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# 2024 Year End Summary, Update, Preview
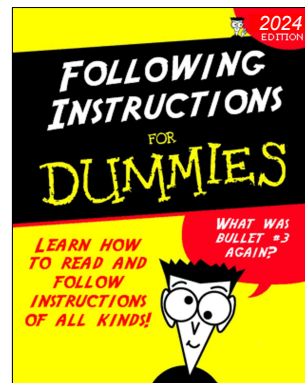
Santa Clara County ARES®/RACES
Revised: 11-Dec-2024

ARES and Amateur Radio Emergency Service are registered service marks of the American Radio Relay League Incorporated and are used by permission.

## Housekeeping

- Introductions
- Pen/pencil, paper
- Cell phones
- Side conversations
- Questions
- Breaks
- Restrooms
- Do not park in side parking lot
- Do not wander around the building
- In case of emergency

## Agenda

- Message Passing Skills
- Training
- ICS Forms
- Credential Updates
- Packet Network Update
- Monthly Packet Message Passing
- P1 and HF Credentials & SHARES
- Weekly Packet Practice
- Safety Issue Observed: no fuses in power cables
- Working with a Served Agency
- W2XSC BBS Failure

## Message Passing Skills
### Can you send what the served agency needs?

Tim Howard, KE6TIM
Revised 10-Dec-2024

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## Why is Message Passing Important

- Trained Amateur Radio Operators
  - Do more than push a PTT button.
  - Know how to get agency specific messages from Point A to Point B accurately and efficiently, even when other systems are failing.
- No mater how much experience you have, your skills become stale without practice.
- We encourage everyone to attend the training classes every few years.
- We all think we are good enough, but how good is good enough?
- Let's try some examples.
- No judgement, just some fun to see what we can do.

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## Some Examples

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Santa Clara County ARES®/RACES

**Message Handling Procedures**

Revised: 28-June-2024

https://www.scc-ares-races.org/operations.shtml#MHP

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## Message Passing Skills

- We schedule two Message Passing Classes each year.
  - January 27th
  - July 19th

- Quarterly Training Nets on the 3rd Tuesday of the 1st Month in each Quarter at 7pm on the Resource Net Repeaters is another opportunity to learn and practice.

  - January 21st - details on web site--sign up.

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# Training

Judy Halchin, KK6EWQ
Revised 22-Nov-2024

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## Classes

- 24 training classes in 2024
- 16 unique classes
- 40 people in Introduction to Emergency Communications classes
  (not counting instructors and staff)
- 2025 schedule is very similar to this year's

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## Practices

- Monthly packet practice
- Pop-up packet drill
- Quarterly message passing practice
- Quarterly drills at County EOC radio room
- Annual exercise in September

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## Slide 13

### Hospital Training

- Hospital employees got ham radio licenses (or already had them)
- ICS-214 and ICS-309 training videos
- Basic voice and packet training for hospital employees

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## Slide 14

### 2025



2025 Santa Clara County ARES/RACES/ACS -- Training/Activity Calendar

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## Slide 15

# ICS Forms

Tim Howard, KE6TIM

Revised 10-Nov-2024

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## Slide 16

### Forms Updated in 2024

- In 2023 the Public Health Department relocated their operations center and renamed it:
  - Was: Medical Health Joint Operations Center - MHJOC
  - Is: Public Health Department Operations Center -  PHDOC

- This resulted in updates to Hospital Forms and the Recommended Form Routing Sheet.

- We are still seeing numerous cases of MHJOC still being used instead of PHDOC.

- The *Recommended Form Routing Sheet* is your friend.

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## Forms Updated in 2024 (Cont.)

- The RACES Mutual Aid Request Form was updated.

- The primary changes were on page two used at the County EOC to assist with resource assignment and tracking.

- Some changes on the front for cities.

- Those are used by city ECs/AECs and the changes were shared with city RACES leaders at a quarterly EC Council Meeting.

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## Errors in Form Completion

- We continue to see errors in form completion.

- Primarily 214 Activity Log and 309 Communications Log.

- Judging from the call signs, it is mostly newer operators; but, some experienced operators also make errors.

- So new or experienced, we all can do better.

- These forms are legal documents and need to be accurate.

- Let's review some of the more common errors to help us all learn. Names have been redacted to protect the innocent.

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## What is missing or could be improved



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## What is missing or could be improved



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## What is missing or could be improved



## What is missing or could be improved



## What is missing or could be improved

Continuation of the same form



No check-out of net or release from assignment

## What is missing or could be improved

## Credential Updates

Tim Howard, KE6TIM
Revised 11-Dec-2024

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## Earned Credentials/Endorsements 2024

| Credential | Field Operator | Net Control | Packet Operator | Shadow |
|------------|----------------|-------------|-----------------|--------|
| Type I | 0 | 1 | 3 | 0 |
| Type II | 1 | 1 | 0 | 0 |
| Type III | 2 | 2 | 2 | 2 |
| Type IV | 2 | | | |

| Endorsement | Earned |
|-------------|--------|
| Mutual Aid Communicator (MAC) | 5 |
| County EOC Radio Operator (ERO) | 5 |
| County EOC RACES Unit Leader (RUL) | 5 |

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## Total Credentials and Endorsements

**Number of Credentials Earned by Type**

| Credential | Field Operator | Net Control | Packet Operator | Shadow |
|------------|----------------|-------------|-----------------|--------|
| Type I | 5 | 7 | 3 | 5 |
| Type II | 17 | 13 | 13 | 9 |
| Type III | 42 | 30 | 33 | 20 |
| Type IV | 54 | | | |

**Number of Endorsements Earned**

| Endorsement | Earned |
|-------------|--------|
| Mutual Aid Communicator (MAC) | 43 |
| County Fire Station Radio Operator (FRO) (Pending) | 0 |
| County EOC Radio Operator (ERO) | 17 |
| County EOC RACES Unit Leader (RUL) | 5 |

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## Credentialing

- Credentialing in technical fields (usually called certification) has been used for 25+ years to verify an individual's ability.

- Credentialing is becoming more prevalent in Emergency Management, especially where mutual aid may be utilized.

- The State of California has a credentialing program for EOC positions and many cities are having their staff earn credentials.

- Served agencies are increasingly aware of credentialing and are expecting team members to be credentialed.

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## Credentialing

- **Credibility**: Credentials demonstrate your training, knowledge, skills, and experience; and enhances your credibility with peers and served agency personel.

- **Commitment**: Earning credentials demonstrates your commitment to the EmComm role, validates your acquired skills as a volunteer, and can open doors to leadership and training roles within the organization.

- **Assignments**: Credentials can assure those that assign you to a task know that you are capable of handling whatever challenges the assignment presents.

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## Credentialing Program Handbook

Santa Clara County ARES®/RACES/ACS

Amateur Radio Operator

Credentialing

Program Handbook

Version 3.1.3
Revised: 26-Mar-2024

https://www.scc-ares-races.org/credentials/index.shtml#overview

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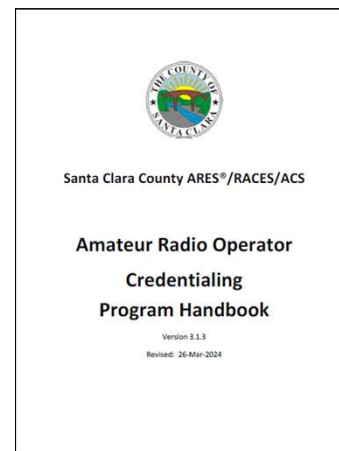
## Database Update

If you have a County DSW, the sticker on your DSW Card Expires at the end of December.

New stickers will be provided to your EC for distribution if you have updated your database contact information by December 31st.

EXPIRES END OF:
VALID
THROUGH
DECEMBER
31
2024
SCC OEM

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## Update/Verify Contact Info

**My Contact Information**

**Personal Information**
- Call Sign* — W6XRL4
- First Name* — Herman
- Last Name* — Munster
- Address 1* — 1313 Mockingbird Ln
- Address 2
- City* — Mockingbird Heights
- State* — TZ
- Zip* — 00000

**My Profile**
- My Contact Info ←
- My Equipment
- My Activity Record
- My Completion Certificates
- My Credentials
- My MAC-Qualifying Events
- Cities/Agencies I Support
- Change My Call Sign
- Change My Password

**Emergency Contact Information**
- Emergency contact* — Lily
- Contact number* — 408-555-1212

**Supported Agencies**
You are on the rosters of these agencies:
County of Santa Clara
**My Primary Agency**
County of Santa Clara
If you are on multiple rosters, "Primary Agency" is the agency that you will most likely respond to first in case of a wide-spread incident.
* denotes required field

**Contact Information**
- Home Phone# — 408-555-1212
- Work Phone#
- Cell Phone#
- Pager
- e-mail #1 * — none1@noone.com
- e-mail #2 — none2@noone.com
* denotes required field
# at least one number is required

**AlertSCC Information**
(format for phone & SMS numbers: 999-999-9999)
- Phone #1 : 408-555-0001
- Phone #2 : 408-555-0002
- Phone #3 : 408-555-0003
- e-mail #1 : email1@gmail.com
- e-mail #2 : email2@gmail.com
- e-mail #3 : email3@gmail.com
- SMS #1** : 408-555-1000
- SMS #2** : 408-555-2000
** SMS stands for Short Messaging Service which is synonymous with text messaging.

Note: These entries are prioritized. Put your primary information as #1, your second as #2, etc.

You last reviewed this information on: 04/20/2024
I have reviewed the information on this page ☐ ←
Save Changes

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**Packet Network Update**

2024 Year End Review

Jim Oberhofer, KN6PE
Revised 30 November 2024

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Highlights -- Outpost and PackItForms

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### What's in the box?

- SCCo Integrated Packet Installer 163C
  - \*\*\* PRERELEASE \*\*\*
  - Outpost Packet Message Manager
    - GUI-based interface for managing packet communications
    - Makes using packet as simple as using e-mail
  - PackItForms
    - Next generation HTML-based forms for use with Outpost
    - Manual operation without Outpost

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### SCCo Installer v163C
September 2024

**PackItForm 3.16\***
- Various forms and .pdf updates
- Even better manual operation support
  - Auto-logging of sent and received messages
  - Updated ICS-309 log maintenance
  - Enhancements and bug fixes from user feedback

**Outpost v3.8.6\***
- Resolves 3 reported defects; adds 6 requested changes, including…
  - Signature update on the ICS-309 comm log
  - Address book address expansion with sent messages

\*See the release notes for details

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## What's new
(or 6 things to make your packet life easier)

1. Setting up Message ID prefix for Tac Calls
2. Packet Forms and Manual Packet
3. Message search
4. Monitor RF Packet Traffic
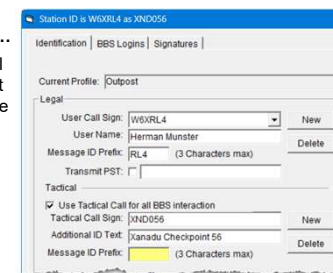5. Fixing JNOS extra line feeds
6. Packet Field References

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## 1. Setting up Message ID prefix for Tac Calls

**Situation:** You are deployed with a tactical call. You get a call from the EOC that the tac call message ID is not set up correctly.

**Problem:** Message IDs are both unique and help reference the sending station.

**Solution:** **With Outpost**
1. Select **Settings > Station ID...**
2. When you fill in your FCC Call sign, Outpost picks up the last 3 characters of your call as the Message ID Prefix.
3. When setting up the Tactical Call, you need to fill it in yourself.
4. Ask your shift supervisor or exercise coordinator for what this field value should be.



**Examples:** Monthly Exercise:   **Tac Call**=XND056   **Msg ID Prefix** = X56
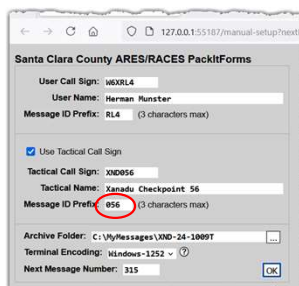City Deployment:    **Tac Call**=CUPDZA   **Msg ID Prefix** = DZA

---

## 1. Setting up Message ID prefix for Tac Calls

**Situation:** You are deployed with a tactical call. You get a call from the EOC that the tac call message ID is not set up correctly.

**Problem:** Message IDs are both unique and help reference the sending station.

**Solution:** **Manual Operations**
1. Find and click on manual.cmd
2. PackItForms picks up the last 3 characters of your FCC call as the Msg ID Prefix.
3. The Tactical Call Msg ID Prefix does the same, but may not be correct.
4. Ask your shift supervisor or exercise coordinator for what this field value should be AND change this field if necessary.



**Examples:** Monthly Exercise:   **Tac Call**=XND056   **Msg ID Prefix** = X56
City Deployment:    **Tac Call**=CUPDZA   **Msg ID Prefix** = DZA

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## 2. PackItForms
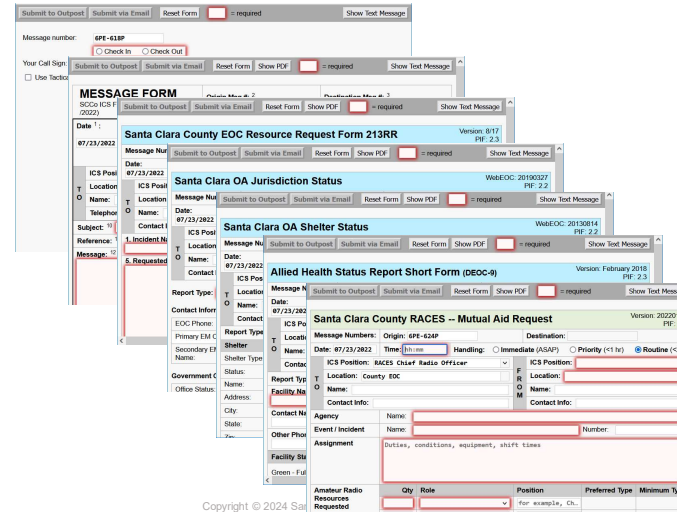
## County Use of PackItForms

- Santa Clara County PackItForms contains these **public** forms
  1. *XSC Check-In/Out Message* Form
  2. *XSC ICS-213 Message* Form adapted for Santa Clara County to transmit messages.
  3. *XSC EOC-213RR Resource Request* Form – Requests specific resources needed to support an emergency.
  4. *XSC OA Jurisdiction Status* Form – Reports jurisdiction emergency situation status to county OEM.
  5. *XSC OA Shelter Status* Form – Reports information and status on shelters opened in the cities to county OEM.
  6. *XSC Allied Health Facility Status* – Reports information & status of private Skilled Nursing facilities to SCC Public Health Department.
  7. *XSC RACES Mutual Aid Request* Form – Used by a jurisdiction to request a RACES Mutual Aid.
- The SCC Installer program automatically installs these packet forms along with Outpost.
  - Additional forms may be provided by your EC

## Updated PackItForm Defaults

| PackItForms | Handling Order | TO ICS Position | To Location |
|---|---|---|---|
| ICS 213 Message Form | -- | -- | -- |
| EOC Resource Request 213RR | -- | Planning Section | County EOC |
| OA Jurisdiction Status | Immediate | Situation analysis Unit | County EOC |
| OA Shelter Status | Priority | Mass Care and Shelter Unit | -- |
| Allied Health Status | Routine | EMS Unit | **PHDOC** |
| RACES Mutual Aid Request | Routine | RACES Chief Radio Officer | County EOC |
| HAvBed Report | Immediate | EMS Unit | **PHDOC** |
| Medical Facility Status | Immediate | EMS Unit | **PHDOC** |
| Resource Request Form #9A | *Obsolete -- Replaced by EOC Resource Request 213RR* | | |

- Aligns with the *RACES Recommended Form Routing Cheat Sheet; updated* **March 2024**
- Updates are in **BOLD** text
- Fields can be changed at message create time
- Always double-check the *RACES Recommended Form Routing Cheat Sheet* for your specific situation

## 3. Message Search

**Situation:** This assignment has been in place for several shifts with plenty of packet message traffic already passed.

**Problem:** Now, someone askes for a copy of a message you received. Where is it?

**Solution:**
1. On Outpost, click on the **Search** menu.
2. Enter some text that you know is likely part of the message, which fields it is in (or check all fields), and whether you want to check this or all folders.
3. Press **Search**
4. For ☑ **All Folders**, **Type** field shows the message location.
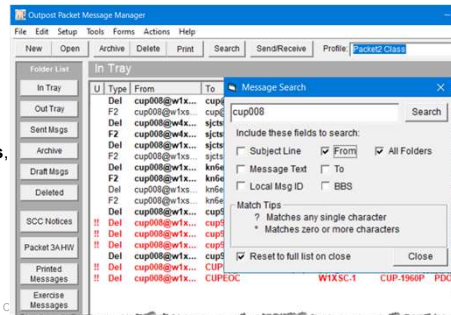
## 4. Monitoring Packet traffic

**Situation:** Some users like to watch what is going on with on a frequency in between Send/Receive Sessions to see if the frequency is clear.

**Solution:**
1. From Outpost, **Tools > Interactive Packet > Serial / Com Port**.
2. From Ipserial, Tools > Options. Check ☑ **"Turn on Packet Monitoring (MON ON)…"**.  Press **OK**.
3. When you press **Connect**, Ipserial.exe sends the MON ON command to the TNC to start monitoring.
4. When Outpost starts a Send/Receive session, it requires the serial port.
   - it tells Ipserial.exe to disconnect.
   - It opens the com port and sends the necessary TNC & BBS commands.
   - When done, it tells Ipserial to reconnect to the Com Port.
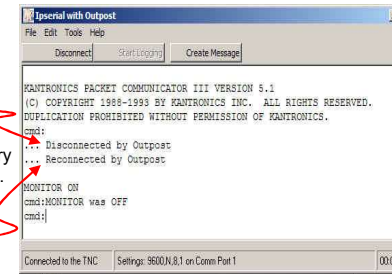
## Slide 45

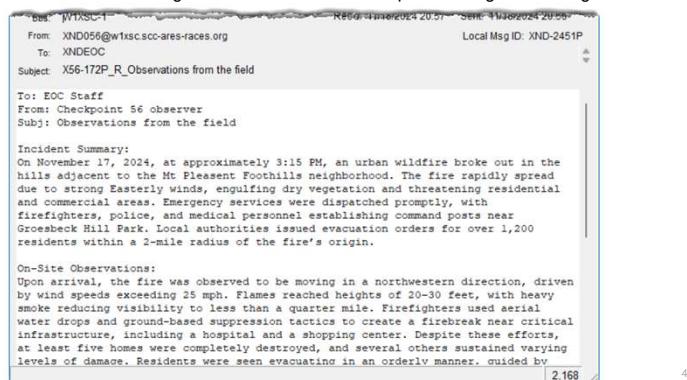**5. Fixing JNOS Extra Line Feeds**

*** DRILL TRAFFIC ***

**Situation:** JNOS causes message text lines greater than 127 characters to have a CR/LF inserted regardless of where it is in a sentence or word. PackItForms handles this situation nicely. But what happens if an *Informal Message* is sent? This is what it could look like…



## Slide 46
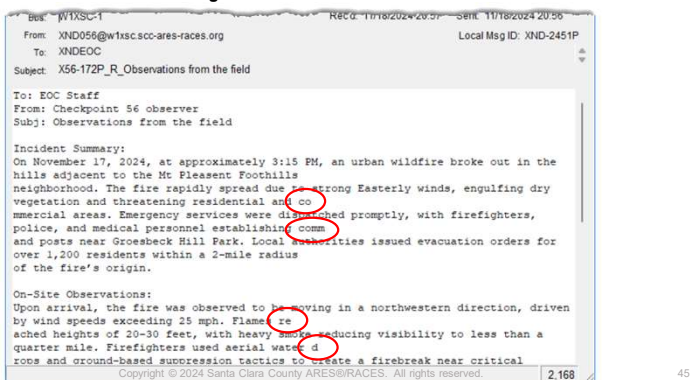
**5. Fixing JNOS Extra Line Feeds**

*** DRILL TRAFFIC ***

**Solution:** If you come across this situation, try this:
1. In the message form, press **View > JNOS Line Fix (BETA)**
2. This change is not permanent and cannot be saved.
3. Pressing the forms' **Print** button will print the original message.



## Slide 47

**5. Fixing JNOS Extra Line Feeds**

*** DRILL TRAFFIC ***

**Solution:** 4. But, pressing **File > Print** will print the corrected version.



## Slide 48
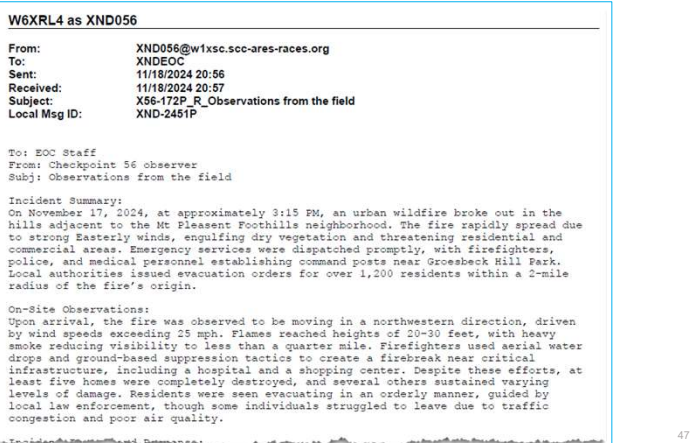
**6. Amateur Packet Radio Field Reference, Type III**

**What is it**
- an Unofficial SCCo RACES reference.
- Provides a reminder (job aid) for how to perform tasks that need to occur during a packet field deployment.
- Helps ensure task consistency, completeness, and operational alignment with SCCo RACES policies and procedures.

**What it is not**
- the only source of information on which you should rely.
- an official SCCo RACES deliverable.

**Amateur Packet Radio Field Reference, Type III**

**For SCCo RACES Responders**

October 2024



1/20

## Slide 49

### 6. Amateur Packet Radio Field Reference, Type III

**Amateur Packet Radio Field Reference, Type III**

For SCCo RACES Responders

October 2024

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https://bit.ly/PacketT3

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## Slide 50

### 6. Amateur Packet Radio Field Reference, Type II

**Amateur Packet Radio Field Reference, Type II**

For SCCo RACES Responders

October 2024

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https://bit.ly/PacketT2

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## Slide 51

# mpmp, P1 and HF Credentials & SHARES

Mark Laubach, K6FJC

14-Dec-2024

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## Slide 52

### Monthly Packet Messaging Passing Practice
January to November stats

| | Jan | Feb | Not Held Mar | Apr | May | Jun | Jul | Not Held Aug | Sep | Oct | Nov | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Participants** | 24 | 21 | | 19 | 20 | 16 | 11 | | 16 | 27 | 15 | **169** |
| | | | | | | | | | | | | |
| **Messages by participant by Type** | | | | | | | | | | | | |
| ICS213 | 29 | 29 | | 57 | 40 | 28 | 33 | | 39 | 40 | 42 | 337 |
| EOC213RR | | | | | 20 | | 14 | 11 | | 19 | 27 | 21 | 112 |
| Shelter Status | | | | | 20 | | 11 | | | 28 | | 59 |
| Allied Health Status | | 22 | | | | | | | | | | 22 |
| RACES Mutual Aid | 26 | | | | | | | 11 | | | | 37 |
| CSV | 26 | | | | | 14 | | | | | | 40 |
| Op-to-Op & Other | | 281 | | 249 | 205 | ? | 38 | | 216 | 311 | 208 | 1508 |
| | | | | | | | | | | | | |
| **Total Messages** | 816 | 768 | | 674 | 577 | 387 | 330 | | 617 | 913 | 602 | **5684** |

**You can review all past practices on the MPMP Training Page:**
https://www.scc-ares-races.org/training/practice/monthly-packet-message-practice/monthly_packet-message-practice.html

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## Packet Credential Changes

- Packet Operator Type I (P1)
  - <u>Removing</u>: *out of county assignments*
  - <u>Moving out</u> of P1 to a new area of focus:
    - *Set up, manage, and troubleshoot a JNOS-based packet BBS system, running on Ubuntu, etc.*
  - Changing focus to W5XSC BBS to set up and operate for a training or exercise event, with instructions from net team
  - Refining knowledge items, digipeaters and nodes, and other problems
  - Etc.
- Motivations
  - P1 should be on parallel with other Type 1 credentials, e.g., specialist and plan, design, deploy, train, …
  - It's a lot of work to complete existing requirements
  - P1 credential != county BBS sysop
    - Doesn't need to incorporate SCCo BBS sysop/network

- **When: next Credential Program Handbook update**

## Member of County Networking Staff

- The network team is looking for a few "good people"
  - In discussion likely in the form of a member of network staff position posting (likely)
  - Discussed new endorsement not the way to go
- Recommendation from CRO and Pkt Manager
- Prerequisites: P2+, demonstrated team player
- Not for everyone, interview will be required with credential evaluator and network team member – think of a position posting
- Successful interview,, candidate will be assigned mentor
- County BBS knowledge and demonstration (for all candidates)
  - Building Ubuntu-based JNOS system to county configuration
  - BBS JNOS sysop privileges demonstration, message and notice management, log maintenance, Ubuntu tcp/ip networking, etc.
  - Knowing what and what not to touch
- Additional skillsets desired among one or more of the following
  - Network management, Network security, firewalls, monitoring, Network routing, email (configuration, spam), devops, analysis, logging, maintenance and upgrades, SCCo BBS operational knowledge, etc.

**This is all under consideration and development**

## Changes in County EOC Radio Room
### HF Radio Remove / New State-funded HF Technology

- New radio technology has reduced the need for HF radio users to deal with the complexities of HF propagation (solar conditions, time of day, antenna orientation, etc.)
  - State has called this SHARES for SHAred RESsources
  - SCCo OEM has two rigs: EOC radio room fixed and mobile unit

- The use of new technologies all but eliminates the need to be concerned about HF propagation for state-wide EmComm purposes.

- The need for a three level HF Credential is being removed from the Credentialing Program and a "SHARES Radio Operator Endorsement" is being added to the next version of the Credentialing Program Handbook.

## Changes in County EOC Radio Room
### HF Radio Remove / New State-funded HF Technology

- The "SHARES Radio Operator Endorsement" will be available to anyone holding the EOC Radio Operator Endorsement.

- Early next year we will offer a SHARES HF Radio Orientation class for those interested.

Quick Overview
- Based on Codan Communications equipment (Australia)
- Limited to state civil defense and emergency management agencies and some select agencies within the state of California.
- Shared channels in the 2 to 8 MHz range. Access to 10 channels providing point-to-point emergency radio coverage across the state. 24x7 Link Quality Analysis and Automatic Link Establishment to eliminate ToD propagation concerns
- Operates in accordance with FCC Rules Part 90 – Private Land Mobile Radio Services (primary) and Part 97 Amateur
- All "push button"

## SHARES Base Station HF Equipment



- Pactor Modem
- Codan Envoy Transceiver
- Power Supply
- Desk Console

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## SEMS - Reminder
### Standardized Emergency Management System



- Field (IC)
- Local Government /City
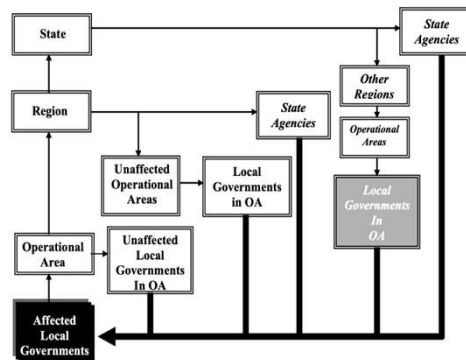- Operational Area/County
- OES Region
- State

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## SEMS General Flow of Requests and Resources

- OA encompasses a county
  - 58 counties
- Six mutual aid regions

NOTES
- Local governments may request mutual aid directly from other local governments where local agreements exist.
- Discipline-specific mutual aid systems may have procedures that provide additional methods of obtaining state resources.
- Volunteer and private agencies may be involved at each level.

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# Weekly Packet Practice

Steve Roth, KC6RSC
Revised 11-Dec-2024

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## Weekly Packet Check-Ins (Unique Call Signs) — Slide 61

Weekly Packet Check-Ins
(Unique Call Signs)

Legend: SPECS, SVECS, Combined

## Percent of Correct Messages (≥90%) — Slide 62

Percent of Correct Messages (≥90%)

Legend: SPECS, SVECS, Combined

## Average Score — Slide 63

Average Score

Legend: SPECS, SVECS, Combined

## Multi-Year Comparison — Slide 64
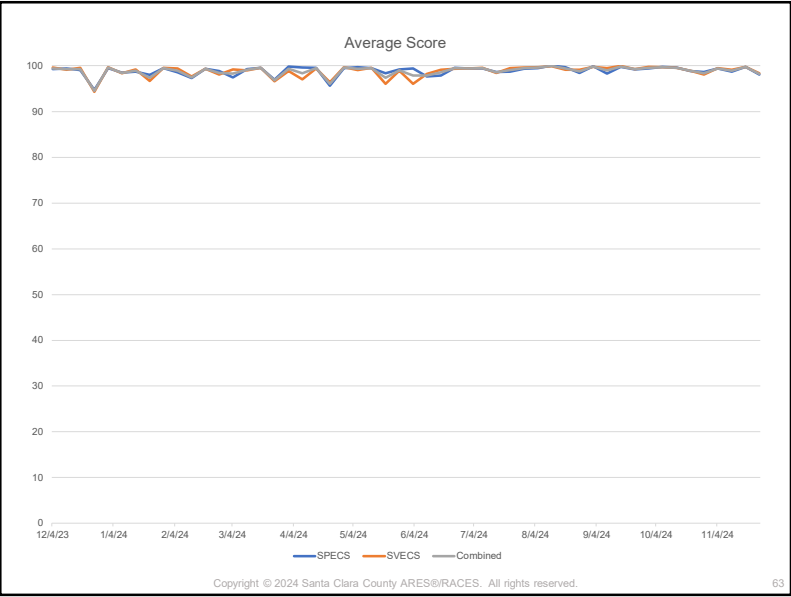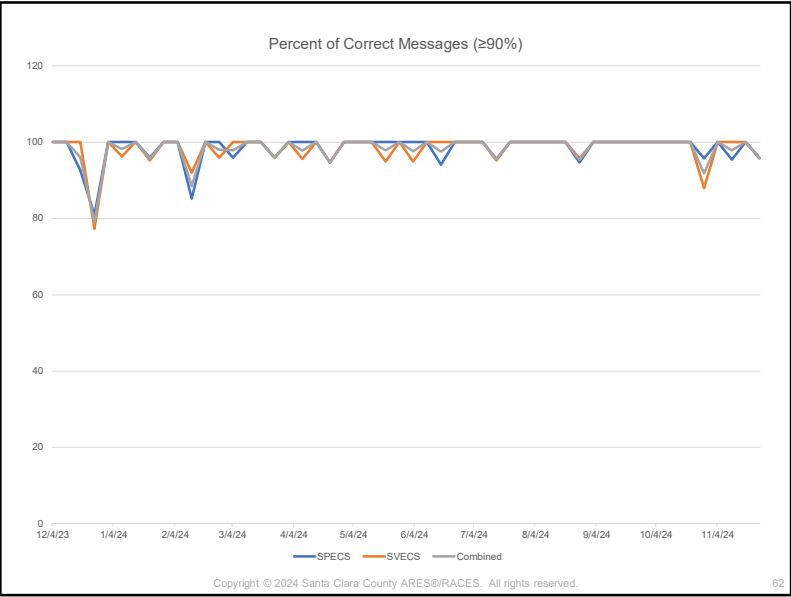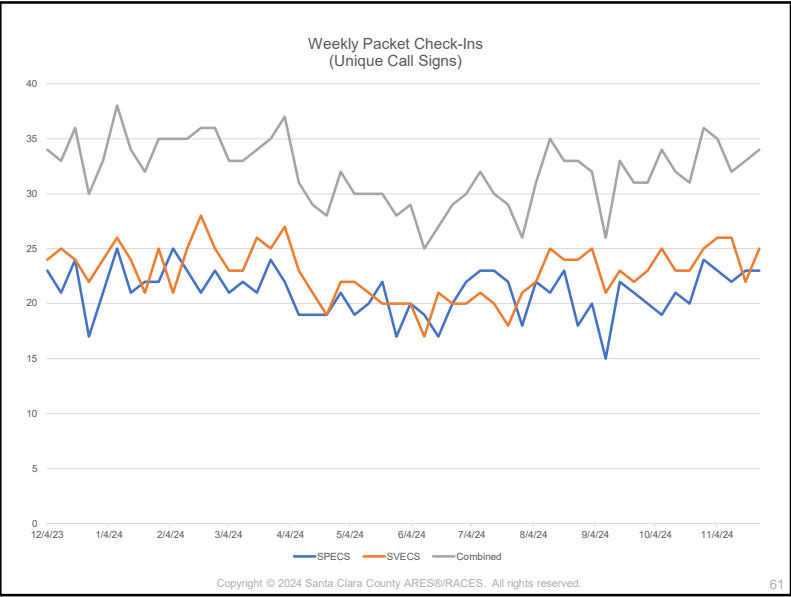
### Multi-Year Comparison

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| Total Messages | 2116 | 2844 | 3138 | 3226 | 3200 | 2932 | 2408 |
| % Correct | 93.2% | 93.7% | 95.5% | 96.6% | 88.4% | 83.1% | 98.3% |
| Unique Calls | 25.5 | 29 | 31 | 30 | 27.4 | 34.3 | 32.0 |

## Mailbox Full — Now What?

You are assigned to a rarely used station. You connect to the BBS, and it has 142 messages waiting.  That will take forever!

1. Abort the connection
2. Switch to alternate BBS
3. Connect manually, list with LL.  If the backed-up messages are obsolete or unimportant, kill them with K.

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## Can't Wait for Bulletins to Download?

You're waiting for a critical message but Outpost wants to download the XSCPERM bulletins.  That will take too long!

1. Abort the connection
2. Outpost: Setup → BBS → Receiving
3. Turn off "Retrieve Bulletins" checkbox. (Don't forget to turn it back on later!)

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# Switching between RF and TCP/IP network access in Outpost
## Using Profiles extensively

Andreas Ott, K6OTT
Revised 11-Dec-2024

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## BBS settings and access paths

- you are in an EOC or tactical location
- you know your primary and secondary BBS, your tactical call, your FCC call – and know how to configure all this in Outpost
- your main access to the BBSen has been over RF
- you recently got connected to the SCCo Systems TCP/IP Subscriber Network (or your EOC location has a wired Ethernet connection to our network)
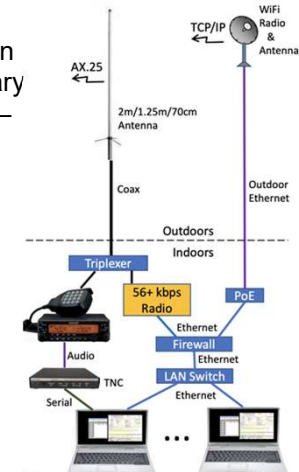
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## Workflows on RF

- No Issues: you are using your primary BBS over RF
- primary BBS "unreachable": you manually switch to the secondary BBS, and announce this fact on a net to the County EOC (and other stations) so that they can adjust sending you messages to your secondary BBS address
- primary BBS "reachable": you have the choice of continuing on the secondary BBS or switching back to the primary BBS (same…, announce it, so others know where to find you)

→ your easiest way of "switching around" is by using Outpost Profiles

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## Create RF Profiles

- the default Outpost profile after new install is "Outpost"



- create new profile (naming convention below)
- for your primary BBS, device and StationID
- test it!
- repeat for your secondary BBS, then test some more!
- practice switching between profiles, do not forget to "switch" and verify the radio frequency at the same time
- switching between RF bands on the same BBS without changing the profile

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## Profile Parameters

- BBS name
- device/connection
- Interface name
- StationID
  (your callsign, tactical or FCC)

- Create, save as (use ~ in profile name as separator)

Examples:
- W1XSC~KPC3~COM5FTDI~K6OTT
- W1XSC~TELNET-W1XSC~K6OTT

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## Parameter details
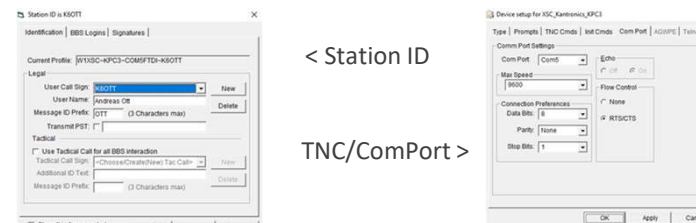


< Station ID

TNC/ComPort >

finally: Save it

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## Create Telnet Profile

- for your primary BBS, telnet connection and StationID
- add username and password, remove colon ":" from password prompt field
- test it!
- repeat for your secondary BBS
- test some more!

- when switching back to any RF profile, do not forget to "switch" and verify the radio frequency to match the BBS frequency on that band at the same time

## Telnet details



IP, port >

prompt >
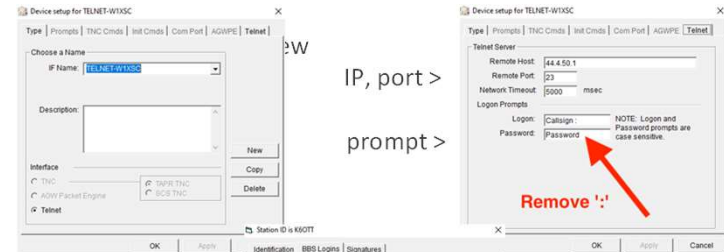
BBS username and password >

Remove ':'

## Workflows on Telnet

- No Issues: you are using your primary BBS over telnet
- primary BBS "unreachable": you manually switch to the secondary BBS, and announce this fact on a net to the County EOC (and other stations) so that they can adjust sending you messages to your secondary BBS address
- primary BBS "reachable": you have the choice of continuing on the secondary BBS or switching back to the primary BBS (same…, announce it, so others know where to find you)

→ your easiest way of "switching around" is by using Outpost Profiles

## Switching around

Always verify Outpost status bar on the bottom
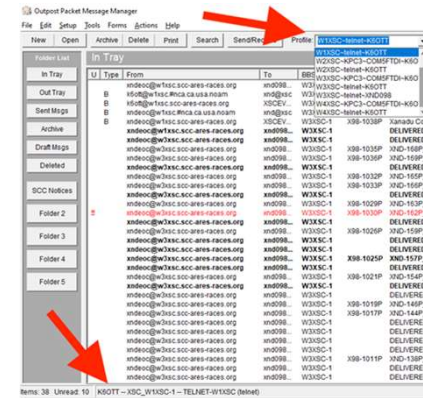
## References

For Outpost, see training slide decks from SCCo ARES/RACES Packet Operations classes

Packet Operations - Type III, Part A
Packet Operations - Type III, Part B
Packet Operations - Type II

and of course the Outpost Documentation

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## Safety issue observed:
## no fuses in power cables
### Batteries are no fun

Andreas Ott, K6OTT
Revised 11-Dec-2024

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## Energy content in a battery

- Energy content in a (SLA) battery:
  $3.6 * \text{voltage} * \text{mAh} = \text{Energy [Joule]}$
  Example: SLA 12V@18Ah
  $3.6 * 12 * 18{,}000 \approx 777 \text{ kJ}$
  (approximate energy needed to boil 1/2 gal of water from room temp)
- Energy density in LiFePO4 battery:
  > 3x of SLA battery by weight, also higher load current possible

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## The Big Short

Now picture this: if your battery shorts out, you will set free most of the energy in a fraction of one second (aka. boil the water in < 1 second). Until something fails, such as the wire melting, or the battery liquids heat past their boiling point, with "steam" quickly escaping.

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## Rapid Unscheduled Disassembly

Escaping electrolyte steam usually leads to the entire battery exploding. [*]
Good engineering practice is to insert something into the circuit that will fail before it turns into an incident, preferably a protective device such as a fuse. "All circuits shall have fuses".

\* "Don't try this at home - go to a friend's house."

## Fuses to the rescue
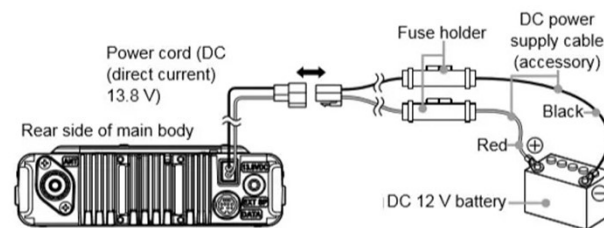


image credit: K0BG/Yaesu

Protecting battery and load (equipment)

## Charge controllers with electronic load limiters

Check the manual: They will recommend minimum wire sizes *and* fuses, at least at the battery and the power source!

image credit: Renogy

DC Load:

20 amps

cutoff
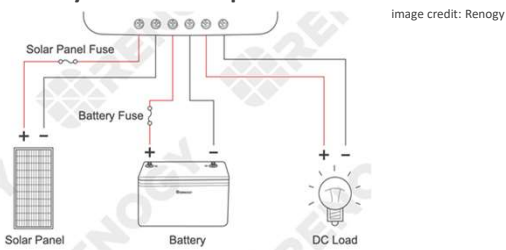
## Working with a Served Agency
### Golden Eagle 2024

Jeff Grafton, AJ6XZ
Revised 10-Dec-2024

### Golden Eagle 2024: Hellyer Park C-POD

- Simulated M7.5 earthquake
- County OEM established Type III C-POD in Hellyer Park
  - Simulated cell phone outage at site
- RACES mobilized to provide comms between C-POD site and EOC

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### Golden Eagle 2024: Hellyer Park C-POD

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### Golden Eagle 2024: A few surprises

- RACES wasn't in the org chart...

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### Golden Eagle 2024: A few surprises

... or the site map
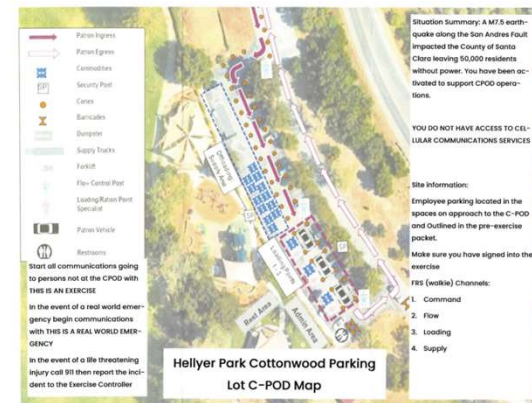
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## Golden Eagle 2024: Field Setup

## Golden Eagle 2024: More surprises

- FRS radios were used for on-site comms
- The IC expected RACES would handle all comms, including FRS
- RACES staff had not been briefed on use of FRS
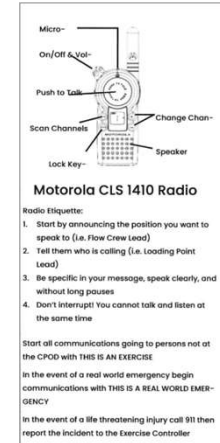
## Golden Eagle 2024: Message flow

- Many incident staff (including IC) were unfamiliar with forms and message flow to EOC
  - RACES provided blank forms and coaching
  - Handing off the *Recommended Form Routing* Cheat Sheet worked wonders

## Golden Eagle 2024: Operations

- RACES sent and received multiple 3rd-party messages over packet and voice
  - ICS-213
  - 213RR with routing slip
  - Informal
- Cross-trained operators
  - Able to fill in while others were coaching incident staff or taking breaks

## Golden Eagle 2024: Takeaways

- Exercising with served agencies is invaluable
- Keep current on training and practice so you know how message flow works
- *Semper Gumby!*

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# W2XSC BBS Failure
# June 8th – 16th

Tim Howard, KE6TIM
Revised 16-Nov-2024

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## Initial Evaluation

- Problems with W2XSC were reported

- A number of remote troubleshooting steps were taken.
  - The network connection between the BBS PC and the other network infrastructure at the site had failed.
  - The JNOS BBS, the TNCs, and the Radios were fully functional.
  - The BBS was usable as a standalone BBS without external connectivity to the rest of the network.

- It was determined that a spare computer, data switch, and data cable should be taken to the site.

- Because of the remote location of the site, other parts, tools, and equipment were collected for the trip.

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## Plan for Trip to Site

- Over a one hour drive one-way

- Take anything you might need. Spare parts for repair and also backup monitor, keyboard, mouse, tools, etc.

- Need a high clearance vehicle in good weather, 4WD at other times.

- Because of the remote location we want to send at least two people.

- It took a couple of days to get the material together.

- The keys to access the site were not readily available.

- Once on site, it was quickly determined there was a cable issue.

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## Initial Visit

- Cable was replaced
- TNC Firmware updated
- General cleaning and inspection of cabinet
- Remote testers checked all radio, BBS, and email connections to the site
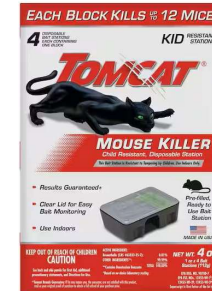- The site was up and back to normal operation
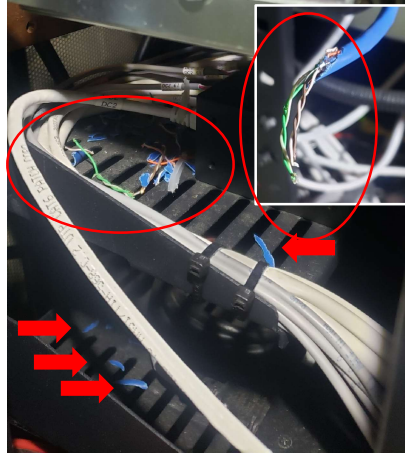
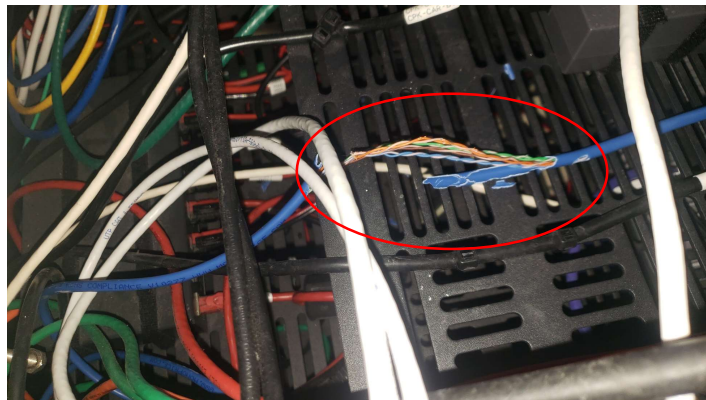97

## Less than 16 hours later

- The BBS failed with the exact same symptoms. Remote diagnostics indicated a similar failure.
- A second visit the next day was scheduled with spare parts, a hardened data cable, and mouse deterent.

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## Second Visit



- The same data cable was chewed breaking wires

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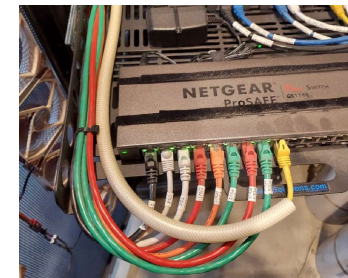


- The data cable was replaced with the shielded cable.
- No additional problems with mice eating cables
- Site owner has placed more traps and sealed any openings found. Reminded tenants to keep door closed.
- Thanks to:
  Thomas Leibold – spare parts and technical expertice
  Bertrand Achard – extra tools and computer monitor
  Tim Howard – driver and support

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## Additional W2XSC Issues

- PG&E PSPS power shutdown
  - Generator started but shutdown failed due to overheating
  - Fan Blades were broken providing no cooling air
  - Mice or larger rodents had got inside the fan shroud and when engine started the fan blades broke off.
  - Our batteries did not work due to several years of use with numerous PG&E and generator issues

- Site owner has enclosed all openings to the generator with wire mesh to allow air flow but block mice and other rodents from access

- New batteries are on order and when they arrive a site visit will be scheduled

## Q&A

All Training Staff

## Thank You!

Please check your email and follow the instructions to complete and return the Course Evaluation.

To get course credit the Course Evaluation is due by next Saturday.

If you have questions or feedback about this or other training activities, you can join our Training discussion group.
https://scc-ares-races.groups.io/g/training
This is a moderated group.

**See you at a training class or exercise next year!**