

# The Hertzian Herald



## Off The Kuf:



By Mike – N8KUF

Now that it's May, it would appear that the often-discussed April Showers phenomenon (at least, the SE Michigan version) has been holding true to expectations. It does seem a bit odd to me that the enjoyment of observing (in awe) the beauty of the leaves unfolding, the daffodils blooming, the crocuses crocussing, the flowering shrubs shrubbing (or whatever they do), and the greening of the region in general ..... has been dampened by the realization that the observations are too often occurring during the hours spent atop the tractor while cutting grass and/or weeds .... (and it's only just begun!!!). I often find myself lost in peaceful thoughts even though the weather may not be perfect. If the sun is out and temperatures are at least warm enough to get away with just a sweatshirt (even with the wind blasting), I'm content. How ironic it seems getting hit in the face by a blast of 30 mile per hour wind whipped water spray that was kicked up (INTO the wind of course) by the tractor blades while accidentally mowing through standing water in the yard while absent mindedly staring off at the beauty of nature.

If you were able to join us at the April MCRCA meeting, you saw several videos related to Foxhunting (hidden transmitter hunting). I hope that you found these videos to be both educational and entertaining. The MCRCA has not held a foxhunt in several years, and I am excited to resurrect the series of events this year.

In the spirit of Amateur Radio Direction Finding (ARDF), a foxhunt antenna construction session was hosted by the MCRCA. Your club supplied materials and guidance needed to construct a tape measure Yagi antenna (popularly used for foxhunting). The construction session produced several great looking antennas (see pictures and article elsewhere). This event was held in conjunction with opening of the club's comm center at the Red Cross in order to provide members an opportunity to operate in the Michigan QSO Party using the club HF radio under the guidance of an Extra Class member. Participants were able to garner a respectable number of points on behalf of the MCRCA. Thanks to everyone that was able to turn out for the combined event.

Please join us for the upcoming Active Attenuator construction session. The event is scheduled for Saturday June 8<sup>th</sup> at 0900 at the Red Cross. Watch for further details, but you will be given an opportunity to purchase (at discounted club pricing) an attenuator kit and to put it together at the session. For those unable to attend there will be additional opportunity in conjunction with the MCRCA Field Day Event.

As you are reading this issue, Foxhunt #1 is history. A number of folks came together as teams intent on hunting down the wily fox. Rumor has it that our hunt coordinator (Fred K8EBI) told everyone at the pre-hunt brief to "BE VEVY VEVY QWIET – WE'RE GOING WABBIT HUNTING" (although I'm sure he meant FOX HUNTING).

As the St. Mary's chimes sounded 0900, a number of teams set off in search of the WASKEWY WABBIT (oops, I mean Fox). The winning team was able to locate the critter (played by yours truly) using just 6.1 miles traveled and 0:55 time on the clock. Participants then gathered at a local restaurant for lunch and a rehashing of the morning's event. Congratulations to the winning team of **Fred K8EBI and Brenda KB8KQC** – nicely done!! (AND – they managed to find the fox on a frequency TOTALLY DIFFERENT than the one used for the hunt — GO FIGURE)).

(Continued Page 3)

### Club Officers

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## MCRCA Minutes:

**April 18, 2019**

Meeting called to order at 7:30 pm, by Mike Karmol N8KUF.

Pledge of Allegiance

Introductions: One guest, Jordan, Dave N8TAT's Grandson.

PROGRAM: Foxhunt Videos and training.

DOOR PRIZE DRAWING: Brenda KB8KQC, won the gift certificate.

50/50: Rodney KD8ZNX donated his winnings to the scholarship fund.

MINUTES: Motion by Dale WA8EFK, supported by Tom KG8P, to approve as written in the Herald. Approved.

TREASURER REPORT: Motion by Paul W8PI, supported by Wes KC8SKP, to approve the treasurer's report as passed out to the membership. Approved.

HAMFEST: Fred KA8EBI – Vendor letters were mailed out, fliers are being passed out at local hamfests, we have 41 tables reserved so far, a little down from last year at this time. Phyllis Blohm will be the food vendor again this year. We have only the May meeting left before the hamfest, the June meeting is after. The only jobs that need filling are ticket sellers. If you can work an hour or so selling tickets please contact Rodney KD8ZNX ASAP to get on his list. Rodney has volunteered to take over ticket sales chairman. John N8DXR will be our PR person and make contact with each vendor and trunk sales person to thank them for coming and check if there is anything we can do to make this event any better. Everything is coming along very well and we hope to have another wonderful hamfest.

DX REPORT: Tom KG8P – There is some DX out there yet even though we are at the bottom of the sunspot cycle. ^m has been seeing some activity and FT8 has been a good 20m band indicator. American Samoa 5W has been active with several stations. Tom was giving away a heavy duty MFJ balcony bracket that could be adapted into a 6m antenna by adding a 54" radial on each side.

FUTURE PROGRAMS: May meeting will be a video since everyone will be in Dayton. June meeting will be 12VDC Distribution PowerPoint. The July Program will be - Ask Dave -grounding. The August Program will be - Ask Dave -SWR.

FOXHUNT: Our first foxhunt will be Saturday, May 11, 2019 starting at 9 am at the EMD on Raisinville RD.

TESTING: Next session - Sat. April 20, 2019. Be there at 8:45 AM with 2 IDs and \$14.

ARPSC: Rodney KD8ZNX – Next meeting will be Thursday, May 2, 2019, at the EMD.

ARRL: Dale WA8EFK – Thursday, April 18, is World Amateur Radio Day (WARD), this year marking the 94th anniversary of the International Amateur Radio Union (IARU), founded in Paris in 1925. Each year, WARD celebrates Amateur Radio's contribution to society. Groups in the US and around the world will celebrate WARD 2019 with on-the-air activities. – Hamvention and ARRL National Convention May 17 – 19. Entry will be free on Sunday this year; normal cost is \$22 for the 3 days. – N9NB Dr. Ted Rappaport, wrote about attacking digital radio because they are encrypted reddit and claims proprietary digital modes raise national security concerns. – Pactor 3 or 4 winlink can include all digital modes.

RRRA: Mike N8KUF – Ottawa Lake still being rebuilt but the rest of the repeaters are all OK. – Annual meeting will be held Saturday May 4, 2019, 9 AM at the Red Cross.

OLD BUSINESS: MI QSO Party April 20th – Noon to Midnight – Open Comm Center

NEW BUSINESS: None	K8EBI Fred	KB8KQC Brenda	KA8PQH Neil
	KC8SKP Wes	KD8ZNX Rodney	KD8ZUI Robert
ANOUNCEMENTS:None	KE8DDM Dalton	W8SMB Scott	KE8KNZ Tom
	KG8P Tom	N8DXR John	N8KUF Mike
ADJOURNED: 8:47 pm	N8NYP Terry	N8RWI John	N8TAT Dave
	W8PI Paul	WA8EFK Dale	
ATTENDANCE: 19	Jordan LaFountain	Brian Tennyson	

## Committees

### Classes

### Club Station

Wes Busdiecker KC8SKP

### DX Net

### Field Day

Jeff Breitner KA8NCR

### Finance

Paul Trouten W8PI (chair)

Fred VanDaele KA8EBI

Dale Williams WA8EFK

### HamFest

Fred VanDaele KA8EBI

### Hertzian Herald

Fred VanDaele KA8EBI

### Historian

Paul W8PI

### Public Relations

Jeff Breitner KA8NCR

### Scholarship

Fred VanDaele KA8EBI

### School Liaison

open

### Programs

open

### Membership

Terry Kolton N8NYP

n8nyp@arrl.net

### Planning

open

### Property Custodian

open

The fox was found at Custer Elementary School very near the Custer HS Soccer Field. The location according to google earth was 3.33 miles (as the sober crow flies) from the EMD start location. Shortest possible route (via established public roadways) according to google maps was 5.3 miles

STATS:

Place	Team	Members	Distance	Time	SCORE
---	FOX	N8KUF	---	---	3 pts
1 <sup>st</sup>	TEAM1	K8EBI, KB8KQC	6.1	0:55	7 pts each
2 <sup>nd</sup>	TEAM4	W8PI, W8SMB	6.2	0:48	4 pts each
3 <sup>rd</sup>	TEAM3	WA8EFK, N8NYP	9.0	0:45	3 pts each
4 <sup>th</sup>	TEAM2	N8DXR, KD8ZNZ	9.8	1:15	2 pts each
DNF	ARPSC/ NCS	KE8BYC, N8RWI	---	---	1 pt each

I'll look forward to meeting you at the next hunt to be held on July 13<sup>th</sup>. Please look to future issues of the newsletter for tabulation of points earned through the remaining hunt season

At the May Meeting, in spite of many having set off for the great Hamvention, we will gather to take care of business and to enjoy a general interest (TBD) ham radio video.

REMEMBER:

all tomatoes MUST be checked at the door and all who are willing to have a good time are welcome. OH, by the way, – feel free to bring a friend. (Friends are admitted free of charge)

I'll see YOU at the meeting,

Mike – N8KUF, President - MCRCA

## Antenna Build Saturday

Rodney Haddix, KD8ZNZ, arrived at the Red Cross building about forty minutes before me. He was the lucky one to be the first to tackle a new project. In this case we were going to build two or three antennas so the first is the toughest. Dalton Daggett, KE8DDM, arrived shortly after me.

Now, when you have multiple people helping on a project, it can go a lot easier. Sort of like an assembly line. Mike Karmol, N8KUF, was our leader. The three of us decided on building our directional antennas with conventional PVC pipe & fittings. Fred VanDaele, K8EBI, along with Jeff Peters, K9JP, and Mark Wheeler, W8MCW, decided to go with the 3D printed parts for their builds.



We didn't have to work with any formulas or equations. Just some simple math. Very simple project. The antennas had BNC fittings installed.

So, when the next build is scheduled, take advantage of it.

Terry N8NYP



## The FT4 Protocol for Digital Contesting

Joe Taylor, K1JT, Steve Franke, K9AN, and Bill Somerville, G4WJS

April 22, 2019

**Introduction:** FT4 is an experimental digital mode designed specifically for radio contesting. Like FT8, it uses fixed-length transmissions, structured messages with formats optimized for minimal QSOs, and strong forward error correction. T/R sequences are 6 seconds long, so FT4 is 2.5 × faster than FT8 and about the same speed as RTTY for radio contesting. FT4 can work with signals 10 dB weaker than needed for RTTY, while using much less bandwidth.

**Basic parameters:** FT4 message formats are the same as those in FT8 and encoded with the same (174,91) low-density parity check code. Transmissions last for 4.48 s, compared to 12.64 s for FT8. Modulation uses 4-tone frequency-shift keying at approximately 23.4 baud, with tones separated by the baud rate. The occupied bandwidth (that containing 99% of transmitted power) is 90 Hz. Threshold sensitivity for 50% decoding probability is  $S/N = -16.4$  dB, measured in the standard 2500 Hz reference noise bandwidth. A priori (AP) decoding can push threshold sensitivity down to  $-18$  dB or better.

**Operation:** Aside from its much shorter T/R sequences, FT4 behaves essentially the same way as FT8. One new on-screen control is available for FT4 operation, a button labeled **Best S+P**, just below the **Call 1st** checkbox. Clicking this button during an Rx cycle arms the program to examine all CQ messages decoded at the end of the 6-second Rx sequence. The program will select the best potential QSO partner (from a contesting perspective), and treat it as if you had double-clicked on that line of decoded text. Here “best potential QSO partner” means “New Multiplier” (1st priority) or “New Call on Band” (2nd priority). “New Multiplier” is currently interpreted to mean “New DXCC”; a more broadly defined multiplier category (for the ARRL RTTY Roundup rules) will be implemented soon. We may also provide additional priority rankings, for example “New Grid on Band” (useful for North American VHF contests), sorting by signal strength, etc.

For keyboard control of transmitted messages, check the box **Alternate F1–F6 bindings** on the **Settings | General** tab. In typical contest-style operation you can then hit function key **F1** to solicit a QSO by sending CQ. To respond to a CQ and send your contest exchange, double-click on the decoded message. Alternatively, you can click on **Best S+P** and let the selection algorithm choose a station to call. **Auto Seq** and **Call 1st** checkboxes behave as in FT8, and thus the remainder of a minimal QSO can continue without further operator action. Function keys **F2 – F5** may be used to send messages displayed in entry fields for Tx2 – Tx5 on tab 1, at bottom right of the main window. Function key **F6** toggles the checked status of **Call 1st**, and key combination **Alt+B** can be used to toggle the armed status of **Best S+P**.

FT4 is presently configured so that a station operating in Search-and-Pounce (“S+P”) mode logs a QSO when RR73 is transmitted, and the CQing (“Run”) station logs a QSO when RR73 is received. Like FT8, FT4 makes little distinction between an S+P station and a Run station. An operator can switch easily and frequently between these two ways of initiating QSOs, and contesting skill will depend on optimizing these and many other operating decisions. With a steady stream of available stations to work, single radio QSO rates well above 100/hour are possible using FT4.

**Transmitted signal:** FT4 uses a modulation technique known as Gaussian frequency shift keying, or GFSK. The generated audio waveform consists of 105 symbols (tones) sent in sequence at one of four frequencies. The encoded series of distinct tones for part of a transmission might originally look like the upper (red) curve in Figure 2. However, in FT4 the sequence of frequencies is smoothed by convolution with a Gaussian function before being sent to the software modulator. The blue curve shows the corresponding smoothed sequence of frequencies actually sent to the modulator. The transmitted sequence no longer has any stepwise discontinuities.

Differences between the red and blue curves seem rather small, but spectra of the resulting audio waveforms are remarkably different. Figure 3 shows spectra for an FT4 signal (blue) and a standard continuous-phase FSK signal (red) for the same encoded bit sequence. The GFSK spectrum has steep skirts, occupying a bandwidth of only 75 Hz at  $-6$  dB, 200 Hz at  $-60$  dB, and 260 Hz at  $-80$  dB. No additional filtering is applied to the audio waveforms.

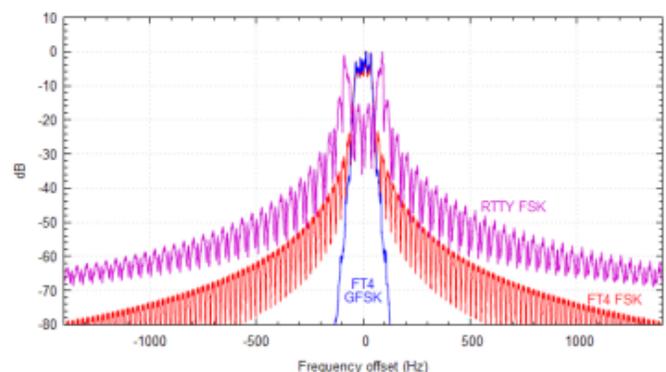


Fig 3. — Spectra of an FT4 signal transmitted with GFSK (blue), FT4 with FSK (red), and RTTY with continuous-phase FSK (purple).

## Member Profile

W. Paul Trouten W8PI

My interest in radio started at a fairly early age. When I was six/seven years old I lived next door to my uncle's radio/TV store. Being in a rural area I spent my spare time playing around his shop. It was very interesting watching him repairing radios and early TV sets. He even took me along on service calls to his customers. It was fun digging through the trash can in the store for old components that were no longer of use. I pretended to make my own radios.

As I got a little older, he helped me make real radio equipment. I had a crystal set made with coils and a tuning capacitor. When I got that working the parts were used to make a regenerative tuner. By the time I was nine I was making power supplies out of old TV set transformers. These were up to 400 VDC or more. Uncle Rob made sure I knew what places not put my fingers or other things. Not as safe as radio equipment today.



I moved to Michigan when I was 10 years old. I got to bring most of my radio parts so I could keep playing around with them. By this time, I could read schematic diagrams and attempted to build better receivers out of old radios found in the trash. Many had short wave bands on them and I took an interest in listening to foreign broadcast stations and WWV time signals. There was this other signal I heard but could not make much sense out of. They were CW (code) transmissions.

In order to hear code, the receiver needed a BFO (beat frequency oscillator). Of course, I did not have this kind of device nor did I know how to make one. By this time, I was visiting radio shops around Monroe and went to Herkimer's Radio Service. Hazen Herkimer (W8DWL) was a crabby old man but was very willing to help young people (and old ones too) to learn radio and Morse code. Herk showed me how to take a piece of wire and make a feed back loop in the IF of my short-wave radio and would be able to copy CW. Along with Herk and a year in Boy Scouts I learned basic Morse code. About this time I started to attend meeting of the MCRCA, meetings were held in the basement squad room of the Monroe Police Department on Wednesday evenings. The club also had code practice sessions before the meetings; all the beginners sent and received code to each other.

Back in the 50's the novice license was new but you needed to copy/send code at 5 WPM and take a basic test on electronic theory. Although you could read a book and get most of the information, I was fortunate to have an Elmer. He was Joe Beck, W8OHI. Joe was a fireman and had several days off each week. So, I went to his home every free afternoon after school and he would send me code and we went over the license manual. After many weeks Joe gave me my novice license test. I passed and became KN8MFH in 1958.

At that time the novice license was only good for one year and expired. It also only allowed you to operate CW in limited sections of the bands at low power levels. If you wanted to stay on the air you would have to advance to the general class license. The General required 13 WPM code and a much more advanced electronics test. Being a novice and having a simple one tube transmitter attached to a piece of wire hanging out of my bedroom window I could work other novice stations. This got my code speed up to the 13 WPM needed for the general test.

As I was only 13 at the time, I had an adult novice take me to the FCC office in Detroit to take the general test. I passed but my adult friend did not. I was very happy that I passed the test and went home and got on the air on phone for the first time. My first phone contact was with Bill Hunt, K8DTE, another teenager who had his general. I kept up with the radio during high school getting on the air with the school ham station. Being the only ham in school I could use the equipment anytime. Of course, now I am a teenager and other interests came before ham radio. girls, cars, all that kind of stuff, and radio began to take the back seat. After five years my license expired and I forgot to renew it within the time window, so I had to take the General test over again. The test was no problem but I was issued a new callsign, WA8RRT. I used this call for many years working on six-meter AM with the AREC and the Monday night nets. By this time, I was working full time repairing TV sets for the local RCA TV dealer.

(Continued next page)

As the years progressed, I took the FCC Commercial License test and obtained my First Class Radio Telephone license and began working for the son of my old Elmer at Herkimer Radio. Although this was a good job, I wanted to travel more than just around Monroe county. I was fortunate to have a good friend, WA8GGF, working for a microwave component company in the Detroit area. He helped me get an interview with his company and was hired as a Field Engineer for the eastern U.S. Now I was traveling, had a good job, but not doing much HF radio, mostly two-meter simplex.

My job required me to move to Arizona in 1976 so I packed up my radio equipment and set off to the desert. Several of the engineers in my company were hams and avid DXer's. So, I joined the Central Arizona DX Association. This got me going with DX and really got me back into radio. I used my WA8RRT call for a year or so while in Arizona but decided that I needed my Extra class license, now that I was chasing DX. In Arizona at that time the FCC only had testing twice a year, making it difficult to take the test. While on a business trip I visited the FCC office in St. Paul, MN took my advanced and extra tests and received the call KN7I.

My career caused me to move several times, from Arizona to Chicago, then Chicago to Santa Clara, CA. In Chicago I was on the air on HF still chasing DX and also with satellite communications. Satellite was fun especially as I was a new call on the air, everyone wanted to work the new guy. In California I lived in a town house and it was hard to have HF radio so most of my operating there was two meter/UHF repeaters.

One more job change and the company wanted me to move east for them. I said if Michigan was east enough then I would take the move. They accepted and I moved to Temperance.

The home has a little property so I was able to get HF antennas strung up and the radios still worked, so back to DXing. Having a 7 call in Michigan was a bit of a pain so I got my current callsign W8PI. You can find me looking for DX, working state QSO parties, ARRL and CQ contests, mostly on CW but I do operate phone occasionally. I also look for 6-meter openings and have 48 of the 50 states and about 50 countries along with VUCC on six.

I have been licensed for 61 years, belong to the QCWA, ARRL Maxim Society, DXCC, WAS, WAC, among other various state contesting awards.

**CQ, CQ, CQ** is just our way of saying is anyone out there? But in that phrase is a fundamental question that defines being human, "Am I alone?" So fundamental to our spirit that we broadcast it via a radio telescope as a grand CQ to the universe. We even sent a message in a bottle, well a gold-plated laser disk and placard on a used up planetary probe, out to interstellar space.

"Is anyone out there? Are you alone too? You don't have to be? Talk with me – form community."

I think the essence of ham radio is connection and community; whether it is via radio or at the local club meeting, but more importantly, it is to reach out across our own local and regional confines and thinking to touch a different culture, belief, or better to find out we are all the same. To form an open and supportive community not restricted by mental, philosophical, or physical boundaries.

To me it is important, and I hope to you, to spend less of my radio time on the fifteen- to sixty-second contact in favor of having a real conversation. To go to the uncharted territory beyond, "What kind of radio and antenna do you have," into a deeper connection. Scary stuff, takes us all out of our comfort zones, doesn't it? But isn't it time to reach out in a more meaningful way around our radio campfires?

Is anyone out there? If you are, welcome, you are among friends. Join us, tell stories, share your ideas, make a joke, share yourself and we will do the same. With a radio, we can choose never to feel isolated or to isolate others.

73, W7DAO

## DXCC Most Wanted

The 'DXCC Most Wanted' entities list has been updated on ClubLog as of May 5th. The list contains 340 entities.

The following are the top 10 entities:

1. P5 DPRK (North Korea)
2. 3Y/B Bouvet Island
3. FT5/W Crozet Island
4. BS7H Scarborough Reef
5. CE0X San Felix Islands
6. BV9P Pratas Island
7. KH7K Kure Island
8. KH3 Johnston Island
9. FT5/X Kerguelen Island
10. 3Y/P Peter 1 Island

No changes this month.

The complete "DXCC Most Wanted" entities list is available at:

<https://secure.clublog.org/mostwanted.php>



The American Radio Relay League's round-up of the forthcoming week's DX activity on the amateur radio bands

This week's bulletin was made possible with information provided by The Daily DX, The OPDX Bulletin, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

**FIJI, 3D2.** Oleh, KD7WPJ will be QRV as 3D2/KD7WPJ from Viti Levu Island, IOTA OC-016, from May 11 to 16. Activity will be on 40 to 12 meters using CW and SSB. QSL to home call.

**MONTENEGRO, 4O.** Oskar, LB9N is QRV as 4O/LB9N from Igalo until May 11. QSL to home call.

**BOLIVIA, CP.** Lance, W7GJ is QRV as CP1GJ from Copacabana until May 16. This is a 6 meter EME operation using SSB or FT8. He monitors 50183 kHz. QSL direct to home call.

**KYRGYZSTAN, EX.** Special event station EX26Y is QRV from Cholpon-Ata and then Bishkek until May 15 to celebrate the founding of Kyrgyzstan's national amateur radio society 26 years ago. Activity is on 160 to 10 meters using CW, SSB and various digital modes. QSL direct to EX7DI.

**ENGLAND, G.** Members of the Cray Valley Radio Society will be QRV as GB6MW from Meopham Windmill during Mills On The Air. QSL via LoTW.

**JERSEY, GJ.** Operators Marc, PD7YY, Marcel, PG8M and Lars, PH0NO are QRV as MJ/PG8M/p and MJ/PH0NO/p until May 12. This is a World-Wide Flora and Fauna expedition activating various nature reserves on the island. Activity is on 80 to 2 meters using CW and SSB. QSL via operators' instructions.

**ST. LUCIA, J6.** Bill, K9HZ is QRV as J68HZ from Soufriere until May 13. Activity is on 160 to 2 meters using CW, AM, SSB and RTTY. QSL direct to home call.

**JAPAN, JA.** Kenji, JA4GXS will be QRV as JA4GXS/1 from Hachijo-jima, IOTAAS-043, from May 11 to 13. Activity will be on 40, 30 and 20 meters using CW, SSB and FT8. QSL to home call.

**ALASKA, KL.** Mike, K9AJ and Bruce, KD6WW are QRV as K7Y from Khantaak Island, IOTA NA-250, until May 13. Activity is on 40, 30, 20 and 17 meters using CW, with some SSB and FT8, with two stations active. This is the first activation of IOTA NA-250. QSL via K9AJ.

**LITHUANIA, LY.** Special event station LY15EU is active until May 26 to celebrate the 15th anniversary of Lithuania's membership in the European Union. QSL via LY2QT.

**SLOVAK REPUBLIC, OM.** Special event stations OM2019IIHF and OM83IHC are QRV until May 31 during the 83rd Ice Hockey World Championship being held in Slovakia. QSL via OM2FY.

**NETHERLANDS, PA.** Mark, PD0ME, Frank, PD5JFK and Bernard, PB7Z are QRV as PB19MILL until May 13 from the De Eendracht Windmill in Gieterveen during Mills On The Air. Activity is with three stations on the HF bands, as well as 6 and 2 meters, and 70 centimeters. QSL via bureau.

**GREECE, SV.** Jacques, F6HMJ will be QRV as SV8/F6HMJ from Ios Island, IOTA EU-067, from May 14 to 28. Activity will be holiday style on 80 to 10 meters using CW and SSB. QSL to home call.

**CORSICA, TK.** Martin, DB4BJ is QRV as TK/DB4BJ until May 17. Activity is on 60 to 20 meters using mostly FT8. QSL to home call.

**VIET NAM, XV.** Tom, DL7BO will be QRV as XV9BO from Mui Ne from May 13 to 19. Activity will be on 160 to 10 meters using CW, SSB, RTTY and FT8. QSL to home call.

**INDONESIA, YB.** Special event station 8G248G will be QRV on May 11 and 12 to celebrate the 248th anniversary of Gianyar City. Activity will be on 80 and 40 meters. QSL via operators' instructions.

**THIS WEEKEND ON THE RADIO.** The CQ-M International DX Contest, NCCC RTTY Sprint, Mills on the Air, NCCC CW Sprint, VOLTA World Wide RTTY Contest, SKCC Weekend CW Sprintathon, Arkansas QSO Party, FISTS Spring Unlimited Sprint, 50 MHz Spring Sprint and the WAB 7 MHz Phone/CW are all on tap for this weekend.

The 4 States QRP Group Second Sunday Sprint and RSGB 80-Meter Club SSB Championship are scheduled for May 13.

The CWops Mini-CWT Test and Phone Fray are scheduled for May 15.

The Canadian National Parks on the Air, CNPOTA, operating event runs for the entire year of 2019, with special stations active from Canada's parks and historic sites.

Please see May 2019 QST, page 84, and the ARRL and WA7BNM Contest Web Sites for details.

## Amateur Radio Examinations Monroe, MI

Monroe County Radio Communications Association Amateur Radio examinations are held the 3<sup>rd</sup> Saturday of every even numbered month at:

**American Red Cross Chapter Bldg.**  
1645 North Dixie Highway  
Monroe, MI 48161

Walk-ins are always welcome.

### 2019 Schedule:

February 16    April 20  
June 15        August 17  
October 19    December 21

### TESTING BEGINS PROMPTLY AT 9:00 AM

Applicants are expected to have all forms filled out and be ready to take tests at that time. Coffee and doughnuts are available at 8:30 AM. For more information or to make reservations, call Paul Trouten - W8PI at 734-854-2224

### Join us at the next meeting

May 16th at 7:30 pm  
American Red Cross Chapter Bldg.  
1645 North Dixie Highway  
Monroe, MI 48162

### Local Net

**ARPSC Net** - Every Monday evening on '72-Monroe (146.72 Mhz) starting at 8:00pm.

**ARPSC Meeting** first Thursday of every month at the EMD office on Raisinville Rd.. 7:00 PM