

# Deploying the Travis County Amateur Radio Emergency Services (TCARES) Emergency Communication Trailer (ECT)

Glenn, W5MTR – 11/5/2024



# Overview

- Emergency Communication Trailer purchased from Texas State Guard 2018
  - Primary re-builders
    - Kevin N5KOD
    - Reid KI5BEO
    - Roy WA5YZD
  - Original logistics lead
    - Mike KF5JLK
  - Two weeks in:
    - 22 volunteers, 300 hours
- Used for
  - Events/Deployments
  - Training
  - Public Relations

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# Deployments

- 2024
  - Apr: Stonewall Eclipse Deployment
  - Apr: IEEE
  - Jun: Field Day
  - Sept: City of Austin Emergency Prep Fair
  - Oct: N5OAK POTA Potluck
- Previous Deployments
  - Red Cross: Sound the Alarm
  - Boy Scouts: Sci Tech Eng Math (STEM)
  - Critical Infrastructure: Simulated Emergency Test



# Specifications & Capabilities

- Size:
  - 7' x 16' inside
  - 8' x 21' outside (including tongue)
  - 13' 7" to highest rail antenna; 10' 6" to basket
- Weight
  - GVW: ~10,000 lbs
  - Tongue: ~1,200-1,300 lbs
    - Requires ¾ ton+ tow vehicle
- Power
  - In
    - Shore power
    - 12 kW Cummins diesel generator
  - Out
    - Distribution panel
    - Outside power outlets



# Capabilities (cont'd)

- Antenna mounts
  - Pneumatic mast: ~40'
    - Four (4) “antlers” for vertical antennas
    - Mounts for HF dipole
    - Four (4) coax
    - Onboard air compressor, connector for external compressor
  - Roof rails
    - Space for eight (8) antennas



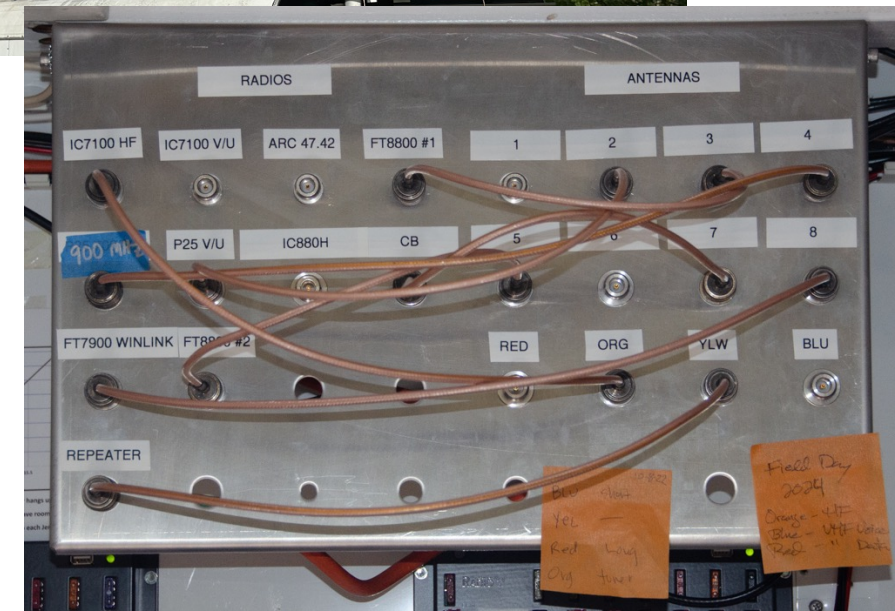
# Capabilities (cont'd)

- Radios
  - HF
    - Icom 7100: Voice/WinLink
  - VHF/UHF
    - Two Yaesu FT-8000s: Voice
    - Yaesu FT-7900: WinLink
    - Icom ID-880H: D-STAR
  - Yaesu DR-1X: UHF Repeater
  - Kenwood: 33cm Amateur (900 MHz)
  - Uniden Bearcat 980SSB: CB
  - Red Cross: 47.42 MHz



# Capabilities (cont'd)

- Antennas:
  - HF
    - SGC SG-230: Broadband auto-coupler dipole
    - Resonant dipoles: 40m, 60m, 80m
  - VHF/UHF on mast
    - Comet verticals: long and short
    - UHF repeater antenna
  - Roof rails:
    - VHF/UHF
    - 900 MHz
    - CB
    - Red Cross
- Patch Panel:
  - Connect radios to mast and/or roof antennas



# Capabilities (cont'd)

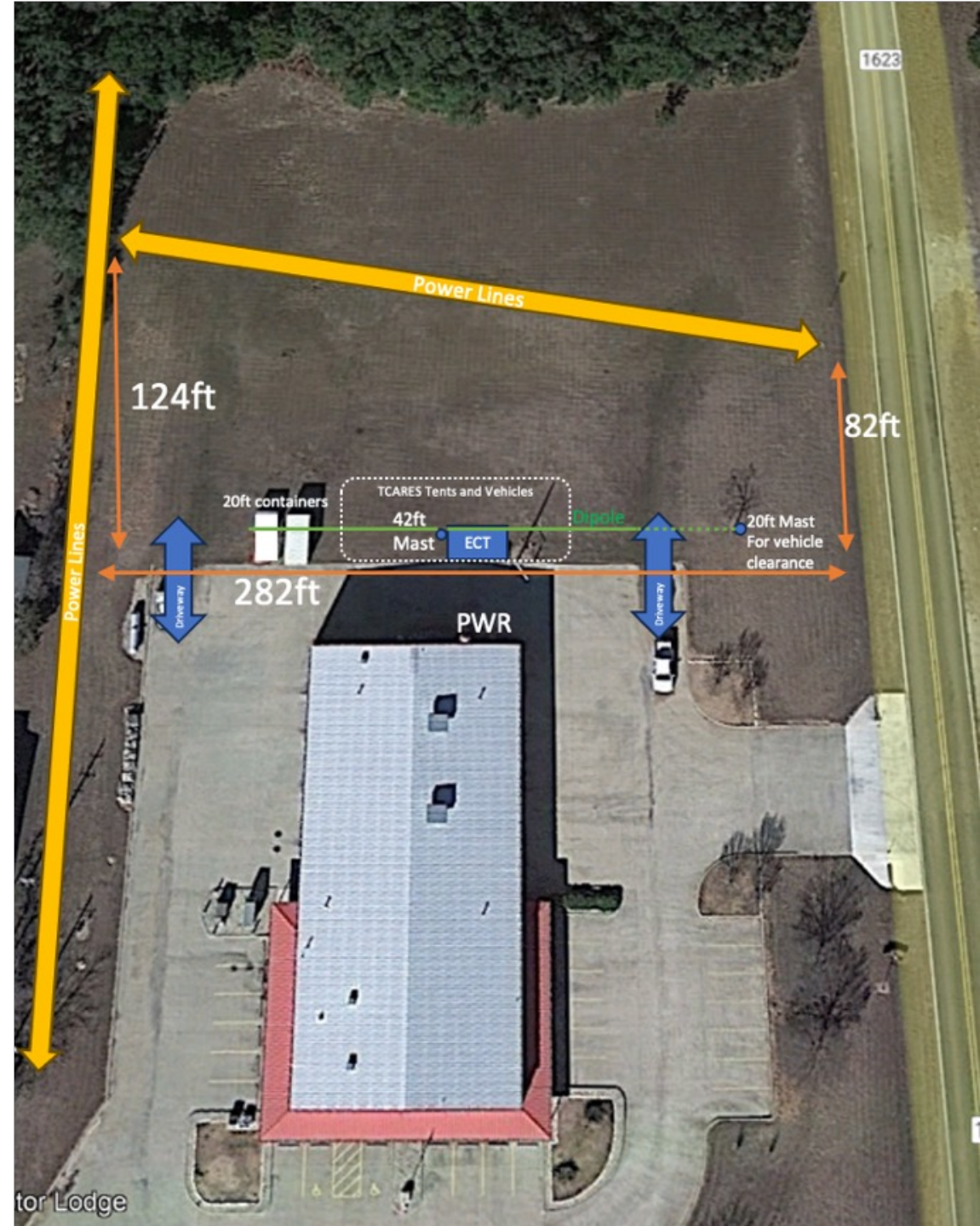
- WinLink
  - HF:
    - Pactor
    - VARA
  - VHF:
    - Packet
    - VARA FM
- Field mast, coax
- TV
- WiFi range extender
- Awning
- Air Conditioning



# Deployment

- Plan & Scouting
  - Team
    - Tow vehicle
      - Red Cross Silverado
      - Phil AA5EX
      - Dave K5DAV
    - Setup/tear-down
    - Operators - Three stations:
      - HF Voice & Data
      - VHF/UHF Voice, ARC, 900MHz
      - VHF/UHF Voice & Data, CB
  - Placement at site
    - Level ground?
  - Route
    - Lead/chase cars
  - Radio & antennas
    - Frequencies to be used? (ICS-205 form)
    - Which radios, which antennas?
  - Power

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# Deployment

- Preparation
  - Program ICS-205 frequencies into radios
  - Computers: Update OS, WinLink, VARA, ...
  - Dry run



## Deployment (cont'd)

- Leave base: prepare for travel
  - Check systems
  - Fill pneumatic air tank
  - Put equalizer hitch on tow vehicle
- Set up at location
  - Connect to shore power or start generator
  - Start AC
  - Deploy mast (if needed)
    - Attach antennas
    - Raise mast
  - Power on radios



# Deployment (cont'd)

- Operate
  - Fill diesel tank as needed
  - Keep an eye on weather
- Demobilize
  - Lower mast, purge air tank
  - Disconnect antennas from mast, stow
    - Secure, cover coax on basket
- Return to base
  - Re-connect to shore power
  - Re-fill diesel tank/cans



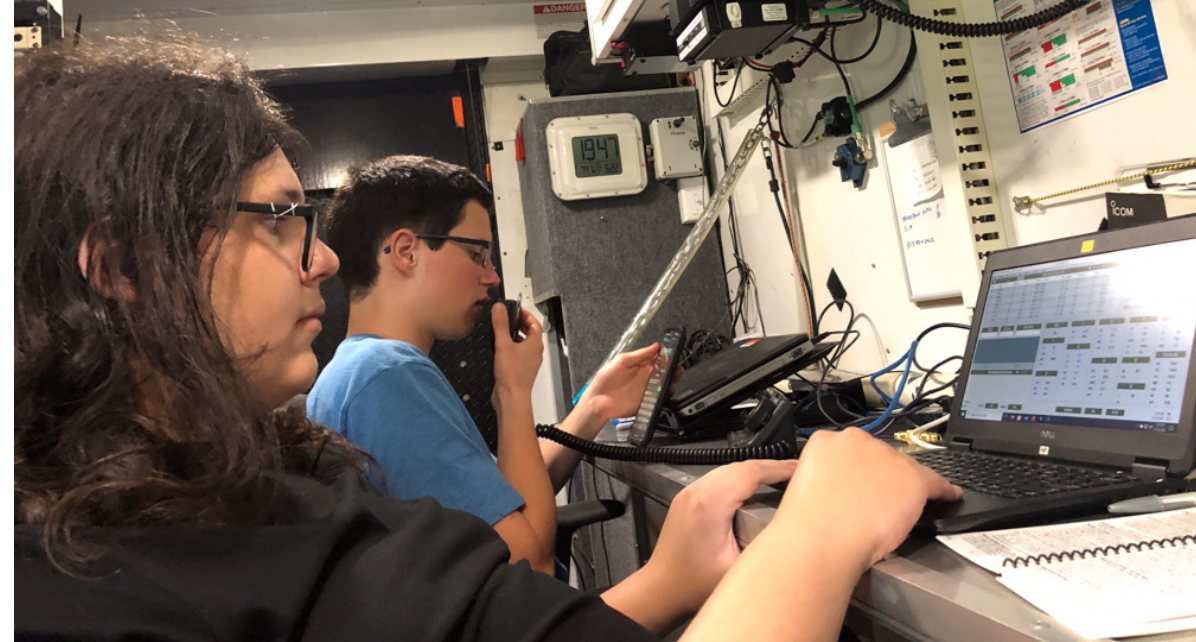
# Deployment (cont'd)

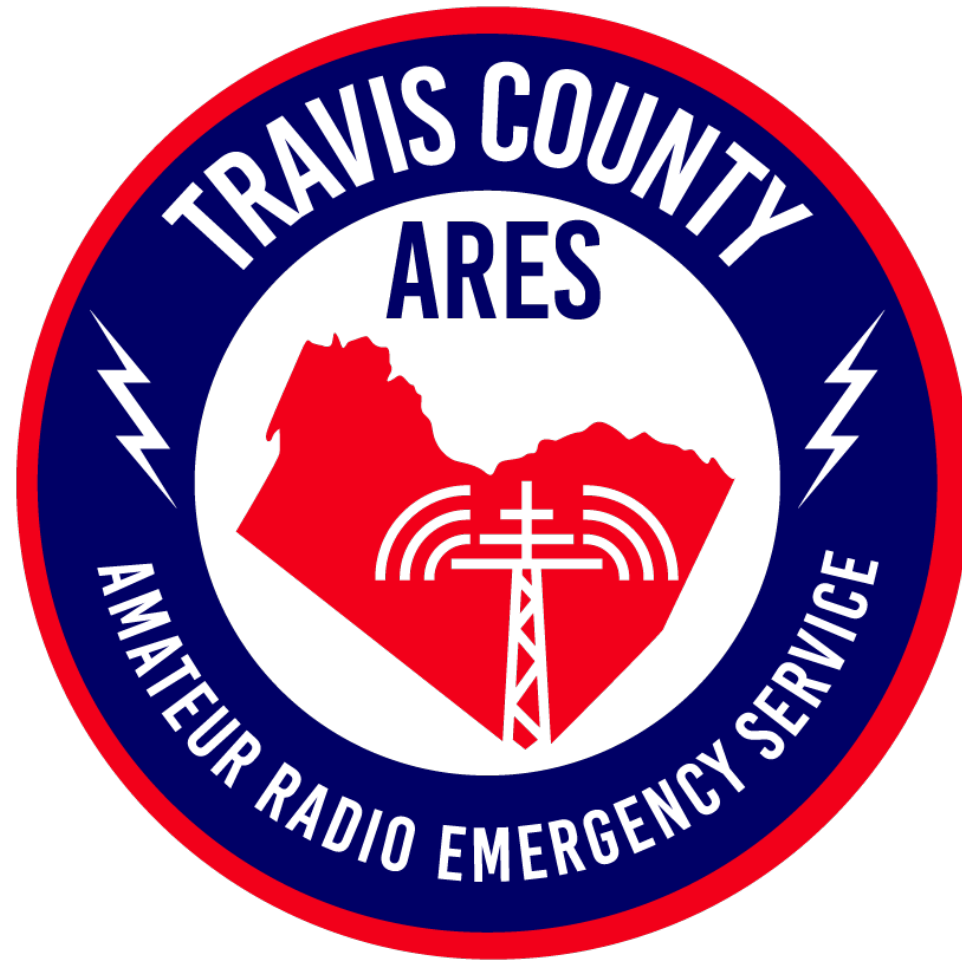
- Safety concerns
  - Power lines and mast/antennas
    - “Look up and Live”
  - Working on roof
  - Installing/removing equalizer bars, hitch, etc.
  - Not operating radios when someone on roof
  - Weather
    - Lightning
    - Wind
  - Safe towing
    - Height with lowered mast, roof antennas



# Ongoing Needs

- Volunteers
  - Tow Team:
    - Red Cross licensed drivers
    - Lead/Chase cars
  - Deployment
    - Setup/tear-down
    - Operators
  - Maintenance
    - It's a trailer
  - Checklists, user guides
- Events
  - 2025:
    - Field Day
    - CoA Emergency Prep Fair
    - N5OAK POTA
    - ???





**TCARES: <http://tcares.org>**

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