

# MCSO Emergency Radio Communications

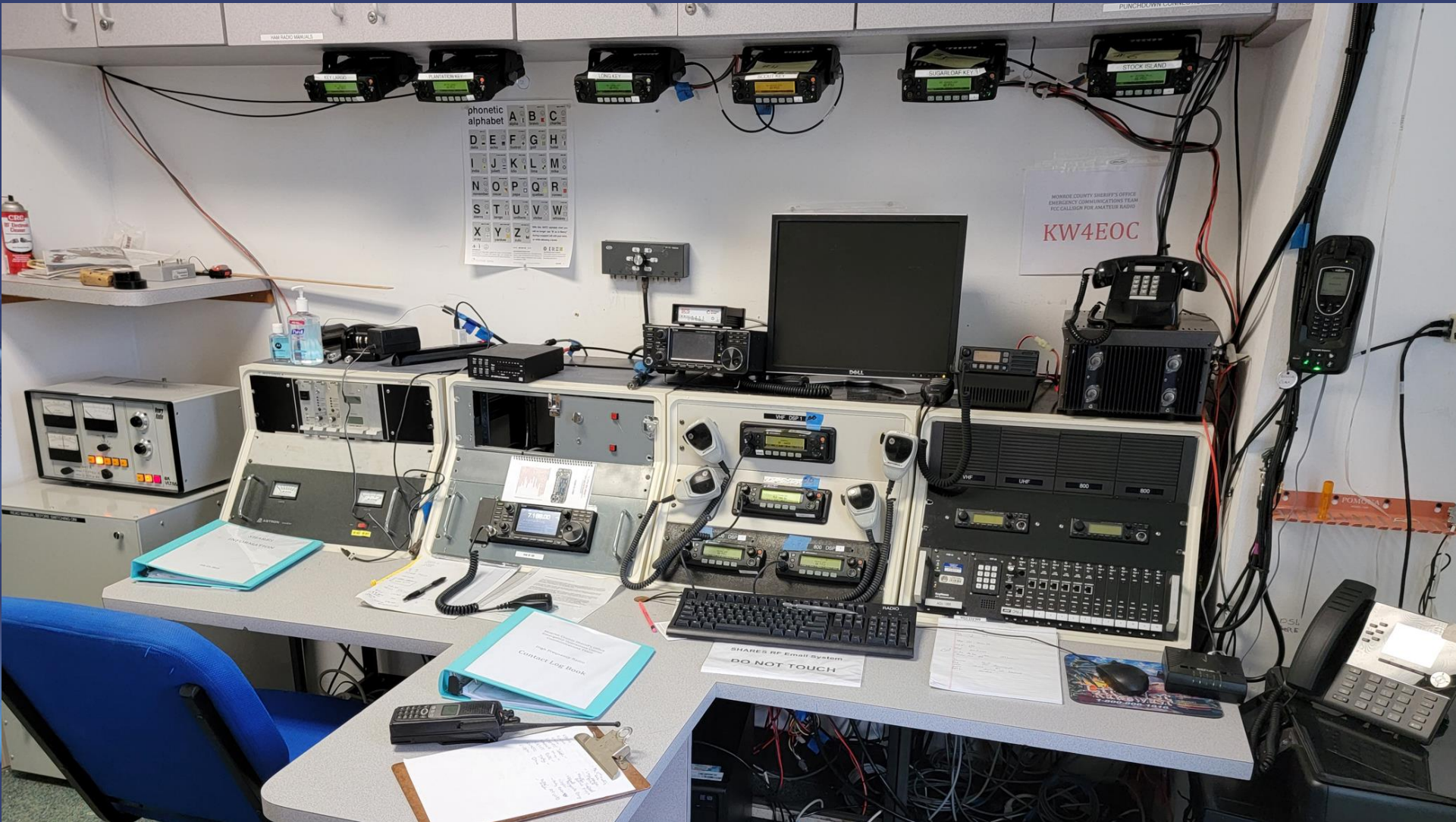
March 2, 2022

# Emergency Radio Communications Capabilities

- Marathon EOC Radio Room
- Emergency Communications Van
- Portable Tower Trailer
- Four Modular Interoperability Gateways
- HF Go Boxes
- VHF Marine Base Station
- County Wide FM & DMR Ham Repeater Networks

# Marathon EOC Radio Room

## KW4EOC Ham, NNC4FL SHARES



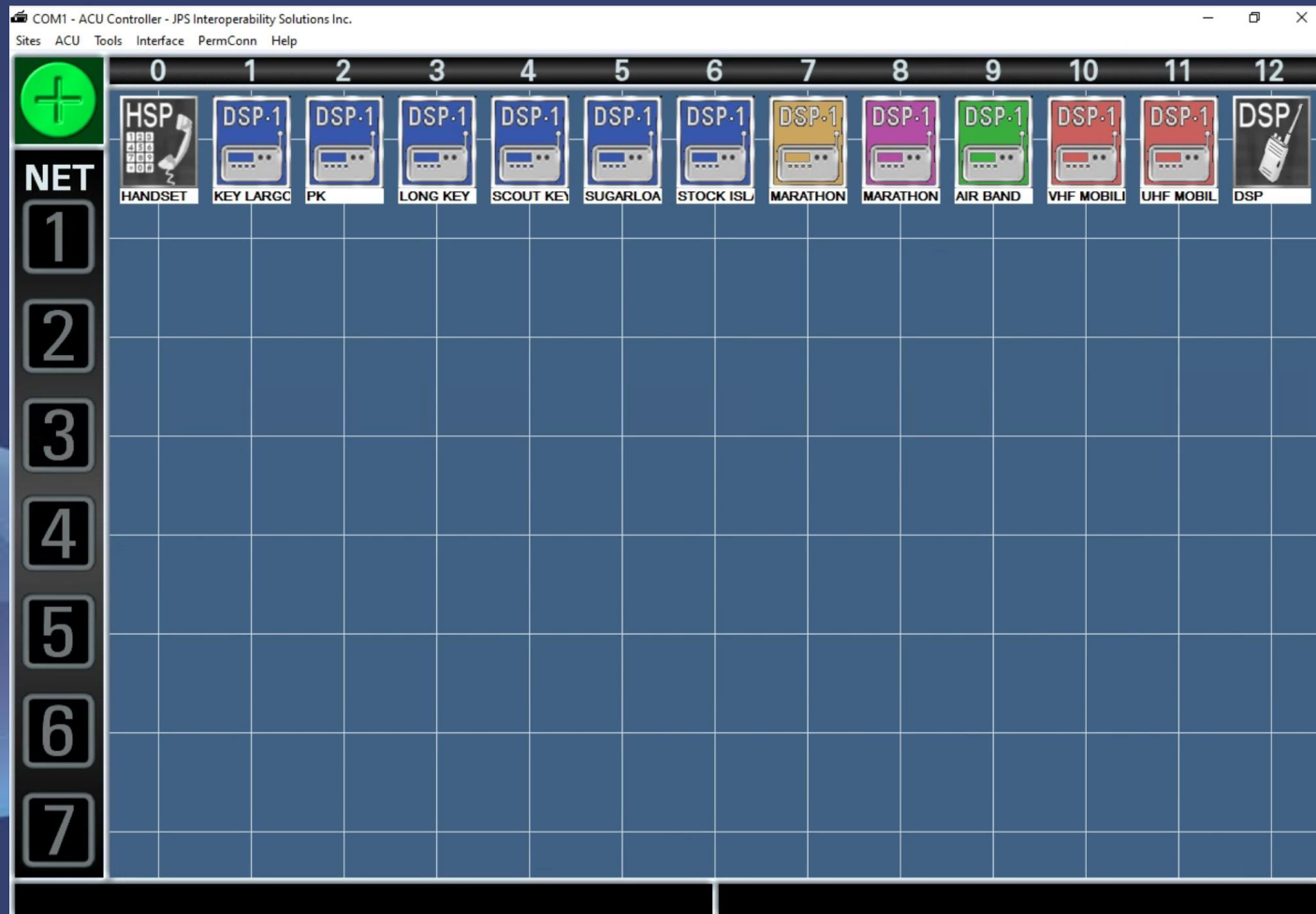


# Marathon EOC Radio Capabilities

- 800 MHz P25 RF Linking to Six Tower sites
  - In the event of a networking failure
- Inter-Linking Capability to 800 MHz, VHF FM, UHF FM, Airband and other Motorola Portables as needed
  - Remotely controllable
- Satellite Phone with roof antenna
- Portable Satellite Data Terminal
- SHARES Pactor 4 Winlink HF Email System
  - Remotely controllable
- IC-7300 HF transceiver and Henry 8K Amplifier
  - 40/80 Inverted Vee and Cushcraft X7 20-10 Meter Yagi
  - Supports SHARES and Amateur Radio Frequencies
    - SHARES Callsigns: NNC4FL, NCS170, NCS171, NCS172

# ACU-1000

## Modular Interoperability System Gateway



# SHARES Station

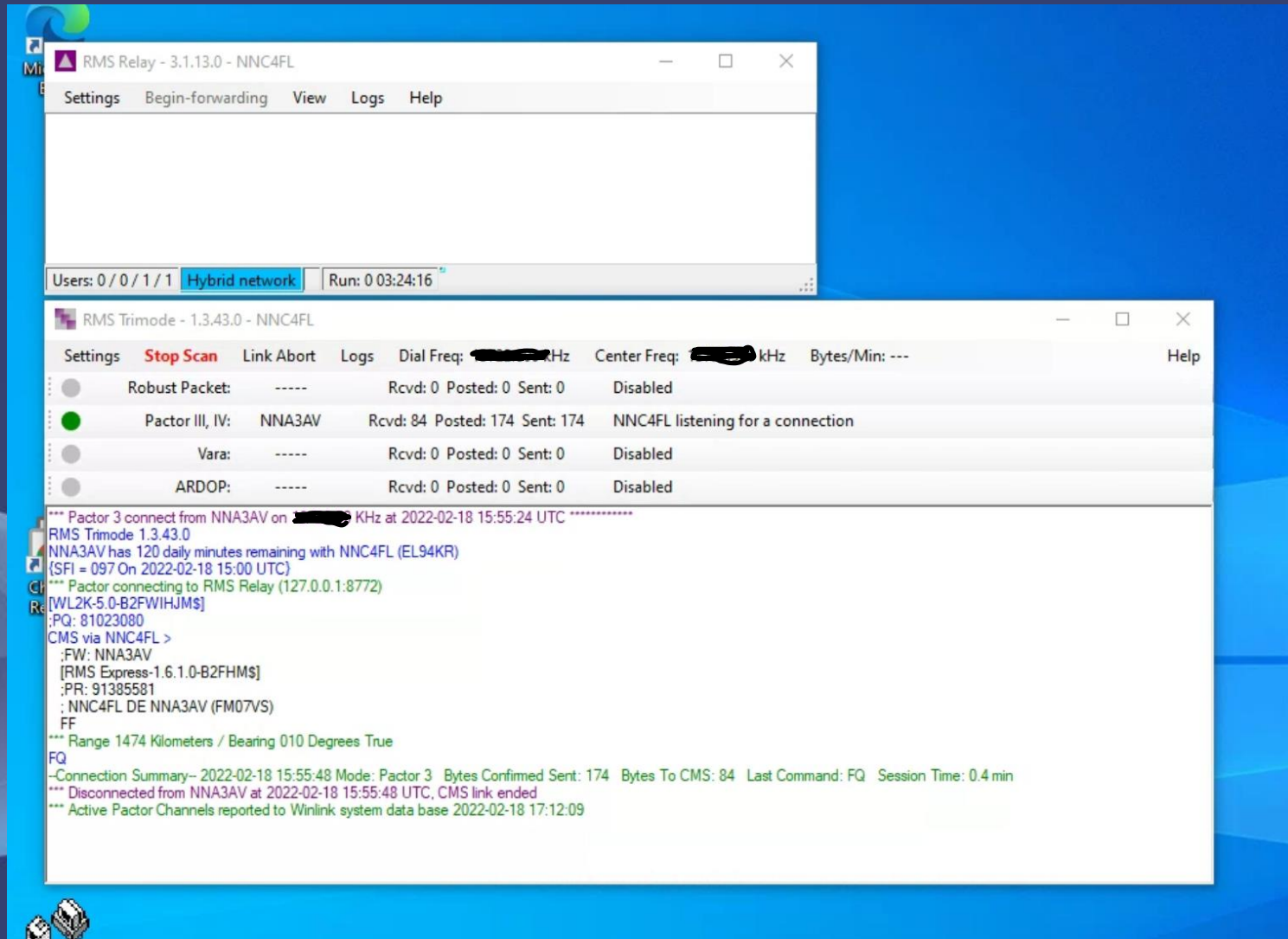
- SHARES stands for SHARed RESources (SHARES) High Frequency (HF) Radio Program.
- SHARES coordinates a voluntary network of HF radio stations used for emergency communications.
  - Includes government, industry, and disaster response agencies
- SHARES supports government organizations in two ways:
  - by transmitting emergency messages when normal communications systems are destroyed or unavailable
  - Providing HF radio channels for interoperability.
- SHARES supports Emergency Support Function Two (ESF #2), Communications
- Helps participants maintain awareness of applicable regulatory, procedural, and technical issues.
- SHARES is a program of the National Coordinating Center for Communications (NCC), a division of CISA Central.

# How does SHARES work?

- SHARES HF Radio Program is administered by the Cybersecurity and Infrastructure Security Agency's (CISA) Cybersecurity Division (CSD).
- Members of the SHARES Program consult the SHARES Handbook to find stations and frequencies of participating organizations they need to communicate/coordinate with during emergency operations.
- SHARES is available on a 24-hour basis and requires no prior coordination or activation to transmit messages.
- Participating SHARES HF radio stations accept and relay messages until a receiving station is able to deliver the message to the intended addressee.
- SHARES conducts weekly and quarterly communications exercises to provide users with operational knowledge, technical skills, and training in preparation for proficiency during emergencies.



# SHARES Winlink HF Email System





# SHARES Winlink HF Email System Locations



# Emergency Comms Van





# Emergency Communications Van

## 30 Foot Antenna Mast



# Emergency Communications Van Capabilities

- 800 MHz Replacement Tower Site
- 800 MHz System Cache Radios
  - 75 Handhelds
- Cache of Ten UHF Ham Portables
- VHF, UHF & Two 800 MHz Radios
- Ability to link to APX Handhelds
- Three 800 MHz Repeaters
  - For Inter-Agency Communications
- ACU-1000 for Inter-Linking
  - Same as EOC
- 30 Foot pneumatic mast and antennas
- Portable Satellite Data Terminal
- Diesel 5 Kw Generator
- Chainsaws





# Portable Tower Trailer





# Two ACU-M Portable Modular Interoperability System Gateways



# Two HF Go Boxes

- IC-7300 HF Transceiver
- Samlex 13.8 Volt Power Supply
- 50 ft of RG-8X feedline
- 40, 60 & 80 Meter Dipoles





# VHF Marine Remote Base Scout Key Tower MM34



- Wide Coverage Area
  - 125 Watts
  - Antenna at 300 feet
- Can be linked to 800 MHz System
- Managed by 911 Dispatchers
- Fourteen Marine Channels



# VHF Marine Remote Base Channels

Quantar Channel	Marine Channel	Ship Transmit MHz	Ship Receive MHz	Use
1	6	156.3	156.3	Intership Safety
2	9	156.45	156.45	Boater Calling. Commercial and Non-Commercial. Also used to hail many drawbridge operators, especially common in the Sacramento Delta region.
3	13	156.65	156.65	Intership Navigation Safety (Bridge-to-bridge). Ships >20m length maintain a listening watch on this channel in US waters. Also hailing channel for many draw bridge operators.
4	16	156.8	156.8	International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel. If used for ship to ship calling, switch to a "non-commercial" or "commercial working channel based upon your type of vessel.
5	21A	157.05	157.05	U.S. Coast Guard only
6	22A	157.1	157.1	Coast Guard Liaison and Maritime Safety Information Broadcasts. Broadcasts announced on channel 16.
7	23A	157.15	157.15	U.S. Coast Guard only
8	68	156.425	156.425	Non-Commercial
9	69	156.475	156.475	Non-Commercial
10	71	156.575	156.575	Non-Commercial
11	72	156.625	156.625	Non-Commercial (Intership only)
12	78A	156.925	156.925	Non-Commercial
13	82A	157.125	157.125	U.S. Government only
14	83A	157.175	157.175	U.S. Coast Guard only

# Monroe County Linked Ham FM Repeater Network

Frequency	Offset	Tone Up / Down	Location	State	County	Call	Use	Modes	
146.6700	-0.6 MHz	94.8 / 94.8	Scout Key, MM-34	FL	Monroe	K4FHE	OPEN	FM	
146.7150	-0.6 MHz	94.8 / 94.8	Plantation Key, Mile marker 88 US-1	FL	Monroe	K4FHE	OPEN	FM	
147.2550	+0.6 MHz	94.8 / 94.8	Marathon, Mile marker 48 US-1	FL	Monroe	K4FHE	OPEN	FM	
147.3450	+0.6 MHz	94.8 / 94.8	Key West, Mile marker 0, US-1	FL	Monroe	K4FHE	OPEN	FM	
442.4000	+5 MHz	94.8 / 94.8	Scout Key, MM-34	FL	Monroe	K4FHE	OPEN	FM	
442.6000	+5 MHz	94.8 / 94.8	North Key Largo, Ocean Reef	FL	Monroe	K1ST	OPEN	FM	
443.4500	+5 MHz	94.8 / 94.8	Plantation Key, Mile marker 88 US-1	FL	Monroe	K4FHE	OPEN	FM	
444.7000	+5 MHz	94.8 / 94.8	Key West, Mile marker 0, US-1	FL	Monroe	K4FHE	OPEN	FM	
444.8500	+5 MHz	94.8 / 94.8	Marathon, MM-48	FL	Monroe	K4FHE	OPEN	FM	

Repeaters will operate as isolated Repeaters if the networking infrastructure fails.

# Monroe County Linked Ham DMR Repeater Network

443.2875	+5 MHz	CC8 94.8 / 94.8	North Key Largo, Ocean Reef	Monroe	K1ST	OPEN	FM DMR
444.0500	+5 MHz	CC8 94.8 / 94.8	Key West, Mile marker 0, US-1	Monroe	K1ST	OPEN	FM DMR
444.3250	+5 MHz	CC8 94.8 / 94.8	Cudjoe Key	Monroe	K4ECT	OPEN	FM DMR
444.3625	+5 MHz	CC8 94.8 / 94.8	Plantation Key, Mile marker 88 US-1	Monroe	K1ST	OPEN	FM DMR
444.7875	+5 MHz	CC8 94.8 / 94.8	Marathon	Monroe	K1ST	OPEN	FM DMR

- Repeaters linked via Cellular Network
  - Will operate standalone if cellular outage
- On the Brandmeister DMR Network
  - TS2 - Keys Talk Group, TG3121536
  - TS1 - Keys Cares, TG312443
    - Lower Keys, TG311685
    - Middle Keys, TG312271
    - Upper Keys, TG312272
    - Ocean Reef, TG312341

# Get the eNIFOG Phone App



- National Interoperable Field Operations Guide (NIFOG)
  - Available as the eNIFOG mobile app on Apple® iOS™ and Google® Android™ devices.
- Technical reference for emergency communications planning and for technicians responsible for radios that will be used in disaster response.
- Includes rules and regulations, tables of frequencies and standard channel names, and other reference material



# How Hams can Prepare

- Volunteer to man County Shelters during Emergencies
  - Contact KA2BYU
- Participate in the Keys Weekly Preparedness Net
  - Tuesday Nights at 7:30 PM
- Get on the Air on a regular basis
  - Know how to use your radio
  - Get to know the repeater coverage areas
  - Know how to communicate
- Get on the FKARC Mailing List for Updates
  - Contact K1ST
- Participate in ARRL Field Day
  - Practice setting up for Communication Emergencies
  - Contact K1ST if you want to participate this year

# How Hams can Help during Emergencies

- Comms plan will be emailed via FKARC mailing list
- Volunteer to man EOC Radio Room
  - Training will be provided
  - Contact K1ST for details and to get started
- Monitor the County Wide FM Ham Repeater Network
  - EOC will monitor when available
  - If network inter-connectivity fails, try to listen to the Scout Key and Plantation Key FM Repeaters
    - RF Links will be implemented to those sites if possible
- Nets will be held on the hour or as needed
  - Report damage
  - Request assistance if telephone systems are down



Thanks for Attending