D-Day landings!

The book is written in a casual style and there are ample photographs of people, places, and the equipment. There are no schematics or even block diagrams of the radio gear so it does not do a deep dive into the technology of the day, but all in all it was an entertaining book to read. Now I want to find more about the Bletchly Park operation where the raw data from the interceptors was assembled and all the Enigma codes were broken.

Hamsplatter
Fort Wayne Radio Club P.O. Box15127, Fort Wayne, IN

FROM THE FWRC PRESIDENT: CAROLE'S CORNER

Snow is on the ground and spring is coming, they say. It can't come fast enough for me! The FWRC is back in the Good Shepherd United Methodist Church for our meetings, and it feels good. We conducted an Open Mic exercise at the January meeting where everyone took a turn discussing what got them into the hobby, what aspects of the hobby especially appeal to them, and so forth. It turned out well. It was fun to learn ham radio aspects of club members we assumed we knew.

On February 6th we are starting Fox Hunts again. So far, we have 2 teams hunting. I hope we have a few more; with our new scoring system it should be more equitable. I hope all our teams from last year participate and some new ones, after all, we currently have 133 members. We are always ready to help new hunters.

Our speaker for February will be Karl Luetzelschwab, K9LA, ARRL Central Division Director. His subject will either be EMI or the history of ARRL. Either will be informative. Mark your calendars for February 21, 7:00pm. XYLs and guests are welcome and encouraged to attend.

73 & 88,

Carole, WB9RUS

FWRC Activities for 2022

Foxhunts	Board Meetings	Club Meetings
--	1/11/2022	1/21/2022
2/6/2022	2/8/2022	2/18/2022
3/6/2022	3/8/2022	3/18/2022
4/3/2022	3/29/2022	4/8/2022
5/1/2022	5/3/2022	5/13/2022
6/12/2022	6/7/2022	6/17/2022
7/10/2022	7/5/2022	7/15/2022
8/7/2022	8/9/2022	8/19/2022
9/18/2022	9/6/2022	9/16/2022
10/2/2022	10/11/2022	10/21/2022
11/6/2022	11/8/2022	11/18/2022
--	11/29/2022	12/9/2022

FWRC Officers 2022

President
Carole Burke, WB9RUS
(260) 637-1989
Wb9rus(at)comcast.net

Vice President
Paul Prestia, KA3OPZ
(260) 485-9632
Phixer(at)gmail.com

Secretary
Al Burke, WB9SSE
(260) 637-1989
Aburke55(at)comcast.net

Treasurer
Bob Streeter, W8ST

Communications Manager
Charles Ward, KC9MUT
(260) 749-4824
Kc9mut(at)yahoo.com

Directors
Steve Nardin, W9SAN
(260) 482-4039
W9san(at)arrl.net

Clarke Derbyshire, KG9FM
(260) 485-6255
Cderbyshire(at)
comcast.net

Terry Bowman, K9FMX

Larry Temenoff, KB9OS

Newsletter Editor
Josh Long, W9HT

FORT WAYNE RADIO CLUB MEETING MINUTES

21 January 2022

The January meeting of the Ft. Wayne Radio Club was held at the Good Shepherd United Methodist Church on 21 January, 2022, and it felt good to be back in our historic meeting place once again.

Club President Carole Burke, WB9RUS welcomed the attendees (about 12) including Brett, Christine and Luke Gilsinger, KD9's TST, TTK & TTL, newly minted hams. She led everyone in the pledge of allegiance as is our usual practice. Then all present introduced themselves by their name and call-sign.

Treasurer Bob Streeter, W8ST,was not present but he provided data regarding the current club Treasury statistics as of 17 November, 2021, to wit:

Savings-	$1,843.07
Checking-	$8,084.07
Vanguard Money Market	$11,326.41
Year-To-Date Income	$790.00
Year-To-Date Expenses	$57.85
Club members count	127

Carole noted that the program for the February meeting will feature Carl Luetzelschwab, K9LA, ARRL Central Division Director, who will present a program whose subject will be either, the inner workings of the ARRL, or, strategies to control the effects of Electromagnetic Interference (EMI). He hasn't decided which it will be yet. In March Jack Shutt, W9GT will present a program describing the new tower system he recently installed at his QTH (it is reported to be quite a piece of work). Also in the works are programs by Jim Pliett, K9OMA regarding the fold-over tower he installed at his QTH and, in a separate program what he learned in designing and building both a windmill and solar cell off-grid power system. Also in the works is a program by Ron Gregory, W9RGM about his experiences as a disk jockey at WOWO during the 60's, 70's and 80's. Another possibility is an additional program by Jack Shutt on vintage gear, (things that had filaments and glowed). And Al Burke, WB9SSE is attempting to recruit a person from Ft. Wayne City Utilities to describe the Ft. Wayne Deep Rock Tunnel project which is employing the "MaMaJo" Tunnel Boring Machine to create a tunnel beneath the city to minimize raw sewerage runoff into our local rivers.

Carole mentioned that Foxhunting is scheduled to re-start for the 2022 season with the February 6th hunt. She also mentioned that there had been some concern regarding the points scoring system employed for the past several years in that it seems to give an advantage to the fox in awarding points for any particular hunt. The current scoring scheme specifies that"

"When a foxhunter physically locates and eye-balls the fox, (normally the micro-fox), he/she will notify the fox who will note the time. If there are N foxhunter teams, each member of the first team to find the fox receives N points, and the first person in that team that found the fox receives N+1 points. All members of the second team to find the fox receive N-1 points. All members of the third team to find the fox receive N-2 points, and so forth.

The person or team that function as the fox each receive a score equal to the sum of the number of points earned by each of the hunters divided by the number of foxhunter teams. In other words their score = (Σ (points earned by <u>each</u> hunter)) / (number of hunter <u>teams</u>)."

Experience has shown that this method of allocating points to the fox has given the fox an unfair advantage. So it is proposed that starting with the February hunt the fox will simply be assigned one point for that hunt.

Paul Prestia, KA3OPZ and Al Burke gave a status report on the club's repeaters:

The 146.76, 445.875 146.94 and D-STAR machines seem to be operating normally but there are nonetheless a few problems noted. We are going to lose the Internet link we have at Parrott Rd. within the next few months because Phil Hooper, AB9IZ will be moving to Washington State and he had been kind enough to provide us Internet access for the Parrott Rd. site via a 900 MHz data link between Parrott Rd. and his QTH. The D-STAR machine requires Internet access to allow it to operate within the D-STAR network. We are investigating the possibility of establishing a microwave link between Parrott Rd. and our Purdue-Ft.Wayne (PFW) site where Internet is available.

The Bridge-Com BR-50V 146.91 implemented Echo-Link machine at PFW has been having a significant number of system hangs recently where-in the transmitter remains in an unmodulated carrier on state, and we have not been able to correct the problem by remotely resetting power to the system. The problem is suspected to be caused by a hardware or software race condition in a Bridge-Com designed and built controller that's part of the Bridge-Com unit, and we have not been able to identify it. The Bridge-Com unit was removed from the PFW site and has been residing on Paul's workbench where he has been attempting to duplicate the fault condition, to no avail. We have had no success in getting the folks at Bridge-Com to analyze the situation and develop a fix. In order to get 146.91 back on the air we have temporarily installed a loaner Motorola system obtained from Jim Pliett and have 146.91 back on the air operating as a straight repeater, but without Echo-Link capability.

We had concluded that the (Bridge-Com) 146.91 hardware should be replaced and proposed doing so with a robust, commercial grade Tait TB-8100 unit that can be purchased via eBay for $872.00 including taxes and shipping. Since this exceeds the $150.00 expense limit that can be authorized by a Board of Directors action alone, Al Burke formally proposed a motion to be authorized to spend up to $900.00 towards the purchase of the TB-8100 via a membership vote. This motion was seconded and then put to a vote. It was passed unanimously by those present with one absentia.

In lieu of the planned program, (the speaker was ill), Carole asked all present to give a brief thumbnail of themselves and comment on what caused them to get into the hobby, and what aspects of it they most enjoyed. It resulted in some fascinating discussions.

The meeting adjourned about 8:23 pm.

Respectfully submitted,

Al Burke, WB9SSE

Secretary, Fort Wayne Radio Club

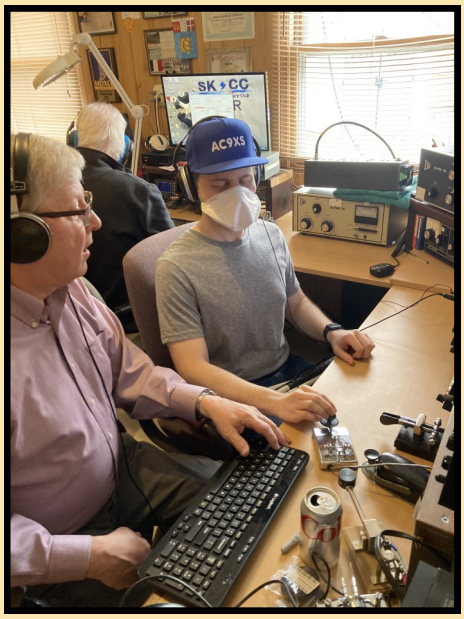
K3Y/9 – W9TE Multi Event

10 local amateurs operated two stations during the annual Straight Key Century Club anniversary month K3Y special event on Saturday January 8th. With some help from Jim- KR9U, Ken – N8KR got his small multi station up and running for the day-long event. Each of the two stations, both Elecraft K3s, were assisted by Alpha amplifiers and were designated as either 30/40 meters or 20/80 meters. As per SKCC rules, mechanical sending devices were used: straight keys or bugs. (sorry, no cooties in the shack this year!) All logging was done using the SKCC Logger by AC2C.

Smilin' Al—K9FW on 40 meters

Al – K9FW was first to arrive early Saturday morning. He was eager to get started and it wasn't long and we had a nice bunch of 40 meter contacts while Ken-N8KR operated the 80 meter station. It wasn't long and Carl – K9LA and Joe – WB9EAO showed up and took over. Both Joe and Carl have participated in this *annual* event for many years. Joe always brings his favorite bug and Carl feels very comfortable with whatever straight key falls under his fist. By the time 20 meters was opening, Ed – WA9BBN arrived bringing Steve – AC9XS. The two of them sat down at the 20 meter station and made some nice dx contacts along with working lots of stateside SKCCers. By the time lunch came around, Josh – W9HT made a pizza run and Jim – KR9U arrived. Lunch was relaxed and changes were made with the 40 meter station putting it on 30 meters. The change was simple as the 40 meter feedline also feeds the 30 meter dipole. Once the 40 meter bandpass filter (DX Engineering)was removed, the station was making contacts on the new band. It wasn't much later that Jay – W9LW arrived along with John – W9GOO from Auburn. Jay has been a long active supporter of this event and quickly settled in the 20 meter station. This was John's first visit to the station although John is very active with SKCC. By suppertime Steve and Ed were left with the evening west propagation. During that time New Zealand, Australia and Japan were added to the log. By the time the day had ended, 350 contacts were in the log. The only casualty was the old, reliable Alpha 76 amplifier. *Snap Snap Fizz Fizz . . .* and that was it! Jim and Joe were eager to find the problem and it wasn't long and they found a blown 450V electrolytic capacitor in the power supply. By the time our next multi event takes place, that amp will be back in full operation. It was a fun day to work and play together. . . A fine representation of the Fort Wayne Radio Club!

Jay—W9LW at the 20 meter station



Ed and Steve working DX on 20

Josh—W9HT; Al—K9FW, Steve—AC9XS, Ed—WA9BBN, Joe—WB9EAO; Jim—KR9U, Carl—K9LA, Ken—N8KR. Not pictured: **John—W9GOO, Jay—W9LW**

W9TE Achieves *Senator* Status in SKCC

It is now official! The long journey to Senator is complete. The Fort Wayne Radio Club applied for and was granted membership in the Straight Key Century Club on February 23, 2019. W9TE was given membership #20000. On March 14 of the same year, W9TE was given *Centurion* status having made at least 100 contacts with other SKCC members. On April 28, 2019 *Tribune* status was achieved having made at least 50 contacts with other Centurion, Tribune or Senator members. The next level, *Tribune x 8* was granted on July 8, 2021. That particular level is quite difficult as it requires contacts with 400 different SKCC members with Centurion or above status. The "icing on the cake" came with the Senator award: 200 contacts with different/unique Tribune or Senators. The big push to that level came with the multi operation on Saturday, January 8th when W9TE was a special *event* station with the K3Y January SKCC event. During that day several FWRC members gave out over 350 cw contacts to members throughout the world! Of those 350 contacts, 190 qualified for the run for Senator. With a little extra operation on Sunday, the club reached 200 and Josh – W9HT sent the log in for checking and for the award. W9TE joins the group of local Senator SKCC members including: Tom – KU8T, Jay – W9LW, Josh – W9HT, Ken – N8KR, Joe – WB9EAO, Ed – WA9BBN, Al – K9FW, John – W9WN, Jack – W9GT, John – NJ0U, Steve – AC9XS, Jim – KD9GDY along with John – W9GOO from Auburn and three additional local club calls including KS9KCC.

State of the Arts

Allen County Amateur Radio Technical Society P.O. Box 10342, Fort Wayne, IN

Allen County Amateur Radio Technical Society

Hello everyone!

Hope everyone had a good Winter Field Day. Being cold over that weekend, I hope everyone stayed warm.

Right now, the Salvation Army is where we will have our board meetings on the second Tuesday of every month. And our general meetings (third Tuesday of every month) will be held there as well.

Our last board meeting on January 11, 2022, we talked about general club activities. One thing that came up was we got a $100 dollar donation toward our Ham fest fund! We still have the Secretary position open on the ACARTS board. If anyone is interested in being a part of our board, please email me at w9tsb (at) outlook.com.

Our last general meeting was on 18th of January 2022; we had a small group that attended. I shared my experiences with Parks on the Air (POTA) and had a presentation on the basics of POTA. I also brought some of my gear that I use on my POTA trips. If anyone has any topics or activities they would like covered at our general meetings, just drop me a line and we'll try to find a presenter for that topic or activity.

I would like to welcome some new member to the ACARTS: Brett KD9TST, Luke KD9TTL, Christine KD9TTK, and Rosemary KD9TTM. Welcome to the hobby of amateur radio!

Thank you all!

73,

Chris McCullough W9TSB

ACARTS Officers 2022

President
Chris McCullough W9TSB
260-312-2750
kd9lrw(at)gmail.com

Vice President
Jim Boyer KB9IH
260-489-6700
kb9ih(at)arrl.net

Secretary
(open)

Treasurer
Howard Pletcher N9ADS
260-747-5252
n9ads(at)arrl.net

Station Manager
Jim Sampiere KD9NPL
260-999-8132
Kd9npl(at)gmail.com

Fundraising Manager
Fred Gengnagel KC9EZP
260-704-7801
kc9ezp(at)gmail.com

Directors at Large
Bob Erb N9PWM
260-466-7772
roberterb(at)hotmail.com

Steve Shannon K9SKS
260-704-5353
k9sks(at)aol.com

Dan Dahms N9NWH
260-503-4163
n9nwh(at)arrl.net

W9INX Trustee
Dave Lindquist W9LKH
260-485-6135
w9lkh(at)comcast.net

How Is Cycle 25 Doing?

By Carl Luetzelschwab, K9LA

The May 2021 FWDXA column looked at the prediction for a big Cycle 25 from Dr. Scott McIntosh and colleagues. In summary, Dr. McIntosh predicted a maximum smoothed sunspot number of around 230 in June 2020. That would make it similar to Cycles 21 and 22, which provided excellent worldwide propagation on our higher HF bands (15m, 12m, 10m) and even gave us F2 region propagation on 6m.

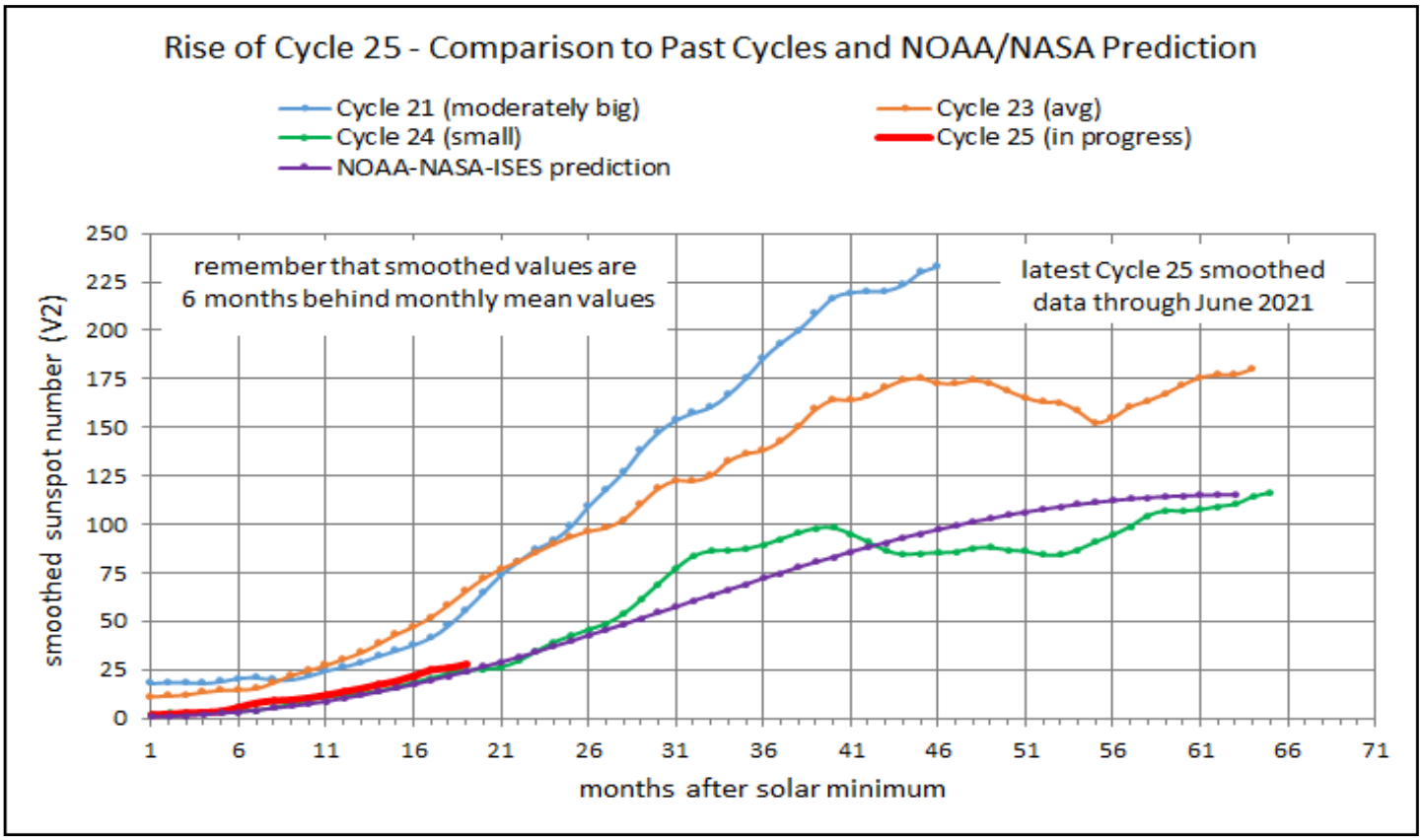
In August 2021, based on the current data at that time, Dr. McIntosh revised the prediction down to a maximum smoothed sunspot number of around 195. That would put it similar to Cycle 23, which was an 'average' cycle. If we had a choice between a small cycle (like Cycle 24) and an average cycle (like Cycle 23), I bet most of us would opt for an average cycle.

Dr. McIntosh's prediction for Cycle 25 and all the other predictions (the other 55) are great – if they come true. Given our track record of predicting solar cycles, it's tough to put your money on any of these predictions. So it's best to wait to see what happens and continue to monitor the current data. Here's the latest data for the progress of Cycle 25.

The purple curve is the prediction from NOAA/NASA/ISES solar scientists – they predict a small cycle similar to Cycle 24 (the green curve). The orange curve is for Cycle 23, which as stated earlier ended up as an average cycle. The blue curve is for Cycle 21, which would be really great for propagation on the higher HF bands and 6m.

Unfortunately, the Cycle 25 data so far indicates Cycle 25 is tracking Cycle 24. If it's going to turn into a bigger cycle, it better do something interesting soon. But remember that even if we do have a small Cycle 25, we'll still see great worldwide propagation on 15m, 12m and 10m around solar maximum in the fall and winter months using moderate power (100 Watts) and moderate antennas (dipoles/inverted-vees and small tri-banders). We might even see 6m propagation via the F2 region around solar maximum.

So hang in there, and watch for big spikes in the sunspot number and the 10.7 cm solar flux that may give us short-term openings on 15m, 12m and 10m (especially with FT-8). In a couple years those bands should be open on a daily basis.



Tuning Up

Crystal Radio Project, Part 1

Last month's "Tuning Up" article took a look at some of the technology described in some early pieces of popular electronics literature. In this article, we are going to delve into what will be part one of a two or three-part series recording how to design and build a crystal radio set. This article series was directly inspired by the books described in last month's article, and I have to believe that the authors of those books would be very surprised to find their stories encouraging the imaginations of radio amateurs more than 100 years later!

A Little Crystal Radio Theory:

Probably most of you folks reading this article are very familiar with crystal radios, but in case you're new to the term, let's take a quick look at some of the theory behind the crystal radio. The most obvious distinguishing feature of the crystal radio is that it works via receiving the energy of the incoming radio waves – no batteries included or needed! The received signals are usually quite weak, and because of this, most crystal sets only use some type of headphones or an earpiece, and not a speaker. Headphones used for crystal radios must be high-impedance, so unfortunately, one cannot simply use the common, low-impedance headphones currently found today.

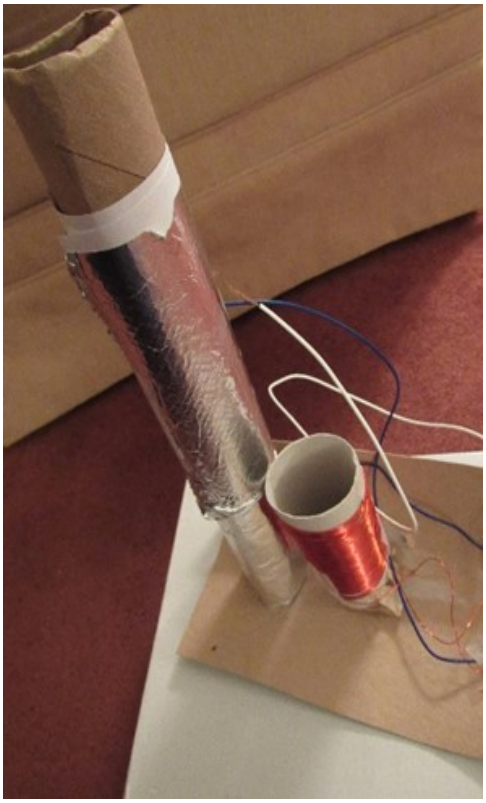


Figure 1 – One of the author's homemade crystal radios, built from a kit.

Most crystal radios are designed to receive only AM signals. In fact, crystal radios cannot even receive CW signals, because they do not contain a BFO (beat-frequency oscillator). It is possible to modify a crystal radio to receive CW or SSB signals, but such an effort will have to wait until the basic unit is completed and working.

Some designs of crystal radios stipulate that the antenna used should be about 50 feet or longer, and there should be a connection to some kind of ground. Your author does not have an easy access to a good ground, so the antenna at the author's qth will probably be an ongoing experiment.

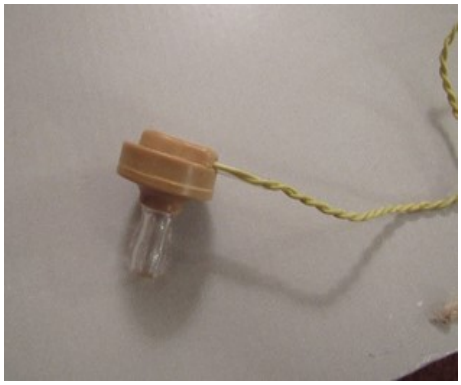


Figure 2 – A typical earpiece for a crystal radio.

Parts Needed for the Crystal Radio

In the simplest of crystal radio designs, the crystal radio consists of the following: an antenna +/- ground, an air-wound inductor (usually wound out of solid-gage wire), a tuning "bead" or rod, used to "tune" the radio, a diode (used to detect AM signals), and a pair of headphones. That's all there is to it! Be aware that the diode used should be of the germanium variety, as the type of diode used does make a difference in the effectiveness of the design.

So much for the basic design. The crystal radio set was in use for decades, starting in the early 1900s (or even late 1890s if one wishes to be very specific). Some crystal radio sets are truly elegant in their design, utilizing a wide number of coils and capacitors. The sky is truly the limit as far as design is concerned. For this project, your author will be designing and building a crystal radio set with a few modifications to the basic radio

described previously.

The first design change is that this crystal radio will be built to receive the shortwave bands (2-30 Mhz.) There is a surprising amount of AM signals present in this portion of the radio spectrum, and this design decision should give the greatest potential for receiving the longest-distance stations possible.

The second design decision is that instead of using a simple coil with a sliding bead or contact for tuning, this radio will use a combination of two coils and a tuning capacitor. This is a design idea that was commonly used in many crystal radio designs, because a tuning capacitor makes it much easier to "tune in" signals, vs trying to manipulate an often finicky sliding bead.

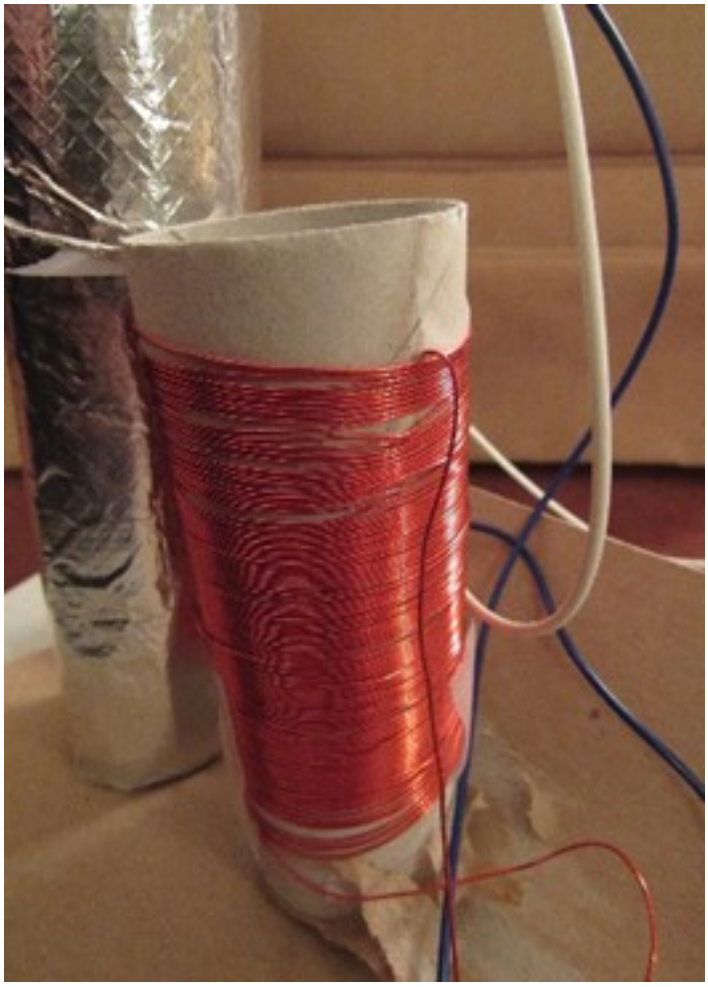


Figure 3 – A close up of a single-coil crystal radio, with a tuning capacitor made out of tinfoil in the background.

The third design decision compliments the prior idea, and that is to use not one but two air-wound coils. This is done for one major reason- increased selectivity. The crystal radio is not known for being a very selective receiver, especially since the only filtering provided in the circuit is the basic impedance matching between the coil and the antenna. Although it might be nice to have a roofing filter or bandpass filter for a crystal radio, it's just not practical. One solution that can be used (and will be used for this project) is to use two, non-connected coils – a primary coil and a secondary coil – with the antenna connected to the primary coil. The energy received by the primary coil will inductively couple with the secondary coil, as both coils will be placed in-line with one another and in close proximity. One coil will be moveable so as to change the distance between the two coils. This means that as the coupling is decreased, the selectivity will increase, and vice versa.

The last major design decision is that each coil will have a series of "taps" for each winding of the coil. Because the coil acts as a crude impedance transformer, adding taps to the coil improves the range of what impedances can be matched. The better the impedance match between coil and antenna, the stronger the signal reception.

There will be other additions and improvements to the crystal radio, and as your author learns and researches more into the subject, the technical discussion will improve. In next month's article, keep an eye out for the actual board layout of this crystal receiver and photos of the project in progress! If you want to get started on building your own crystal set, this radio is following the designs found in a YouTube video by MIKROWAVW1 at the following link: **https://www.youtube.com/watch?v=u1vK3QcyBBw**.

73 and see you next month de Jim AC9EZ

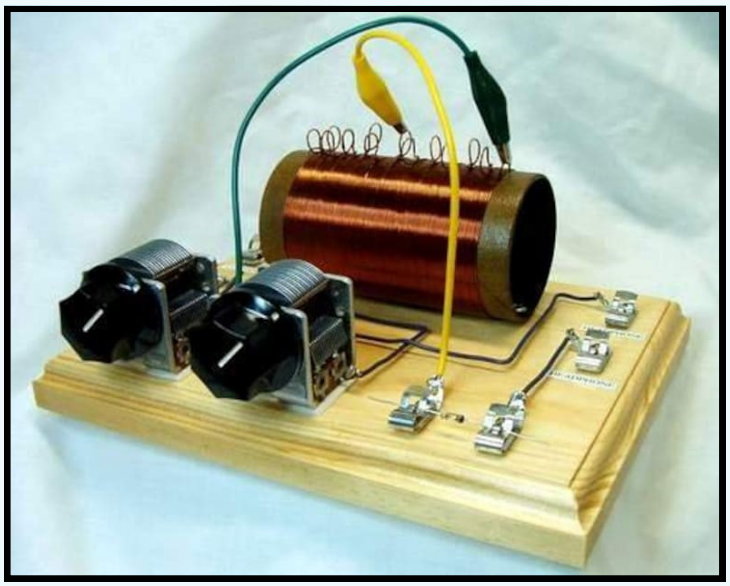
FWRC CRYSTAL RADIO DESIGN CONTEST

The Crystal Radio Design competition is a fun competition designed to encourage both hams and non-hams alike to design and build their own crystal radios. Crystal radios can be as simple as a coil of wire, diode, and earpiece to as complex as the professional designs of the early 1900s. For this competition, the rules are simple.

- Entrants are to design and build their own crystal radio, using whatever design they prefer. Stations may receive design help and advice from friends. Just don't have someone else build your radio for you and claim it as your own work!
- All crystal radio designs must be unpowered, just as the name implies. Crystal radios may include any kind of modification desired, including but not limited to external amplified speakers, BFO's, etc.
- All entrants are asked to send a picture of their completed radio to Jim, AC9EZ, at dfile13 (at) hotmail.com for inclusion in a final article to be published in the Fort Wayne HamNews.
- Entrants will, on a specified date, use their crystal radios and any antenna of their choice to try to receive as many short-wave AM stations as possible (such as Radio China, the BBC, etc.) Entrants will record the date, time, and callsign/name of any stations received.
- The entrant with the greatest number of short-wave stations received will receive a certificate and bragging rights.
- The entrant with the furthest-distant station received will receive a certificate and bragging rights.

For an entrant's log to count, the entrant can only count received stations on the specified date of the contest. The date of the contest is March 26, 2022, from 9:00 a.m. to 10:00 a.m., and from 8:00 p.m. to 9:00 p.m.

Questions? Comments? Contact Jim, AC9EZ, at the address listed above. 73 and good luck!



Note from the Editor

It has been a very long time since I have used a crystal radio for a receiver. I used to have an electronics kit as a kid that included parts for a crystal radio, including the vintage earpiece that Jim describes in his article.

While a crystal radio might be a fairly easy thing to build if you have the parts, some of us might not have those parts in our radio stash. So, what are the options if you do not have a crystal radio or the parts right now?

- Esty.com has number of crystal radio kits and assembled radios. Prices vary from about $20 to about $165.
- MidnightScience.com has an oatmeal box crystal set kit for between $15-20.

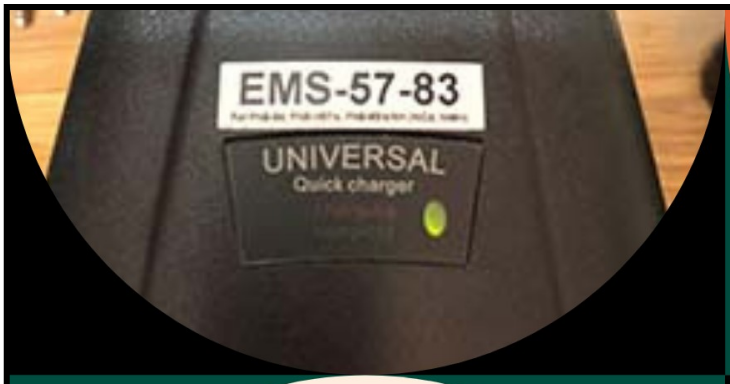
There are probably other options on the market, but those are a few of the ones that I found in my search.

73 de W9HT

WANTED

CW FILTER

A BUDDY OF MINE IS LOOKING TO PURCHASE EITHER THE YF-122C OR YF-122CN (500 HZ. OR 300 HZ.) CW FILTERS FOR HIS YAESU FT-857D. IF ANYONE HAS SUCH A FILTER OR KNOWS WHERE ONE CAN BE PURCHASED, PLEASE EITHER CONTACT JOHN, K0HD, AT K0HD (AT) POBOX.COM OR, IF YOU HEAR ME ON THE AIR, GIVE ME A CALL. THANKS! JIM AC9EZ



For Sale

For Sale: Yaesu Dual-Band Handheld with Many Accessories

Included:

·Yaesu FT-60 dual-band, handheld, FM transceiver with stock antenna in good condition. Radio is already programmed for all Fort Wayne-area repeaters.
·Yaesu FNB-83 NiMH battery pack
·After-market (Elxjar) NiMH battery pack
·After-market (brand unknown) alkaline (AA) battery case
·Batteries America EMS-57-83 desk charger
·Yaesu NC-88B wall charger
·Batteries America E-DC-5BA mobile adapter (power and charge)
·Pryme Trooper SPM-2102 heavy-duty speaker microphone with large PTT button (easy to activate while wearing gloves)
·MFJ-295 speaker microphone
·JDI JD-170X earphone microphone
·After-market (brand unknown) earphone with ear loop, boom mic and PTT switch
·Nagoya NA-772 extended, 2 dB gain, dual-band antenna
·After-market vinyl case (to protect keypad labels)
·Valley Enterprises RPC-Y1-UF FDTI USB programming cable for KC8UNJ FT-60 Commander or CHIRP software.

Offered as complete package for $225. This radio and accessories have served me well for several years, but I replaced it with a combination FM/DMR handheld and no longer need the Yaesu. Contact Jay Farlow, W9LW, arsw9lw(at)gmail.com.

For sale and wanted listings in this section are provided to members of the Fort Wayne Radio Club, the Allen County Amateur Radio Technical Society, the Fort Wayne DX Association, and to other local hams free of charge! Listings can be renewed upon request to the editor (see pg. 2 for contact information).

Selected Contests and Operating Events February 2022

Key:

Date	Event	Dates/Times
5-6	Vermont QSO Party, 0000Z, Jan. 5 to 2359Z on Jan. 6	
14-18	ARRL School Club Roundup, 1300Z, Jan. 14 to 2359Z, Jan. 18	
5	Minnesota QSO Party, 1400Z - 2359Z on Jan. 5	
19-20	ARRL International DX Contest, CW 0000Z, Jan. 19 to 2359Z, Jan. 20	
5-6	North American Spring, CW, 2300Z, Jan. 5 to 0300Z, Jan. 6	
26-27	South Carolina QSO Party, 1500Z, Jan. 26 to 0159Z, Jan. 27	
12-13	SKCC Weekend Sprintathon 1200z, Jan. 12 to 2359Z, Jan. 13	
26-27	North American QSO Party, RTTY, 1800Z, Jan. 26 to 0559Z, Jan. 27	

Radiosport

Area Nets

Daily			Tuesday		
8:00 AM	3.535	Daily (QIN) Indiana Section CW net	7:30 PM	147.150+	21 Repeater Group Net (97.4 PL)
8:30 AM	3.940	Daily Indiana Traffic Net	8:00 PM	50.580 USB	FWRC 6-Meter SSB Net
6:00 PM	3.940	Daily Indiana Traffic Net	9:00 PM	146.940-	Allen Co. ARES Training Net (141.3 PL)
6:30 PM	146.880-	IMO (alternate is 146.760)	Wednesday		
7:00 PM	147.015+	Tri State Two Meter Net	7:00 PM	146.760-	FWRC YL Net
8:00 PM	3.535	Daily (QIN) Indiana Section CW net	8:00 PM	145.270-	Whitley Co. ARES (141.3 PL)
Weekdays			8:00 PM	50.580 FM	FWRC 6-Meter FM Net
9:00 AM	3.820	Little Red Barn Net	9:00 PM	146.940-	Help and Swap Net (141.3 PL)
Sunday			Thursday		
8:00 PM	444.550+	Whitley Co. ARC Sunday Night Net (141.3 PL)	8:00 PM	D-STAR	Indiana D-STAR net (Note 3)
8:30 PM	1.965 & 146.910-	"No-Name" Net also on EchoLink Node number 519521	8:00 PM	50.580	AM 6-Meter AM Net
9:00 PM	145.53 simplex	Northeast Indiana Packet Net 1200 baud (Note 2)	8:30 PM	145.510 simplex	Allen County ARES Digital Operations Team Training Net (Note 4)
Monday			Saturday		
8:00 PM	224.780-	Fort Wayne 224 Net	8:00 PM	146.685-	Huntington ARES(141.3 PL)

1. All times local time. **Any changes or corrections should be submitted to the newsletter editor at drjoshlong (at) gmail.com.**
2. NEIPN is direct accessible via any BPQ Chat Node (or through Node hopping etc.) via other packet frequencies in this area and other areas through other nodes (it is locally direct accessible on 145.53 in NC & NE Indiana/NW Ohio and SE Michigan using KA9LCF-11, KC9VYU-11, N9LCF-11,N9PXO-11, K9BIF-11) Most BPQ Nodes use an SSID of -11.
3. Reflector REF024B.
4. Net starts using BPSK-31 and switches to BPSK-250 after roll call to pass traffic etc. NBEMS suite of software (FLDIGI, FLMSG, and FLAMP) is preferred.
5. Indiana HF Traffic Nets Web Site: http://www.inarrl.org/index.php/public-service/indiana-nts

Fort Wayne area repeaters (updated as of 1/1/22)

Frequency	Offset	Tone/ Notes	Callsign	Frequency	Offset	Tone/ Notes	Callsign
145.330	-0.6 MHz	--	W9FEZ	443.100	+5 MHz	DMR	K9MMQ
146.880	-0.6 MHz	--	W9INX	443.275	+5 MHz	P25	K9MMQ
147.255	+0.6 MHz	--	W9INX	442.6375	+5 MHz	--	N9MTF
146.760	-0.6 MHz	141.3	W9TE	444.800	+5 MHz	--	W9FEZ
146.910	-0.6 MHz	--	W9TE	442.99375	+5 MHz	D-Star	W9TE
146.940	-0.6 MHz	141.3 FM C4FM	W9TE	444.250	+5 MHz	141.3	W9AVW
224.780	-1.6 MHz	--	W9FEZ	444.8750	+5 MHz	141.3	W9TE
				53.3300	-1 MHz	--	W9FEZ

FWRC Membership Application

Name:_____ Call Sign:_____
License Class:_____
Street address: _____ City:_____
State:_____ ZIP:_____._____ Phone #:(_____) _____
Email address:_____ ARRL Member? _____
(ARRL membership helps the club maintain ARRL affiliation)
May we list your name, call & email address in our membership roster & on our club web site?

Fort Wayne Radio Club dues:

Regular membership	$25.00 / year
Family membership[1]	$35.00 / year
Student membership[2]	$5.00 / year
Associate membership[3]	$20.00 / year

(Memberships for July-December are ½ the stated amounts)

Please attach a check to this form (paying by check is strongly encouraged) made out to:
Fort Wayne Radio Club (check number_____) and bring to a club meeting or mail to:
Fort Wayne Radio Club
P.O. Box 15127
Fort Wayne, IN 46885-5127

[1] Please list all names and calls on an attached sheet.
[2] K-12 or full time student.
[3] Unlicensed member.

ACARTS Membership Application

Name:_____ Call Sign:_____
License Class:_____
Street address: _____ City:_____
State:_____ ZIP:_____._____ Phone #:(_____) _____
Email address:_____ ARRL Member? _____
(ARRL membership helps the club maintain ARRL affiliation)
May we list your name, call & email address in our membership roster & on our club web site?

ACARTS dues:

Regular membership	$12.00 / year
Additional family members[1]	$6.00 / year
Student membership[2]	$6.00 / year
Associate membership[3]	$6.00 / year

(New regular memberships are $1.00/month)

Please attach a check to this form (paying by check is strongly encouraged) made out to:
Allen County Amateur Radio Technical Society (check number_____) and bring to a club meeting or mail to:
A.C.A.R.T.S.
P.O. Box 10342
Fort Wayne, IN

[1] Please list all names and calls on an attached sheet.
[2] K-12 or full time student.
[3] Unlicensed member.