



# Cherry Juice

Newsletter of the Cherryland Amateur Radio Club

VOLUME ISSUE

50 4

April 2021



The Moon and Back  
**W7GJ**

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## 6m LIVE EME QSOs

By Scott, WX1J

To say the **March Club Meeting** was **swamped** was an understatement. Our first In-Person meeting since early 2020, was joined by 65+ people attending via Zoom. There were fewer in person.

While those of us at the Salvation Army were treated to coffee, donuts and in-person visiting, all of us were treated to a live Zoom connection to Lance Collister, W7GJ's computer and radio in Frenchtown, Montana, as he demonstrated **Earth-Moon-Earth** communication process, and showed actual live contacts with stations in the US, France, Italy, UK, Finland and North America. Lance's credentials in the world of amateur radio are strong and the information, experience and explanations were valuable to anyone aspiring to weak-signal VHF work.

I'll admit it was strange speaking with Lance about weak signal work, when he was running 1,500 Watts into an array of four 9 element Yagi's mounted on a double H frame configuration elevated toward the moon. But, once he explained the all the signals have to accomplish to do a round-trip and still be intelligible on the receive end, it made a lot of sense.

Lance made eleven 6m EME contacts on the 23<sup>rd</sup> of March, during the Club meeting. Those were with G8BCG, OH2BC, K9RX, I4YRW, N3XX, N0TB, K5NA, HB9Q, HA2NP, K2ZD and F1IXQ.

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Affiliated Club #1082

# To the Moon and Back. . .

## Un Messaggio Dall'Italia

30, Marzo, 2021

Ciao, Cherryland ARC,

Thank you for the link to the video of W7GJ, but, first I would like to thank you and all the Cherryland Amateur Radio Club in Traverse City for giving me the opportunity to personally participate in this wonderful evening.

The presentation given by Lance was very interesting and we must truly acknowledge the great commitment he places in spreading interest in E.M.E. in the "magic band" among the OMs from all over the world.

The presence of this video on the web will surely give the opportunity to many amateur radio to become passionate about this particular and satisfying world.

Thanks again and see you soon on frequency.

73

Paolo, I4YRW  
Pianoro, BO, Italy



Continued from Page 1

One of three pages of Zoom attendees.

Thank all of you who tuned in from near and far, and to all those who braved the wilds to join Club members meeting live, in-person at the CARC Club meeting in Traverse City.

The members of Cherryland Amateur Radio Club were joined by **Pat Connell, W0OJU**, President and various members of **AKSARBEN Amateur Radio Club** in Omaha, Nebraska.

We also welcomed **Curt Black, WR5G**, President of the **West Seattle Amateur Radio Club**, **Mike Fulcher, KC7V**, Past president of the **Arizona Outlaws Contest Club**

And we were very pleased to welcome **Ishmael Harding, EL2BG**, President of the **Liberia Radio Amateur Association in Bushrod Island, Liberia**.

More than 65 people logged on, including some who also worked W7GJ via E.M.E. during the event. Besides those from CARC territory, hams represented nearly every part of Michigan and the US.

Friends from over a dozen countries gave the club event a global presence. Visitors from Canada, Mexico, Australia, Liberia, England, Scotland, Italy, Hungary, Finland and Norway, Chile and Argentina were present at the meeting and many were active in making contacts with Lance on E.M.E. during the live session.

To be frank, most of the people attending this event, were active and excited about E.M.E. communications. Many have their own stations active and have credentials and awards to illustrate their prowess in this field. So we asked them for some hints about how to become active and now to explore this fascinating use of a celestial object to communicate.

Thanks to Joe, N8CN, Joe, KC8RLU and Drake, N8DMH for managing the Zoom Connections

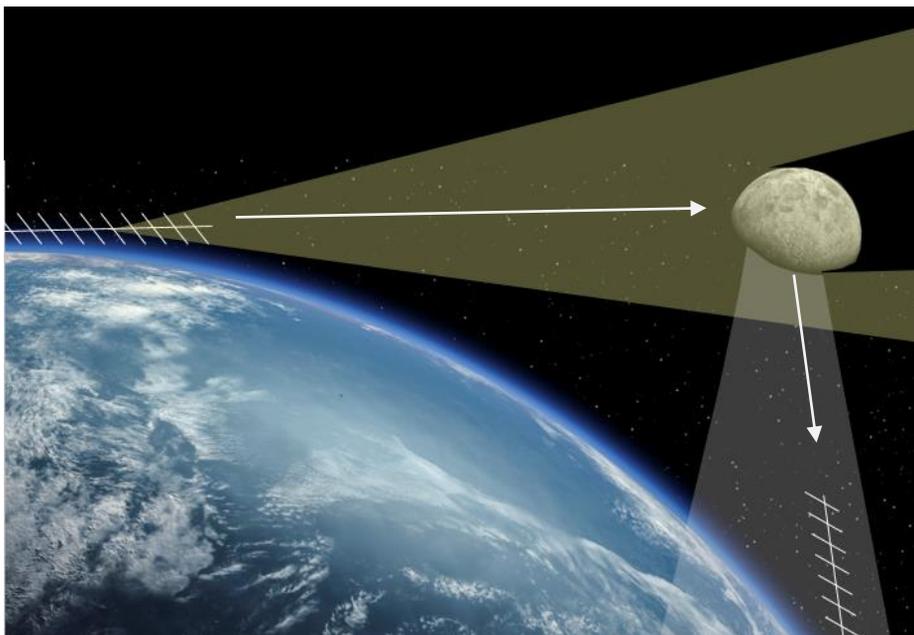
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E.M.E. communications, according to Lance, is a game of minimizing losses.

The moon's orbit around Earth is elliptical. On average, the distance from Earth to the moon is about 238,855 miles (384,400 km). According to NASA, That means 30 Earth-sized planets could fit between Earth and the moon.

First, the signal from Earth travels 238,855 miles. Much of the energy flies right past the moon, into deep space. The portion that does hit the moon, bounces off of craters, hills, valleys and suffers distorting angles of reflection. The reflected energy that is returned to Earth, travels 238,855 miles. The round-trip takes 2.5 seconds on a good day. Your antenna detects some of it.



**What do you need to communicate EME?** Well, it can be as complex as you wish, and according to Lance, it can also be simple and portable.

### A Preliminary Check-list

**Rig:** All Mode transceiver for your choice of frequency, 50M - 10GHz.

**Amp:** Low Noise Pre-Amp for Rx

**Amp:** Linear to 1500W is nice but contacts can be made at 100 Watts

**Ant:** Needs to be >14db gain can be single multi-element Yagi or a bank of Yagi's as the picture at the left, which is what Lance was using during the demo.

**Feed:** Low Loss Coax, Short as you can.

**Software:** WSJT-X J65, Q65

**Location:** Ideally, aim path over water or ground to moonrise or moon set at the horizon.

W7GJ 6 Meter Antenna Array



Simple & Serene DXpedition



# A Note from Lance

## To Cherryland Amateur Radio Club

By Lance Collister, W7GJ

### Hello Cherryland Amateur Radio Club.

Thank YOU for the opportunity to share 6m E.M.E. with you folks!

I really had not expected so many good questions. If you post the recording somewhere, please let me know....I have been receiving emails from people who could not be there and are interested in seeing how Q65 works. Right now, it still has not been released in a General Availability version of WSJT-X, but people have been using it for several months in Release Candidate versions, and it is really evolving into a very powerful tool for weak signal work.

Of course your techs, (Technician licensed) hams have all the privileges up above 30 MHz, so they can work EME and all the other fun things up there. Of course, 6m Es (Sporadic E) season is already starting back East, and during June from your location, people can work all over the country on 6m Es! In fact, you would be amazed at how many FT8 openings there are to JA in the late afternoons toward the end of June! And from your area, you can easily work the Carib and EU on 6m FT8 mode!

A great project for them would be to construct a 6m beam by Memorial Day weekend, and be ready to take advantage of the summer Es season

a very easily reproduced and effective antennas can be homebrewed here:

<http://yu7ef.com/>

With a 7 element or larger YU7EF yagi and 100w, they can work larger stations on the horizon if they have good ground gain. And of course, during Es season, they can work many stations on FT8 mode on 50.313 even with a smaller beam.

To see what is being heard and/or worked on digital modes, PSK REPORTER has all but replaced CW beacons:

<https://pskreporter.info/pskmap.html>

To chat with other 6m operations and see who is working what, I suggest ON4KST REGION 2 CHAT:

<http://www.on4kst.info/chat/login.php?band=7>

To work 6m scatter using Q65 or meteor scatter using MSK144 mode, a great starting place is the Ping Jockey page:

<https://www.pingjockey.net/cgi-bin/pingtalk>

I didn't talk about it in any detail, but there are many portable operations on 6m during Es season to activate different grid squares for the ARRL FFMA

award, given to anybody who works all 488 grids in the continental USA on 6m:

<http://www.arrrl.org/ffma>

A map showing the "most needed" grids by the people closest to getting the award is here:

<https://onedrive.live.com/view.aspx?resid=794439C5DE4B21F!6062&ithint=file%2cxlsx&authkey=!ADuUnWhBLboTJY>

Note that EN85 and 86 in Michigan (*Alpena, North over Manitou Islands, West to Sault St. Marie, Ed.*) are still very much in demand by many people! I will be activating DN38 and DN34 in June. You can see summaries of my grid activations along with all my EME DXpeditions on my web page.

**TNX AGN and GL! VY 73,  
Lance**

The link to the Video Recording is:

<https://youtu.be/vOrCXifwAsM>

You can find out more about Lance and his weak signal work at: QRZ.com – W7GJ

And his web-site at:

<http://www.bigskyspaces.com/w7gj/>



# A Very Brief History of E.M.E.

## Earth-Moon-Earth Communication

Gleaned from a variety of sources, by CARC Newsletter staff

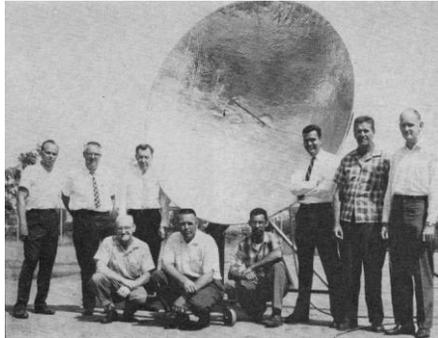
In 1943, during German experiments with military radar measurement tests, reflections of the moon were received and recognized as such. The radar device and antenna was given the name "Würzmann." Transmitter output power was 120kW on 564 MHz. They used collinear arrays mounted on two towers at 36m high. The system was set up on Bakenberg, south of the island of Rügen, where the phenomenon of echoes from the moon were observed.

It was not until the close of World War II, however, that techniques specifically intended for the purpose of bouncing radar waves off the moon to demonstrate their potential use in communication, and radar astronomy were developed. The first successful attempt was carried out at Fort Monmouth, New Jersey on January 10, 1946 by a group code-named Project Diana. It was followed less than a month later, on February 6, 1946, by a second successful attempt, by a Hungarian group.

The projects that followed included a teletype link between the naval base at Pearl Harbor, Hawaii, and the United States Navy headquarters in Washington, D.C. The development of communication satellites in the 1960s made this technique obsolete. However radio amateurs took up EME communication as a hobby; the first amateur radio moon bounce communication took place in 1953, and amateurs worldwide still use the technique today.

**The first amateur radio moon-bounce signal** was achieved in 1953 on 144 MHz by W4AO and W3GKP

**The first amateur radio moon-bounce two-way microwave contact** communication took place on Sunday, July 17, 1960 between California and Massachusetts.



Eimac Radio Club, San Carlos CA

This contact marks an important milestone in the development of amateur radio. The historic contact was between the members of the Eimac Radio Club in San Carlos, California and Mr. Sam Harris, Rhododendron Swamp VHF Society in Medfield, Mass.

At each end of the circuit, a 1000-watt klystron was used in the transmitter and a very sensitive parametric amplifier in the receiver.

(Source: summarized from Wikipedia and [https://physics.princeton.edu/pulsar/KIJT/Hbk\\_2010\\_Ch30\\_EME.pdf](https://physics.princeton.edu/pulsar/KIJT/Hbk_2010_Ch30_EME.pdf))



**The first 50MHz contact** was chronicled QST in September 1972 with this report:

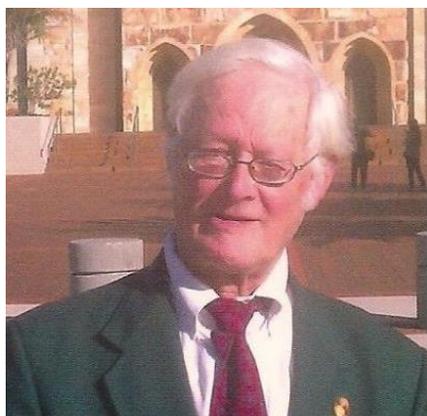
*"WA5HNK and W5SXD, Houston pictured in our August QST column, P.88, and K5WVX and W5WAX, Muskogee, Oklahoma, close to completing exchanges on 50 MHz via the EME route, finally made it at 0433 GMT on (July 30 1972). Communication was first established on CW, using the calls W5SXD/5 and W5WAS/5, a try was made on ssb, with only partial readability.*



Joe Muscanere, WA5HNK <SK> and Richard Allen, W5SXD (l-r)

*Their similar 48-element arrays of 8, 6-element Yagis each were aimed East, at the rising moon, for maximum horizon gain. This is a must, with antenna gains estimated at 18db over a dipole, but it also adds to the noise problems. The arrays were not rotatable, in the usual sense, but can be moved by hand for various "windows." Good tapes were made several times earlier in the month. We now have confirmed EME communication on all amateur bands from 50 – 2400 MHz."*

**This announcement appeared in September 1972 QST.**



**James Monaghan, W8TVV/ N8GNQ**, passed away on Wednesday, October 28, 2020 in Livonia, Michigan. He was born August 21, 1939 in Chelsea, Michigan, the son of Francis and Anna (Geddes) Monaghan of TC.

Jim served in the Army National Guard in his early days. He worked as a taxi driver and mail carrier in the 1950's. In 1960, Jim was Co-Founder of Domino's Pizza with his brother, Tom. In the 1970's he worked as a security guard at Norris Industries in Ypsilanti. In 1980's and 1990's Jim was an electrician for the Ypsilanti School District. He was a devout Catholic.

For 30 plus years, he held the Jim Monaghan Antique Engine Show at Domino's Farm in Ann Arbor. He was a machinist, inventor, ham radio enthusiast, Constitutional pamphleteer, steamboat captain, engineer, and a chaplain for the Michigan Militia. He is survived by his son, Jeffrey; grandson, Jeremy; brother, Thomas and neices. He was preceded in death by his parents; his wife, Judith, and his son, Michael.

A Mass of Christian Burial was celebrated November 6, 2020 at Saint John the Baptist Catholic Church, Ypsilanti, MI, Burial followed in Saint John the Baptist Catholic Cemetery.

## With memories shared by Traverse City's own *Radio Boys*

### Growing up in Michigan

The Monaghan family lived in a small farmhouse built by his father. Water came from a near-by stream until they could afford a pump. In 1941, his father died.

Since his mother earned only \$27.50 a week, she was forced to send Jim and his brother Tom, to a foster home and finally to the St. Joseph Home for Boys. He lived there for six and a half years, until his mother was able to reclaim him.

His mother completed nursing school when he was entering high school. She began work at Munson Hospital in Traverse City, and brought the boys to live with her.

The brothers helped financially by growing and selling vegetables from the backyard, catching and selling fish from Lake Michigan, and selling the Traverse City *Record Eagle* in front of Milliken's Department Store in the center of town. Jim attended St. Francis High School in Traverse City, with his classmate Joe Novak, W8TVT.

Joe recounted that the Monaghan brothers lived next door to his grand parents on Elmwood Street, a few blocks away from Joe's home today. They were always together and friends. They all got their Ham licenses, by studying together at the Club around sixth grade.

*Continued on Page 6*



**James A. Monaghan**  
*"Better late than never."*  
 Jet's Club – 3, 4  
 Prom Committee – 3  
 Sodality – 1, 2



**Joseph W. Novak**  
*"A contented fellow, and easy to get along with."*  
 Acolyte – 1, 2, 3, 4  
 Basketball – 1, 2  
 Football – 1, 2, 3, 4  
 Intramural Basketball – 3, 4  
 Memory Book Staff – 4  
 Prom Committee – 3  
 Sodality – 2, 3

Saint Francis High School Annual

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## The Radio Boys- Got their Ham Tickets the hard way, then the long way.

Edited by Scott, WX1J from conversations with Frank and Joe.

It was fellow ham, Frank Shumsky, W8TVQ, who first alerted the Cherry Juice of Jim's passing and began describing the early years: . "Jim Monaghan and I became members of the Cherryland Radio Club in about 1952 when we were in the 6th grade. I was at Immaculate Conception School. With the help of the club we received our novice class licenses in 1954." Frank said

Upon hearing of Jim's passing, Joe Novak, W8TVT, added his recollection, telling the story, that the Club taught lessons for the ham test. Tests at that time were given only in Detroit. Unless you lived more than 200 miles from the test center. Then you could take tests under the eagle eye of an authorized Amateur of the highest class.

The license course was taught by Bill Martinek, W8JUY, of the local jeweler fame. (You'll see the Martinek clock in the 200 block downtown on Front Street.)

Frank picks up the story, "I was licensed as W8TVQ, and Jim as W8TVV. In our class was Joe Novak, W8TVT, Dick McLean, W8TVW and Bob Tanis, W8UAI," Frank said.

Joe, W8TVT recalls that "the Club had moved around that time from meeting at the VFW to a Quonset hut out on the Northern Michigan College campus. That is where they met as young hams in 1954 to take the FCC Exams." He said.

"The licenses at first were WN8TVT, WN8TVQ, WN8TVV, WN8TVW and so on, because they were Novice licenses good for only one year.

When you passed your General, your license dropped the "N" after W, but your license had a "Conditional" stamp on it for the first half of your ten-year license." Joe continued.



Joe Novak, W8TVT

Frank remembered that he built his first transmitter, a two tube 807 final running 50 watts. Later, he built a transmitter with a 6146 final. Jim had a two tube with a 6L6 final and a ARC 5 military surplus with a pair of 807s. Joe had built a Heathkit DX100 and Bob had a Heathkit AT1."

"Remember that old work shed out back of Monaghan house? That's where Jim had his radio shack," Joe recalled, "



Frank Shumsky, W8TVQ

Frank continued, "I visited Jim and his brother Tom on several occasions over the years at Domino's Farms in Ann Arbor. Jim let his call expire and relicensed as N8GNQ and became a regular member of the *Sunday Morning Amateur Social Hour Net*, back when I was Net Control Operator."

*Joe and Frank both have great memories, and stories to tell. It was a pleasure communicating with both of them- ed.*

There is much ado about Jim and his brother Tom founding the Domino's Pizza empire, and Jim's decision to gracefully bow out, selling his half to Tom for a small sum. But, as I hear the stories, it's possible that Jim just really loved a more simple life, he continued to work for the post office and as an electrician, and other things that brought him joy and allowed time for ham radio.

Frank again. "Over the years, we have gone our separate ways. I live in Traverse City and Brandon, FL, Joe Novak still lives in Traverse City too. Bob Tanis retired as professor from Harvard University. Dick Mclean to the best of my knowledge became a boat bum in the Bahama islands."

We will all miss Jim.

# Michigan QSO Party 2021

## New to Contesting?

### Here's what to expect.

One rite of Spring is the annual Michigan QSO Party contest. While the contests allows only contacts on 80, 40, 20, 15 and 10 meters, It gives Technicians a good opportunity to work 10 meters when there is activity on the band.

In the MIQSOP, your score is yours alone and by listing CARC as your "Club affiliation" on your score sheet, your points are added to CARC also.

Cherryland ARC competes with other clubs for top honors each year. Typically, the club has been in the top group, which was won last year by local area Bay Area DXers. Cherryland ARC's challenge this year is to win the overall club score. To achieve that, we need your points, be it one, ten or one hundred.

**Why contest, you ask?** It's a great exercise to sharpen your skills as a radio operator, and to work out bugs in your station that aren't apparent when you just make a contact or two. Contesting removes key roadblocks for some operators. It removes the question of "what do I talk about? It eliminates trying to think of what to say next. The contest uses a standard – or semi-fixed exchange of information that is required to consider it a qualifying contact.

The required exchange is a serial sequence number, starting with 001 and incrementing one number with each subsequent contact. Your first contact is 001, your second is 002 and so-on through the day. The second piece of information is to give YOUR county in which you are operating. For Traverse City, the exchange is GRTR. Grand Traverse. Each county has a 3 or 4 letter abbreviation. The list of county abbreviations is listed in the MIQSOP official list of counties, Linked on their site, and at the end of this article. The operator you contact will also give you their sequential serial number and either their county, if in Michigan, or their state or province if outside Michigan.

**On April 13, at 7:00 PM Project Night Zoom session** – we will go through the contact exchange with more time for Questions, Answers and for other hams to share their experience of what works well for them.

**A typical contest contact would sound something like this:**

- CQ, CQ, Michigan QSO Party, W8TCM, Whisky Eight Tango Charlie Mike CQ Michigan QSO Party
- W8RQM
- W8RQM – W8TCM, Please Copy 001, GRTR
- W8TCM – W8RQM, QSL 001 GRTR, please copy 014, Wayne County
- W8RQM – W8TCM QSL 014 WAYN Thanks. Good luck in the contest.
- QRZ MI QSO Party W8TCM

That exchange took only 33.18 seconds and with practice, and some operating styles, it could be cut down by eliminating the call-signs in steps 3 and 4. Your style will develop. But remember you need to ID at the beginning and end of each contact

## Veteran Contester?

### MI QSO Party

**Date:** April 17, 2021

**Start:** 12:00:00 EDT

**End:** 23:59:59 EDT

**Bands:** 80, 40, 20, 15, 10 Meter Bands

**Modes:** SSB, CW

**Exchange:** Serial Sequential Number starting 001 + County 4 letter Abbreviation. Ex MI, State/Province/DX

### Categories:

Single Operator.

QRP < 5 W

low power <100 W

high power >101 W

Multi Operator

not categorized by power

Mobile (motion is not required)

solo or multi operator

Emergency Operations Center (EOC) Station

Log Submit: Cabrillo Format, uploaded by May 23

# THE COURAGE KENNY HANDI-HAM PROGRAM



By Ken Semproch, N8LUL

Handiham Program volunteer, Joe, AI0Y, operating the mic for camper, Diane, WD9DNQ. John, NU6P, is logging while Diane runs the PICONet.

**The Courage Kenny Handiham Program** provides tools for people with disabilities to learn Amateur Radio and technology skills, and to earn their Amateur Radio licenses. This sounds simple and straightforward, but what is happening behind the scenes is that people with disabilities who join the program quickly learn about new technologies that will help them in other aspects of their lives, not just amateur radio. By working through the process of earning an amateur radio license, Handiham members become familiar with setting goals and following a plan to achieve them.

Handiham members become a part of a worldwide community of amateur radio operators. This

community is alive with opportunities for all sorts of life enhancing activities. One can make friends on the air, stay in touch with other Handiham members who might use similar assistive technology such as blind-friendly computing systems and radios and CW code to text converters such as the Elecraft DMX-40 from [www.preppcomm.com](http://www.preppcomm.com). They take part in competitions throughout the year thanks to all the many awards and contests going on nearly all the time, and learn more about STEM – Science, Technology, Engineering, and Math.

**An important aspect of amateur radio has always been to offer assistance to one's community to one's fellow amateur radio operators.**

The Handiham program emphasizes these values and encourages the members to give back by participating in public service through their local amateur radio clubs and volunteering to help others.

We can become an affiliated club by filling out the attached club affiliation agreement. We would then be listed on the Handiham website as a resource for people with disabilities.

The word KENNY in courage Kenny Handiham program comes from the joining of Courage Center with Sister Kenny Rehabilitation Institute. They are located in Golden Valley, Minnesota near Minneapolis-St.Paul.

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Final fox hunt of the week led by Matt, KA0PQW. Following are Bob, WB2BYL, and Joanne, KG6POZ, both with sighted guides.

Pontoon boat ride with Handiham volunteer, Captain Bill, NOCIC, and several Handiham campers.



*Continued from Page 8*

Our club could support people with disabilities getting involved in amateur radio. We can contact a local rehab facility such as Mary Free Bed in Traverse City and let them know we would help with a safe, socially distanced hobby that works great for people with all kinds of disabilities.

Once in-person activities resume, we could offer rides to club meetings, making sure our meeting place is accessible for people with physical disabilities. We could provide readers for test sessions, readers for amateur radio related material, Elmers, and operating skills instructors.

They pair sighted instructors with one blind instructor so that sighted instructors have the support needed to teach classes that consist of 80 to 95 percent of students who are blind. Tech and General are done once weekly for 12 weeks, Extra is once weekly for 16 weeks. Operating skills (Get on the Air) events are 5 days, with four hours of class per day. Volunteers can also travel to in person events. This is a bigger commitment since there is some cost involved for transportation and lodging. Not always feasible, but an option.

**"I assure you that all of this will give you an appreciation for the gifts of sight and mobility which we have, but you will be surprised and how many talents the Handiham members present."**

Ken, N8LUL

If you go to [www.handiham.org](http://www.handiham.org) you will see the list of HF and CW days and times. I was personally involved with Handiham many years ago with QSO's and it was an extremely satisfying experience.

73,

Ken, N8LUL

*PS: Listen for the Handham's QSO party on April 30, 2021*



Dr. Dave, KN0S, Extra Class instructor, with student, Bob, WB2BYL

# Sound Advice

Look for the meat- not the sizzle

By Dave Wilcox, K8WPE

I have received some feedback, while down here in Florida, about Bob Heil's braggadocio style of presenting,..... sour grapes!

So while you watch the videos I recommend, kindly overlook his salesman like style. After thousands of presentations, one develops a style and flow. But Bob Heil, was the one who actually did it! (audio balancing and phasing) first for the rock and roll stars and legends and later for us ham radio nuts.

As I get older I am noticing more and more **that I HEAR YOU BUT I DON'T UNDERSTAND WHAT YOU ARE SAYING!!!** Even my \$5000 set of hearing aids doesn't really help much for many voices. I can adjust various parameters but there is no real equalization, just knocking off some highs or boosting a group of lows or mid ranges. I need fine tuning of the speech range and each of my ears is different. A close friend of mine used to say that he wished that someday he would be able to have in his home the machine that the audiologist used to adjust his hearing aids. We aren't there yet but maybe someday.

This is why listening to even my K3 is sometimes tiring because of the mush in SSB, frequencies I hear but they don't add to the intelligibility. And it has an equalizer, but I need to adjust or fine tune EACH ear for MY speech range.

Well, I've rattled on too long on this subject but for the contesters and even other folks who spend hours listening to their rigs (even SWLs) they need to: 1) appreciate what makes good audio GOOD. It's not just the "beautiful audio" sound but what our brain hears that makes sense to us. And, 2) what we send out on the airwaves with our transmitters ..... as we get older it can sound like mush or it can be intelligible speech.

I really don't think many hams have a clue about this. We don't study this for our license exams. I don't even think the handbook discusses it. Many times I have to hold the speaker mic up to my ear even in my shack to hear or understand what some are saying on our FM nets as the frequencies that carry speech, for my ears, are under the "noise" that comes out of the rig. And some I don't understand at all..... I love Toby's voice. (KC8VSU) I can understand him!

Anyway, overlook Bob's method of teaching (and selling his products) but look for the meat. I give him a lot of credit because now, I understand about the speech frequencies. I don't understand half of what my wife says but there is a lady in our church that I can understand completely across the room, even in a crowd. I always wondered about that. When we were both younger I thought her voice was quite irritating, almost winey ....

Go figure.

## The Science of Audio

Here are some really neat videos by Bob Heil about sound and ham radio. Enjoy! Feel, free to pass this stuff along. You may never need or use this information but it explains a lot about audio for transmitting AND receiving.

**If you can't hear 'em you can't work 'em. And if you aren't heard... well, same result.**

<https://youtu.be/BuD-4hN9hFQ>.

<https://youtu.be/tx0P8QKJPvk>

<https://youtu.be/MHdDODyPAVA>

# Project Night Guest Speaker Spotlight

Frank Howell, PhD, K4FMH

On March 9, 2021

## DOES PRICE BUY PERFORMANCE OR SATISFACTION IN AN HF TRANSCEIVER?

By CARC staff

At Project Night, since Covid-19 put the kibosh on our meeting in person at the Club Radio Room, we have been given the gift of hearing and seeing presentations of very interesting new thoughts, new ways of doing things, and hearing from people, who are global experts in their fields of interest. March was no exception as we were treated to an enlightening new way of looking at HF transceivers, and a disciplined way to determine which rig is best for you.

Frank Howell, K4FKH, is not only a PHD in statistics, he's a ham since 1960s and has developed a three factor calculus to separate transceivers that we all think pretty much look similar, separated only by the price-point.

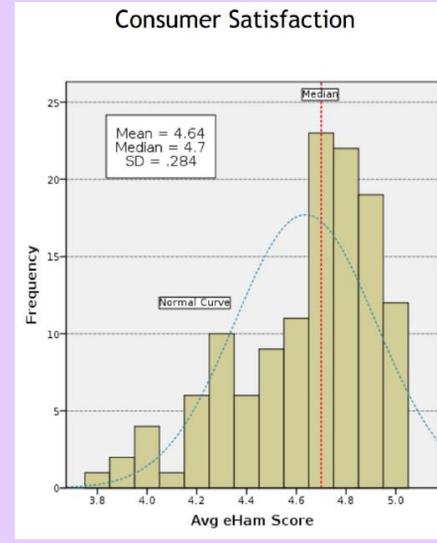
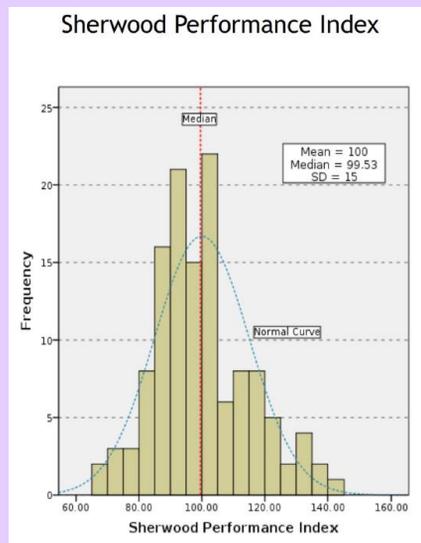
Frank gave Cherryland ARC members present at the Project night Zoom session – not only his presentation, but then emailed his manuscript of the talk, and we have a replay video for you to access in case you missed it.

In his presentation, Frank uses a unique dataset compiled from three known sources. This allows him to compare a list of popular HF transceivers and receivers covering the past 50 years by their retail price, measured receive performance by Rob Sherwood NC0B and overall satisfaction by hams who reported their experiences using a consistent rating scheme. bench

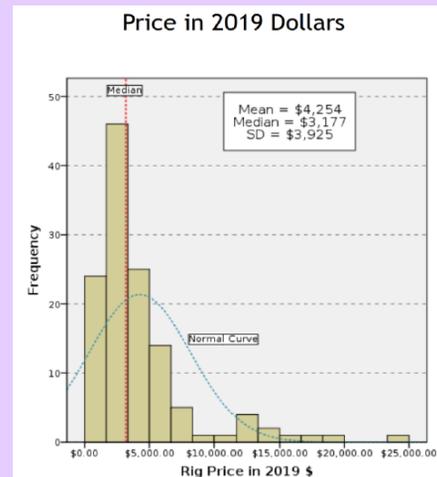
The receiver performance data is published by Bob Sherwood. Then, The crowd-sourced set of reviews published by eHam.net. They are voluntary and do not reflect all consumers of a given product, only those who submit their assessments. It's important to keep that in mind. They offer the reviewer an opportunity to respond to a consistent

rating scheme with a headline and text narrative explaining their experiences and opinions. But these “reviews” are essentially consumer satisfaction reviews, not workbench tests.

These two approaches to evaluating rigs should not be assumed to be equal. Nor can they



**Three core components of a definitive analysis on HF rigs helps Hams determine which rig is best for them.**



By themselves be an indicator of superior-performing rigs or the consumer satisfaction with them.

Add in the manufacturers suggested retail price and you can create a statistical analysis that will lead to distinguishing rig's composite value, as indicated in the XY Plot on page Eleven.

Frank's analysis presents a compelling view of HF rigs measured by these three independent factors.

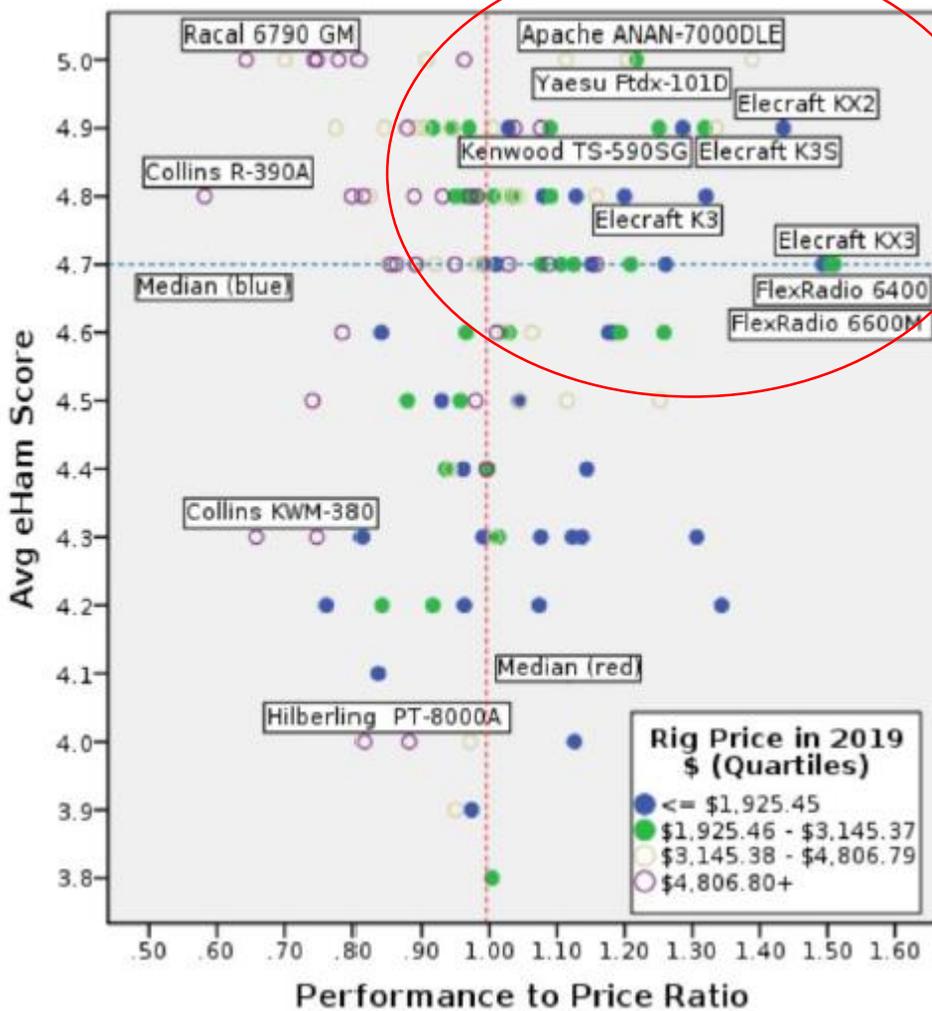
**Frank's Conclusion:**

“Price is positively related to better receive performance and the consumer's satisfaction with this set of well-known rigs included in the Sherwood Tables. The relationship is just smaller than our conventional logic would expect.

- The receive performance as measured through a composite index of the key metrics published in the Sherwood Tables is better in recent years than it has ever been and it isn't even close.

- Typical satisfaction with a transceiver depends on a number of things, receive performance only being one of them. Price is only moderately related to typical satisfaction. Features? Ergonomics? These elements of rig design and performance are not directly observed here.

- Major name-brands do not seem to have much broad or long-term sway with overall average satisfaction. The jury may still be out on this but my results do not detect evidence for it per se when all of the eHam reviews are tallied and evaluated by major manufacturer.”



The upper right quadrant shows the rigs that both perform very well for the price and several of them are below the median price in absolute dollars.

Both the Flex and Elecraft rigs annotated here fit that description. The Yaesu flagship (Ftdx-101D) and the Apache Anan-7000DLE fall just behind these rigs.

Note in particular that the Kenwood TS-590G falls into the “sweet spot” in terms of measured receive performance for the money and is at a lower price point, too

Frank Howell, presented a compelling case for this three-factor analysis. You can re-live that evening by video and reviewing Frank's slides and manuscript. See below for links.

**For More Information:**

If you would like to see Frank's presentation to CARC, **you can view it on YouTube here:**

**To review his PowerPoint presentation Click here:**

**To review his manuscript here.**

# News you can use

## Increased License Fees are **not** yet in effect at this time.

Several individual have incorrectly reported that the proposed fees for amateur Radio licensing have taken effect.

### **This is NOT TRUE.**

The FCC fees Report and Order adopted last December was published in the Federal Register this past week. To quote from ARRL's Legal Counsel: "I want to note to everyone that although generally the rules take effect on April 19, collection of the amateur fees will NOT begin on that date.

"The effective date for new amateur radio fees has not yet been established. The FCC explicitly states in the published Notice (at p.15061, paragraph. 44 <https://tinyurl.com/y52ff2zy>) that the fees "will not take effect until the requisite notice has been provided to Congress, the FCC's information technology systems and internal procedures have been updated, and the Commission publishes notice(s) in the Federal Register announcing the effective date of such rules." I expect that the effective date will be some time this summer, but in any event we will have advance notice".

Please, let us not contribute to the spread of incorrect information.

73,

Dale Williams WA8EFK  
Director  
Great Lakes Division  
[wa8efk@arrl.org](mailto:wa8efk@arrl.org)

## International Amateur Radio Union

### World Amateur Radio Day

**Every April 18**, radio amateurs worldwide take to the airwaves in celebration of World Amateur Radio Day. It was on this day in 1925 that the International Amateur Radio Union was formed in Paris. Amateur Radio experimenters were the first to discover that the short wave spectrum could support worldwide propagation.

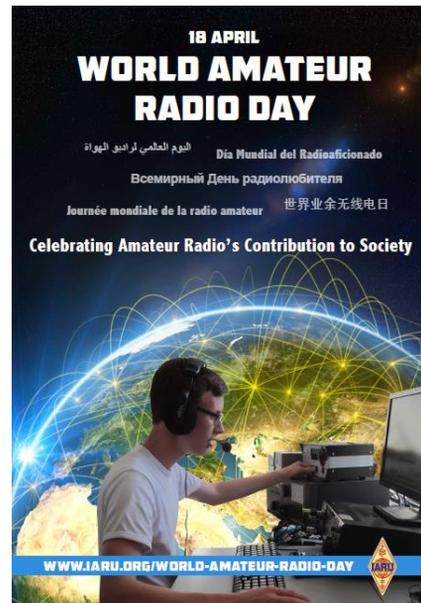
In the rush to use these shorter wavelengths, Amateur Radio was "in grave danger of being pushed aside," the IARU's history has noted. Amateur Radio pioneers met in Paris in 1925 and created the IARU to support Amateur Radio worldwide. Just two years later, at the International Radiotelegraph Conference, Amateur Radio gained the allocations still recognized today — 160, 80, 40, 20, and 10 meters. Since its founding, the IARU has worked tirelessly to defend and expand the frequency allocations for Amateur Radio.

Groups should promote their WARD activity on social media by using the hash tag [#WorldAmateurRadioDay](https://twitter.com/WorldAmateurRadioDay) on Twitter and Facebook.

### GREAT LAKES DIVISION ARRL CONVENTION

Plans are approved for this year.

DX Engineering will be hosting the event at their facility in Tallmadge, OH on August 7 in conjunction with their DXE Hamfest. Plans for special meetings and forums will be announced as soon as those events are confirmed.



**Bahrain:** The Bahrain Amateur Radio Society will operate A91WARD 14 – 18 April 2021 using SSB, FT8, and DMR modes.

**Canada:** Radio Amateurs of Canada are sponsoring a "Get on the Air on World Amateur Radio Day" special event. Details at <https://www.rac.ca/ward2021/>

**United States:** The ARRL has created a web page in support of World Amateur Radio Day: <http://www.arrl.org/world-amateur-radio-day>

The **Disaster Communication Action Team (AL)** will operate club station KD1CAT on April 18, 2021 in support of World Amateur Radio Day. DCAT will operate on all HF bands.

For complete information on World Amateur Radio Day, visit <https://www.iaru.org/on-the-air/world-amateur-radio-day/>



# CARC Plans Our Return to ARRL Field Day

**ARRL Field Day 2021** starts on-air contesting at 14:00 EDT on Saturday, June 26 and runs straight through until 16:59 EDT on Sunday, June 27. **But, the planning for participating in Field Day really starts about now.**

One can do Field Day anyway one wants, but the Club has a large group of stations each year all operating for the full duration of the contest. That is fun to see, fun to be around, and fun to participate. In this article, we will discuss a list of things to think about for your individual station, or a team effort and some thoughts we will go through setting up the Club Station for Field day.

## **Here's the plan in a nut-shell:**

Let's start by describing the planning in process for the Club field station.

The CARC location has been the same for decades. It's located in a cherry orchard at the Kessel Farm high in the hills off of West Bay in Leelanau County between T.C. and Suttons Bay. There, as you see in the photo, stations can be spaced apart, to reduce RF and audio noise interference, yet close enough to be able to run back and forth to the Mess Tent and general facilities

The plan for FD2021 is just like last year. Our normal set-up is one SSB station each on 20, 40 and 15 meter bands.



There has been one on CW that uses all the bands as needed. We have one VHF solar station operated in the past by Joe, W8TVT and this year by Tom Olman, KE8CVM, . In the last few years we've also had one station running FT8. Power is supplied by club generators. That's about as many stations we can fit in the required area. Additional operators are welcome and the operators switch around or log for the active operator. Everyone supplies their own antenna. Food is provided by the club and prepared by Glen Johnson, K8SGZ.

That's the way we've been setting up Field Day in past years, and we tend to stick with it as we have worked out most of the bugs that bother some organizations.

This will be our basic plan for 2021, however there are on-going discussions about additional station set-ups that are just beginning and far from decided, such as setting two CW stations- one working 15 and 80 meters, the other working 40 and 20 meters. Possibly one working VHF, 6 & 2 meters from a hill-top. We have a lot of planning to do to make those ideas happen, and also avoid RF conflicts and interference.

**Field Day** operation is a chance to show-case Amateur Radio in action, so everyone is not just invited to come to the site, but encouraged to come to see ham radio working. The general public is welcomed to walk around, listen and see everything. Licensed amateurs are very welcome as well, and with a little planning participate as a logger, extra set of ears, or possibly operate a station for a stretch to give operators a break.

**Field Day is more than the Club Operation, you are free to operate your own station from home, car, rv, or the field.** Field Day is to demonstrate the ability to operate if the grid goes down or if you need to be in a new location. But working from home is also good practice.

The key point of this article is to start you thinking about what you want to do, what you can do, and what you need before Field Day to make that happen. Here is a check-list to start your thought process. You can add to it, scratch out things that don't pertain to you, and from it, create your own check-list that works for you. Besides this newsletter list, there is a link to a Word document that you can edit-to make your own checklist.

[Download Checklist Here](#)

# CHERRYLAND AMATEUR RADIO CLUB

## Amateur Radio Workshop

### Schedule of Events for April, 2021

#### MI QSO PARTY Workshop

Tuesday, April 13 – 7:00 PM

ZOOM: 271957716

**Objective:** To talk about and answer any questions about participating in the on-air contest- Michigan QSO Party.

MIQSOP is Saturday April 17.

We will talk about:

- Time of the contest
- Bands
- Modes
- Contest Exchange
- Logging
- Club Affiliation
- More

We will also discuss experiences we've had in the contest, what to expect and sharing handy hints to make the best of it and have fun in the process.

No prerequisites to join – any and all are welcomed.

#### License Prep Workshops

Wednesday, April 21 – 7:00 PM

Wednesday, April 28 – 7:00 PM

Zoom: 271957716

**Objective:** To give those studying for exams an opportunity to join with other hams, others who are studying, to discuss any question that is bothersome, or any concept that might be explained. Licensed hams are available to provide background and perhaps another way to look at things. These will also share with you experiences and hints or things that may make your test taking go smoother for you.

This workshop is voluntary, you do not need to be a member of CARC to be in the workshop.

We may review some questions and answers for clarity, but this is not a class per-se and we will not likely cover all subjects. The purpose again, is to help people with topics they find difficult.

This is our third workshop and we have found it to be helpful.

#### New Ham Workshop

Saturday, May 15 – 1:00 PM

Civic Center Pavilion, TC  
(if bad weather- zoom)

**Objective:** To give newly licensed hams, and those who have passed their test on May 8, a chance to get on the air, discuss the important things to know, what to expect and how to start a contact on the radio, how to stay with it and how to end a contact.

We will also review key things you need to know about your radio, repeaters, about simplex and operating in general on amateur radio.

We also have a series of handouts and resources that you will find helpful. You will leave the workshop with a clear plan and experience for speaking on-air and connecting with other hams.

There will be more information and details in the MAY Cherry Juice Newsletter and by email in early May.



### NEXT VE EXAM

May 8, 2021 at 1:00 PM

The tests for all license levels, from Technician, General and Extra, will be given at the New Approaches Center, 5123 N Royal Dr, Traverse City, MI 49684. To assure your seat or for more information please contact: Hope, AA8SN at [AA8SN@arrrl.net](mailto:AA8SN@arrrl.net) or 231-218-0622.

## APRIL 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	29	30	31	1	2	3
<b>SMASH Net</b> 3.935 MHz 9:00 AM	<b>TBARG &amp; MESH</b> Net 146.86 MHz 8:00 PM	<b>Project Night-</b> Zoom 7:00 271957716		<b>Round Table</b> Net 146.86 MHz 7:00 PM		
4	5	6	7	8	9	10
<b>SMASH Net</b> 3.935 MHz 9:00 AM	<b>TBARG &amp; MESH</b> Net 146.86 MHz 8:00 PM	<b>Board Meeting</b> 7:00 PM	 <b>SkyWarn Net Training</b> 146.86 MHz 8:00 PM	<b>Round Table</b> Net 146.86 MHz 7:00 PM		
11	12	13	14	15	16	17
<b>SMASH Net</b> 3.935 MHz 9:00 AM	<b>TBARG &amp; MESH</b> Net 146.86 MHz 8:00 PM	<b>Project Night-</b> Zoom 7:00 271957716 <b>MIQSOP Preparation Workshop</b>		<b>Round Table</b> Net 146.86 MHz 7:00 PM		<b>CONTEST</b>  <b>Michigan QSO PARTY</b>
18	19	20	21	22	23	24
<b>SMASH Net</b> 3.935 MHz 9:00 AM  <b>IARU World Amateur Radio Day QSO Party</b>	<b>TBARG &amp; MESH</b> Net 146.86 MHz 8:00 PM	<b>Club Meeting</b> In Person at Salvation Army HQ 7:00 pm <b>Presentation Time Machine</b>	<b>HAM EXAM Workshop</b> 7:00 - 9:00 PM on Zoom 271957716	<b>Round Table</b> Net 146.86 MHz 7:00 PM		
25	26	27	28	29	30	May 1
<b>SMASH Net</b> 3.935 MHz 9:00 AM	<b>TBARG &amp; MESH</b> Net 146.86 MHz 8:00 PM	<b>Project Night-</b> Zoom 7:00 271957716	<b>HAM EXAM Workshop</b> 7:00 - 9:00 PM on Zoom 271957716	<b>Round Table</b> Net 146.86 MHz 7:00 PM		
<b>VE EXAM- MAY 8, 2021</b>						

# FOR SALE BY OWNER

## VHF Rigs & Ants by Joe Novak, W8TVT

Contact Joe: jjnovakw8tvt@gmail.com

Or Scott, WX1J- Prices are referenced 10% below e-bay.

### Package 1: \$125.00



Motorola Moxy, w/ Mic & Astron RS-12A PS  
Radio set 442.5 MHz W8TCM Repeater

### Package 2: \$110.00



Motorola Spectra, w/ Mic & Astron SL-114M PS

### Package3: \$120.00



Kenwood TK-762G, w/ Mic & Astron RS-12M PS

W8TVT Antenna prices are referenced 10% below QTH.com



\$250.00

Mosley TA-33  
Antenna, In its Box  
Not assembled Assy  
instructions included



\$325.00

Cushcraft A3S  
Antenna, In its Box  
Not assembled. Assy  
instructions included

## HF Rig by Ken Musson, W8QKP

Contact Ken: kmusson@charter.net



Kenwood TS-430S HF All Mode XCVR



Kenwood PS-53 Power Supply



Kenwood MC-60 Desk Mic

**Note: Photos on this page are illustrations of the model for sale, not of the actual product being offered.**



# SKYWARN

With Spring, the Skywarn season returns. Skywarn Training will be on the First Wednesday of each month beginning April 7, at 8:00 pm on the W8TCM repeater at 146.86 MHz (-) and PL of 114.8.

In addition, the **National Weather Service** in Gaylord, will hold **Storm Spotter's Training** on-line this year. The dates have been announced as follows:

**April 20 – 1:30 pm – 3:30 pm**

**April 28 – 6:30 pm – 8:30 pm**

**May 4 – 6:30 pm – 8:30 pm**

**May 10 – 6:30 pm – 8:30 pm**

### Register Here:

<https://www.weather.gov/apx/Virtual SkyWarn Spotter Training>

Please monitor NWS Website for changes or announcements.

<https://www.weather.gov/SKYWARN>

For further information about Skywarn activity in this area, contact Toby Way, KC8VSU.

## HAVE YOU CHECKED IN

### There's a new net in town!

And it's growing in popularity and the number of participants. The Net is the Thursday Night – 7:00 PM Round-Table Net –

It's Different!

### Cherryland Amateur Radio Club

## ROUNDTABLE NET

Interesting Technical & Operating Topics Share, Help, Laugh & More

146.86 MHz Repeater  
W8TCM Traverse City



Echolink at  
Node 824031  
W8TCM-R

**7:00 PM Every Thursday**

This net is growing in popularity! Join in:



It's a technical focus, general discussion about topics we all relate to in ham radio. We've discussed Antennas, Grounding, Digital Modes, Radio Control Hobbies, GMRS, FRS, and a whole bunch of topics - We keep it interesting!

Ask a question- Share an experience, Provide an answer - Just be-there.

**Thursday Night – 146.86 MHz  
W8TCM repeater. 7:00 PM**

## Coming Highlights

### April

Board Meeting	APR 6
Skywarn Training Net	APR 7
Project Nights	APR 13, 20
MI QSO Party	APR 17
License Exam Prep	APR 21
Club Meeting	APR 27
\ Spectrum Time Machine	
License Exam Prep	APR 28

### May

Board Meeting	MAY 4
Skywarn Training Net	MAY 5
VE EXAM-1:00 PM	MAY 8
Project Nights	MAY 11,18
Radio Workshop	MAY 15
Club Meeting	MAY 25

### June

Board Meeting	JUNE 1
Skywarn Training Net	JUNE 2
Project Nights	JUNE 8,15
Club Meeting	JUNE 22
Field Day - Contest	JUNE 26-27
Project Nights	JUNE 29

## CHERRYLAND AMATEUR RADIO CLUB

President	Ernie, K8RCT		
Vice President	Glen, K8SGZ		
Treasurer	Ward, N8WK		
Recording Secretary	Hope, AA8SN	Board Member	Mark, KC8ZAP
Communicating Secretary	Joe, KC8RLU	Board Member	Drake, N8DMH
Cherry Juice Editor	Joe, N8CN	Board Member	Scott, WX1J