

# MERT

Marion County Emergency Radio Team



Marion County Sheriff's Office  
Div. of Emergency Management

## COMMUNICATIONS UPDATE

April 2023

**MERT's primary role is to support all open Evacuation Shelters throughout Marion County during declared Emergency events.** We also support EOC and emergency personnel along with Community Emergency Response Teams (CERT) with voice, image and data communications resources. **"Call MERT.... When all else fails!"**

*Please check the calendar for changes to the meetings scheduled the rest of this year. <https://kg4nxx.com/mert-calendar/>*

**Mark your calendars!**

### **MERT Monthly Meeting**

The next Meeting will be on  
April 16th @ 10:00 am at the  
MCSO EOC (692 NW 30th  
Ave, Ocala, FL 34475).

**See you there!**

### **Moving Forward!**



**Harlan Cook (KN4VRM)**  
**MERT Coordinator**

After 3 months of planning and equipment delivery delays, MERT Members finally started the Tower Re-cable project on March 20th. The teamwork was impressive along each step of the project. Even stripping the old cables off the tower took the entire first day as the wind had tangled the cords, electrical cable and communications cables into a true ball of knots. What a mess!

But five days later, the entire EOC Tower had been re-cabled. I sincerely thank the following Members for all of their time, work and expertise supporting this project in making it a total success:

- 20 – Monday - Kim Shulby (KM4JMZ), Bill Cummings (KC2ZRZ)
- 21 – Tuesday - Gary Neron (KS4TSX), Bill Cummings, Pat Davis (KQ4BRW)
- 22 – Wednesday - Gary Neron, Pat Davis, Bobby Gordon (KM4VCZ), Mike Condon (W9MNC)
- 23 – Thursday – Gary Neron, Gray Moffett (KC3DWY), Bill Sobel (K1WLS)
- 24 – Jonathan Reyes (WP3JJ), Kim Shulby, Gray Moffett

"The broadest, and maybe the most meaningful definition of volunteering:  
Doing more than you have to because you want to, in a cause you consider good." ~Ivan Scheier

A Special Thanks to Bill Gillespie (KW5BG) and Leon Jurczynsyn (K8ZAG) for their work all 5 days plus the pre-planning efforts starting back in January.

While we still have 2 antennas to re-cable which are not on the EOC tower (one HF antenna and one 2 Meter for the Winlink Digipeater), I am pleased to share that we have a majority of the MERT radio stations operational again and fully capable of supporting emergency communications assignments if requested by MCSO Emergency Management.

This was a major project requiring significant planning, equipment/parts research, communications with Time Microwave on proper product selection/procedures, MCSO ordering support and yes, delayed deliveries even before the work started. Most importantly, MERT used processes and materials which are expected to perform at the highest technical levels for at least 20 years.

Now that we are close to the finish line, each MERT Member can be extremely proud of the quality and long-term reliability which was restored to MERT's capabilities in meeting our Mission... **"Call MERT... When all else fails!"**

I am extremely proud of this major accomplishment and congratulate the MERT Members who participated.

HR Cook

### **Surprise – Surprise!**

During the Tower Re-cable Project, MERT Members discovered a few "surprises" to share with everyone.

On the first day, Harlan Cook (KN4VRM) and Bill Cummings (KC2ZRZ) went to work in removing the top dual-band antenna for inspection and testing. They found the unit was wedged in the mounting sleeve and un-moveable as it seemed the aluminum sleeve and antenna base had "welded" themselves together.

Being careful to prevent damage, several methods were tried including the use of a torch to heat the sleeve then tapping on it. The patience (35 minutes) paid off...and the antenna was finally separated.

When the antenna was inspected, they found the results of a lightning strike to the tip. *Surprise, surprise!*



EOC top antenna (Diamond 200) damaged by lightning. MERT had a spare for a quick replacement!

## **MERT Members support the Florida Sheriff's Youth Ranch Fundraiser Rodeo**



**Florida Sheriff's Youth Ranch Fundraiser Rodeo.**

Participants included (L-R). Preston Bowlin, MCSO Director of EM; Stephen Wall (MERT); photo center on horse MC Sheriff Billy Woods; next to him is Bill Davis (husband of Pat Davis); in back is Kraig Pritts (MERT); next to him is Pat Davis (MERT). Others not mentioned are Marion County CERT Community Members.

Doing good has *no boundaries!*

On Feb. 26<sup>th</sup>, three MERT Members joined MCSO officials and other Marion County CERT Members in supporting the Florida Sheriff's Youth Ranch Fundraiser Rodeo.

MERT Members Stephen Wall (KE6YXF), Kraig Pritts (KA2LHO) and Pat Davis (KQ4BRW) with husband Bill, assisted with traffic control and then received a personal tour of the Sheriff's Youth Ranch where young people get another chance at life.

**MERT salutes these Members who volunteered their time for this important event!**

## **MERT Wednesday Check-In's**

"Check-In's" (0900 to 1200 Hrs.)

### **March 1st Meeting** – (8 members)

- ✓ Kraig Pritts (KA2LHO) talked about the MERT20 Special Event Station which will happen April 29<sup>th</sup> from 0800 – 2000 EDT. More MERT members need to sign up at <http://mert20.org/>. We practiced faux radio calls and logging with each other.

### **March 8th Meeting** – (10 members and visitor)

- ✓ Harlan discussed the 3 teams needed for the antenna repairs on the EOC tower. The shifts will be 0900 – 1500 EDT. There was discussion on getting the sprinklers turned off that week, and repairs to the tower lights.
- ✓ Bruce Twiss (KI4NFA) said we need "rough service bulbs" for the tower, and also questioned if we need to get RF power density tests for FCC compliance on the new MCC and the radio room.

**NOTE:** Preston Bowlin, MCSO Director of Emergency Management has approved the addition of a dusk to dawn photocell for the EOC Tower lights. This addition will significantly extend the life of the lights in preventing annual replacements. Additionally, new LED's were purchased having extended life warranties with higher heat and vibration resistance specifications.

- ✓ Kraig and Pat Davis (KQ4BRW) talked about volunteering at the FL Sheriff's Youth Ranch Rodeo in Live Oak. Both CERT and MERT members helped check Coggins on horses and park vehicles. They got a bus tour of the Ranch.
- ✓ Leon Jurczynszyn (K8ZAG) stated that the Yaesu 857 all-band radio in the HF go kit will replace the Icom 7100 in the radio room until the 7100 is repaired.

**NOTE:** With the delayed replacement of one PC for the radio room, MERT was not able to test the IC-7100 for full operation. When it was possible, we learned the USB port had failed, likely when the rest of the PC's and other hardware failed. The IC-7100 has been sent to ICOM Repair in Kent, WA.

- ✓ Harlan will soon be setting up a new Winlink Gateway at his house.
- ✓ Bill Sobel (K1WLS) is still teaching a class for residents in Stone Creek getting their Technician Licenses.

## March 18<sup>th</sup> Monthly Meeting (19 members and guest)

**RF Exposure Analysis**

Radio ICOM IC-7100 Specifications: Output Power: 100 W HF/50 MHz, 50 W VLM/AM, 35 W 430/440MHz

Tarheel II HF Antenna Specifications: 1 dB increase on 20 meters, 3 dB increase on 40 meters, 5 dB increase on 75 meters

Diamond X50 2M/70 cm Antenna Specifications: 2 Meter (144 - 148 MHz) 4.5 dB, 70 cm (440 - 450 MHz) 7.2 dB

Cable: Times Microwave LMR-240 cable used in MCC. Cable lengths vary from 20 ft (internal station) to 50 ft (external station).

**40 Meter**

Frequency: 7.200 MHz

Power: 100 W

Antenna: Diamond X50 2M/70 cm

Distance: 17.000 feet

For an uncalculated assessment: Maximum allowed Power Density (mW/cm²): 11.643, Minimum Safe Distance (feet): 12.000

**2 Meter**

Frequency: 144.000 MHz

Power: 100 W

Antenna: Diamond X50 2M/70 cm

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MERT RF Exposure Analysis – Operations on ALL Bands PASS and meet latest FCC R&R guidelines.



**Contact Harlan Cook if you missed the meeting but would like a copy of the report on "RF Exposure".**

- ✓ Harlan Cook, MERT Coordinator, did training with handouts in sharing how to correctly calculate the RF Exposure at members' own stations using two web resources (see note). He went through the complete process of calculating the safe distances needed for the new Mobile Command Center (MCC) radios/antennas. The calculation show that operations on all bands pass in meeting the latest FCC R&R Guidelines for Amateur Radio operations. A Memo



was sent to Preston Bowlin, MCSO Dir. of EM documenting MERT's compliance to the FCC R&R for MCSO records should any FCC Inspections be conducted.

**Note:** Calculators used can be found at: ARRL.org "RF Exposure Calculator" and QSL.net "Coax Power Loss Calculator".

- ✓ Leon Jurcyszyn demonstrated how to make a "Tape Measure" Yagi antenna that actually works for around \$20. Plus, the antenna had an amazing SWR of just 1.2.

Instructions are available at multiple online locations along with You Tube "How To" videos for different bands of operation. Now, Gigaparts also sells a \$23 tape measure with markings from 2M - 30M for Dipoles and Loops (25ft long). 1/4 Wave Markings are noted for 2m/6m/10m/15m/17m/20m/30m with 1/2 Wave Markings for 2m /6m/10m/15m. Additionally, Fullwave markings for 2m/6m and Loop antennas for 10m/15m/17m/20m/30m! Amazing.....



Leon Jurcyszyn (K8ZAG) shares details on building a "Tape Measure" 2M Yagi. The tape costs \$22.45.

- ✓ Kraig Pritts, MERT Administration Manager (KA2LHO) shared an excellent presentation on the upcoming MERT 20 Special Event Exercise on April 29<sup>th</sup> from 0800 to 2000 EDT.

All MERT Members are encouraged to participate in at least one shift at the EOC to spread the about who we are and what we do when emergencies arise.

Please visit and sign up at: <http://mert20.org/>



Kraig Pritts (KA2LHO) sharing details on the MERT 20 Special Event Exercise.

- ✓ Hayden Kaufman (N2HAY), Marion County ARES Emergency Coordinator, distributed the 2023 Service Denied Exercise Plan. This Exercise replaces the one that should have happened the day Hurricane Ian hit Florida last year. It is



scheduled for April 22<sup>nd</sup> from 0830 - 1130. This drill is open to all EMCOMM interested/involved operators. Signups are at <https://aresmcfl.org/>

- ✓ Dave Welker (W2SRP) Hospital Emergency Team Coordinator (HEC) provided an interesting update on the many recent activities and Exercise HEC had in Feb./March. Dave also wants to organize a special HEC exercise between Advent Hospital and the EOC in the future. MERT supports this and will look forward to more details when available.
- ✓ Steven Wall (KE6YXF) CERT Liaison, shared upcoming CERT activities including the CERT Rodeo in May.
- ✓ Bruce Twiss (KI4NFA) shared a fun story on his search for a new power cable for his phone. He also had a handout on the different types of USB connectors available today.

### March 20<sup>th</sup> – 25<sup>th</sup> MERT EOC Tower Re-Cabling Project

Over the course of the week, workers were Harlan Cook, Mike Condon, Bill Cummings, Pat Davis, Bill Gillespie, Robert Gordon, Sally Gugino, Leon Jurczynsyn, Gray Moffett, Gary Neron, Kim Shulby and Bill Sobel. The work was exhausting but fun because of the camaraderie and friendships. The entire project required almost 340 Hours to complete.

The following photo montage captures some events and activities of this major project.



The beginning – Day One.



Lowering the tower.



Wow, Monday morning was very cold!



EOD, cables and antennas removed.



Corroded connectors/lightning damage.





**Clean Tower - Everything removed EOD 1. Measuring out new cables.**



**Cleaning & prepping antennas.**



**More antenna cleaning.**



**First LMR-400 connectors installed.**



**EOD 2 – Top 3 antennas/cables done!**



**EOD 3 – 5 antennas and cables installed!**



**Day 4 – All antennas and cables replaced.**



**Day 5 – All Members support lowering the tower safely to start the day.**



**Today is “connector day”!**



**EOD 5 - The EOC Tower Re-cable project is completed. All antennas have been removed and inspected for quality (replaced as necessary) with all communications cables replaced. MERT is aiming for this updated to have a 20-year+ life span before any major work is needed again.**

**MERT is now... “Mission Ready” to support the MCSO Division of Emergency Management.**

***“Call MERT... When all else fails!”***



## **MERT20 - Special Event Exercise**

*Ham Radio Operators providing more than two decades of service to the  
Marion County (FL) Emergency Management Division*

On Saturday, April 29, 2023, **MERT** will put their operating skills to a 12-hour on-air test. This exercise, called **MERT20**, will find members operating from the **MERT** Radio Room within the EOC, their personal mobile stations in the parking lot and off the grid using battery powered portable equipment for on-air contacts.

**MERT20** will test our abilities to use all modes of communications available to make contacts with other hams locally, statewide, across the nation and globally throughout the 12-hour event. This special operating event will be promoted to other operators around the world through national ham radio publications including QST and CQ as well as ham radio focused websites and other sources.

Details about the **MERT20** special event exercise can be found the <http://mert20.org> website.

**Sign-ups (**MERT** members only) to operate during this exercise are still open. Please contact Kraig Pritts with any questions.**

For MERT Members....if you are also a CERT Member, your reports on helping your local community group are invited.

**Interested in learning more about MERT?..... Visit**  
**<https://kg4nxx.com/>**