

# MERT

Marion County Emergency Radio Team



Marion County Sheriff's Office  
Division of Emergency Management

## COMMUNICATIONS UPDATE

February 2025

MERT's primary role is to support all open Evacuation Shelters throughout Marion County (FL) during declared Emergency events. We also support the Emergency Operations Center Incident Commander, staff and other EMCOMM groups (CERT, HEC, ARES) with voice, image & data communications locally, statewide and across the U.S.

***"Call MERT... When all else fails!"***

### Monthly Meeting

February 15<sup>th</sup>, 10:00 am.

### All Amateur Radio

Operators are  
Welcomed!

### 2024 was a Record Year... and now Looking Forward to 2025!



Harlan Cook (KN4VRM)  
MERT Coordinator

"The start of a new year often feels like a blank slate: a time to reflect on the past and envision the future. This phenomenon, commonly referred to as the "fresh start effect," plays a significant role in motivating us to take action on our goals and dreams."<sup>1</sup> No matter our age, ***dreams do... lead us to the future!***

MERT's many training exercises and classroom events following the new "Skill Book and New Orientation Guide" along with three hurricane activations in support of the Division of Emergency Management made for a very busy year.

What's that old saying? "*Time flies when you're busy.*" The reason the experts say it is true is when you are cognitively busy, you are focused on each task you are performing, and so you don't have the opportunity to notice the passage of time."

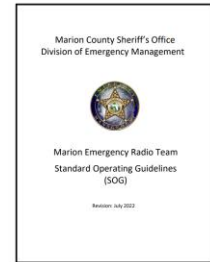
So, in the spirit of wanting to make "*time fly*", MERT will be undertaking several projects early in 2025 including an update to the Standard Operating Guidelines & Concept of Operations (ver. 2022), the school Shelter Inspections/Testing event in mid-March and the "MERT 20" Exercise/Special Event planned for late-April. ***Please join us!***

<sup>1</sup> - Jodi Wellman, MAPP; "Psychology Today"

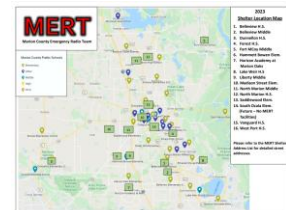
"I don't know what your destiny will be, but one thing I know: the only ones among you who will be really happy are those who will have sought and found how to serve." - Albert Schweitzer

## New Action Committees Created

- **Standard Operating Guidelines & Concept of Operations** – Bill Sobel (K1WLS) is chairing the committee with Cindy Sheffield (K9LRX) and Dee Seagraves (KO4TMZ) joining him in completing an update to the 2022 version on file with the Division of Emergency Management. This is the principal document defining the goals, duties, operations and procedures for all MERT members. MERT has evolved over the years and this operating document needs to mirror those changes. **Completion is targeted for March, 2025**



- **School Shelter Inspection & Testing Plan** – Ray Woody (WB6FKJ) is chairing the committee with Gary Neron (KS4TSX) and Cindy Sheffield (K9LRX) who will be creating the detailed plan for site inspections and actual multi-operation radio tests at each site during Spring Break (March 17 – 21<sup>st</sup>).



**Completion is targeted for late-February**

- **MERT 20** – Chairperson and team are needed!

This Exercise and Special Event celebrates MERT's 20-years+ of service and support to the Division of Emergency Management. It is focused on "getting on the air" from every radio, antenna and every band available to MERT for 4-hours enjoying what amateur radio is about.



### MERT 20 Special Event Exercise Plan

April 29, 2023

The Exercise Plan 20-Plan gives ideas and suggested activities, objectives, and objectives that participants can use to help them in preparing for the event. Some content is intended for the inclusion of exercise plan, and others are intended for the inclusion of the exercise plan. All exercise participants may view the full plan.

It's also a major training activity for newer members learning about the unique abilities and skills we can develop as each participant can access many bands and make contacts across the U.S. and the world (with support from Elmers). It's mostly about just having some FUN and a feeling of friendliness, goodwill, and familiarity among the MERT members.

**Completion is targeted for late-February so notices can be sent to multiple ham organizations announcing our event.**

## MEMBERS and Friends – Thank You for joining the weekly..... **MERT & CERT NET'S**

Each Thursday @ 7:30 PM, the **MERT D-STAR Net** will be on KK4DFC, Frequency 146.790 MHz, followed by a review of all the Winlink training messages received. Want to learn Winlink? Contact MERT for assistance.

Following that Net each Thursday @ 8:00 PM, a CERT/MERT roll-call Net on KJ4CLL is conducted on Frequency 145.330 MHz. It is an open FM Net (non-digital) with ALL Marion County CERT/MERT and any amateur radio guests **welcomed to participate!**

## Why does MERT have weekly Nets?

1. MERT's radio nets are conducted on a regular schedule and on repeaters used during **every Emergency Activation** for a specific purpose – **to verify the repeater systems are fully functional and ready for operation.**
2. These weekly and monthly tests also verify MERT members and other emergency communicators (EMCOMM) can send and receive voice communications along with passing Winlink digital messages with MERT during emergencies. Those organizations include:
  - a. MERT Shelter Operators – Marion County
  - b. Marion County Cities – i.e. Dunnellon EOC
  - c. Hospital Emergency Communications Team (HEC) - Marion County
  - d. Amateur Radio Emergency Services (ARES) - Marion County
  - e. Citizen Emergency Response Team (CERT) – Marion County
  - f. Florida Division of Emergency Management (FDEM) – State of Florida
  - g. The SHARED RESOURCES (SHARES) High Frequency (HF) Radio network<sup>1</sup> – U.S. Government

## Why are there two weekly Nets each Thursday?

MERT conducts two Nets each week in verifying both critical repeaters used in every emergency activation are ready and fully operational should an emergency be declared by the Division of Emergency Management.

## What are the two repeaters tested each week?

### Repeater KK4DFC

D-Star @ 146.790 MHz (receive freq.) with an offset of – 600kHz; transmit freq. 146.190 MHz.

- D-STAR, or Digital Smart Technology for Amateur Radio, is a digital communication protocol for amateur radio that allows users to connect with other users worldwide.
- MERT uses D-Star to significantly reduce transmissions from “bad actors” during emergencies causing harmful interference. D-Star also allows tracing “bad actors”.
- D-STAR has several features, including:
  - Digital voice and data.
  - D-STAR allows users to access the internet through a gateway.
  - Call sign identification is included on every transmission.
  - D-STAR has a call sign squelch function that opens the squelch only when a user's call sign is received.

## Repeater KJ4CLL

This is an open FM repeater @ 145.330 MHz (receive freq.) with an offset of – 600 kHz; transmit freq. 144.730 Mhz.

- This repeater is open to all amateur radio operators during non-emergency activations and available for use by FCC licensed operators within range. Radio communications traffic by all amateur radio operators is **encouraged**.
- During emergency activations, this repeater is **restricted to only emergency traffic** as directed by the Marion County Emergency Radio Team (MERT) and authorized by the Incident Commander (IC) of the Division of Emergency Management, Marion County Sheriff's Office.

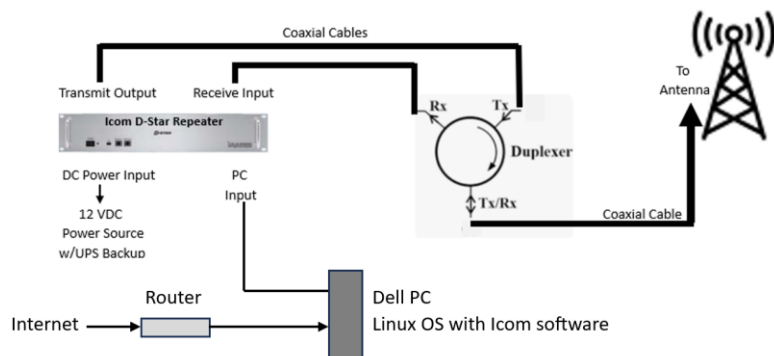
## What equipment is tested during every Net?

Both operational Nets confirm the following hardware/systems are working as required:

- Antenna and tower cable system
- Internal cabling from the radio repeater to the tower cabling system
- Tuned Duplexer to the Radio repeater
- Radio Repeater (and the controller/operating system managing the repeaters operation)
- DC power supply and UPS system providing dc and AC power to electrical equipment.

KK4DFC (D-Star - 146.790 MHz with -600 KHz offset)

(R) The drawing details the multiple hardware and electrical/cable connections for a D-Star repeater to operate correctly.



## **MERT Member participation is VERY IMPORTANT!**

As detailed above, weekly participation also tests the equipment and systems located at the EOC and at each members residence along with practice using their radios by making contact with other licensed operators sharing their call sign, exchanging signal reports, and practicing verbal conversation protocols. MERT Members – Thank you for joining one or both Nets EACH WEEK.

“I am always doing that which I cannot do, in order that I may learn how to do it.” – Pablo Picasso

1 – SHARES coordinates a voluntary network of multiple government agencies, industry, and disaster Response agency HF radio stations used for emergency communications (EMCOMM). MERT is a licensed participant representing the Division of Emergency Management - Marion County (FL) Sheriff's Office.

2 - D-STAR was developed in the late 1990s by the Japan Amateur Radio League (JARL).

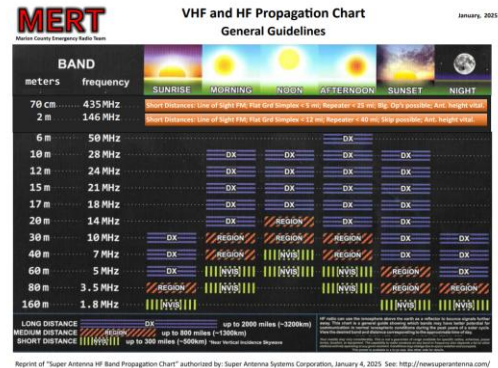
## Meeting Updates

### January 8th

In December, MERT reviewed its “HF Go Kit” in detail over several meetings which included NVIS theory, EMMCOMM reasons for the resource, critical operational procedures, various hardware included, inventory list, etc. On January 8<sup>th</sup>, members took a closer look at propagation on all ham bands in reviewing how MERT must have primary and backup systems and processes supporting 24x7 comm’s with local, regional, state (FDEM) & national agencies (SHARES).



One new resource reviewed was the “VHF and HF Propagation Chart – General Guidelines” helping clarify when various amateur radio bands are **Good** or **Poor** for use. The knowledge helps operators to select the most favorable HF communications band in completing EMMCOMM traffic as fast as possible.



- January
- 7<sup>th</sup> - VHF & HF Propagation Chart Review
- 7<sup>th</sup> - MERT ID Badge Information Update
- 15<sup>th</sup> - Why MERT has Wkly Nets?
- 18<sup>th</sup> - MERT Annual Meeting
- 22<sup>nd</sup> - EOC Security Procedures Review
- 22<sup>nd</sup> - What is and why is ICS important?
- Shelter Audits Planning Committee
- SOG Update Committee
- MERT 20 Planning Committee
- Special Events:

### January 15<sup>th</sup>

As a new resource for members, Coordinator Harlan Cook (KN4VRM) shared the **2025 Yearly Activities Calendar** which highlights training topics, meeting highlights and Special Events by month. It is hoped the resource helps members and friends learn what is planned each month. Everyone is encouraged to send in activities, special meetings and EMMCOMM training events to “Calendar” @ [KG4NXO@marionso.com](mailto:KG4NXO@marionso.com)



**Preston Bowlin, Director, Division of Emergency Management** visited to thank members for the outstanding support during 2024 and to share the new tower supporting the OCF HF antenna was ready for installation in the next couple weeks. We sincerely appreciate the support to enhance our operations.

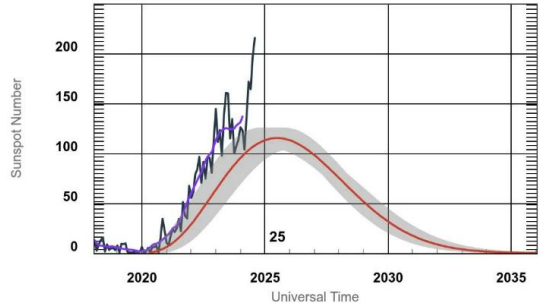
"All our dreams can come true, if we have the courage to pursue them" - Walt Disney

We welcomed Bill Sobel and his committee working on the Standards of Operation (SOG) and Gary Neron and his committee working on the update for the Shelter Audits scheduled for mid-March who provided progress updates.

Continuing a focus on HF EMCMM for 2025, members reviewed the current status of the Solar Activity events affecting earth and HF communications. So far, levels are 200% forecasted.

We also reviewed details of MERT's Level 1 and the importance for all to secure Level 2 ID's allowing Shelter Access for Operators during emergencies.

ISES Solar Cycle Sunspot Number Progression



### January 18<sup>th</sup> Monthly Meeting

MERT held its Annual meeting on January 18<sup>th</sup> with a full Agenda of excellent topics:

- Annual Meeting (Many thanks to Cindy Sheffield (K9LRX) Documentation Manager for leading the meeting and for the excellent 2024 Highlights Report!)
- 2024 Highlights Report (copies available – email [KG4NXO@marionso.com](mailto:KG4NXO@marionso.com))
- 2023/2024 Statement of Operations to Preston Bowlin, Director
  - Report provided by Harlan Cook (KN4VRM) MERT Coordinator
- ARES Training Initiatives - Hayden Kaufman (N2HAY) Marion County ARES Coordinator
- HEC 2025 Hospital Ham Team Objectives and Belleview ER Update - Dave Welker (W2SRP) HEC Coordinator
- HOA Approved HF Flagpole Antenna Update – MERT member Nick Kiddey (W4NFK)
- CERT Update - CERT Liaison Randy Williams (WD8MGZ)





### **A special thanks to member Nick Kidney (W4NFK)**

At the Annual meeting, Nick presented an excellent overview on designing, constructing and tuning his HOA Approved HF Flagpole Antenna. Some key topics included:

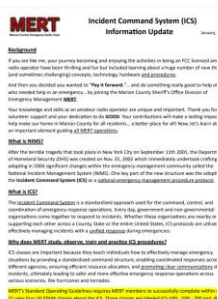
- ✓ Keep quiet the fact that it is also a HAM HF antenna
- ✓ Detailed Step by step construction process
- ✓ Tips and Tricks
- ✓ How does it perform?
  - Ask Nick for a copy of the amazing list of national and international contacts.

Please email [KG4NXO@marionso.com](mailto:KG4NXO@marionso.com) if you'd like a copy of his awesome presentation.



Nick also brought his all-band radio "Go Kit" for display. It is a very well planned and constructed system!

### **January 22<sup>nd</sup>**



As reported at the MERT Annual meeting, a significant drop in Volunteer Reported Hours for 2024 was noted with a request that members renew their efforts reporting all your time each week via the **MERTrak** website (see [mertrak.com](http://mertrak.com)). Members also reviewed the EOC building Security Guidelines, ICS Forms resource on the [KG4NXO.com](http://KG4NXO.com) website and a summary of the required FEMA online classes on the Incident Command System (ICS). Many Skill Task Books & New Member Orientation Guides were signed off too!

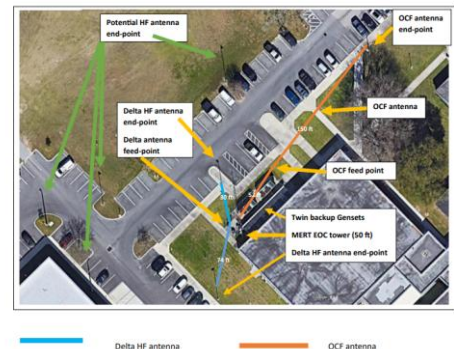
**The best and most beautiful things in the world cannot be seen or even touched - they must be felt with the heart. - Helen Keller**

## January 29th

A detailed discussion on how MERT can expand its HF communications capabilities was focused on the upcoming new hurricane rated 30 ft. tower being installed soon. While it will support the existing OCF antenna, it has the potential of also having a new HF antenna installed supporting the 24x7 EMCOMM resources MERT needs. More study and analysis is planned.

MERT EOC HF Antenna diagram

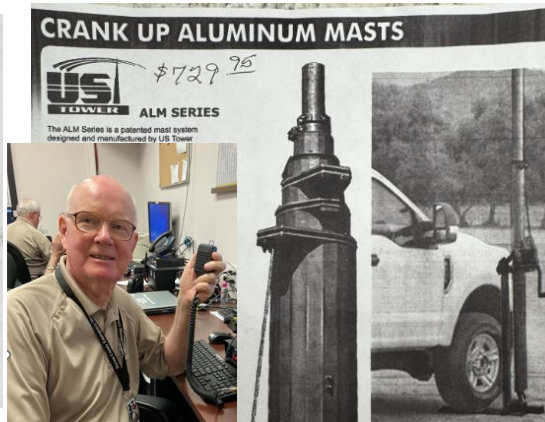
Jan. 2025



## MERT Supporting CERT



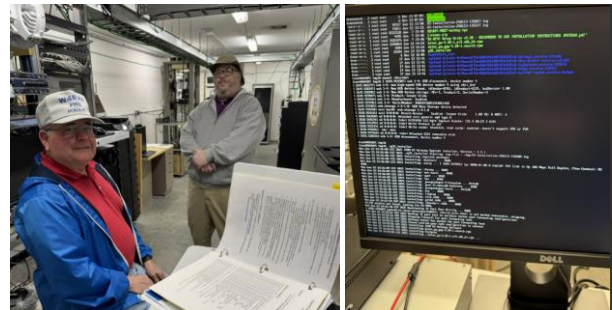
Shout out to Bruce Twiss and Terry Strey, two of our ham operators, who devised a clever method to anchor an antenna and power their ham radios when traditional power sources are unavailable. They saw the need for a portable and reliable power source coupled with a stable antenna setup. The two designed a lightweight antenna mast that can be easily transported and set up just about anywhere. The mast is anchored using the car's front tire to provide a stable and secure antenna base. The ham radio can be powered by a rechargeable battery, the car's battery, a cigarette lighter socket, or connecting the radio to a 110-volt power when available.



In January, member Bruce Twiss (KI4NFA) assisted his OTOW CERT in setting up a field station using a portable mast system, radio and battery powered ham station. This allows CERT to establish operations throughout the entire OTOW community if needed. **Nicely done Bruce!**

## New D-Star Repeater Update

Phil Lewis (W4EUV) shares the programming/setup of the new 3<sup>rd</sup> Generation D-Star repeater and PC for KK4DFC have made good progress. MERT thanks Hayden Kauffman (N2HAY) for his support and knowledge of Linux OS to help in the upgrade to our D-Star system.



## MERT Coordinator Update:

I thank all members and friends for their patience and understanding in the KK4DFC and KG4NXO repeater outages last month as I am in a new "universe" learning many more details of the D-Star system. LOL... At the same time, I also decided to try adding new capabilities and locked up my laptop preventing email updates during the last week. Oops! 😊

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