

USE AND DISTRIBUTION NOTICE

- Santa Clara County RACES authorization is granted to use and duplicate this material as-is as long as this page and the copyright notices on each page are included, acknowledging Santa Clara County ARES/RACES as the holder of the copyright.
- Permission is granted to adapt this presentation to your needs as long as you acknowledge our copyright and include a note similar to "adapted with permission from Santa Clara County ARES/RACES"
- For additional information on training or any of our programs send an email to: info@scc-ares-races.org

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

1

1



Packet Type II



Santa Clara County ARES®/RACES/ACS
Last Updated: 9 October 2023

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

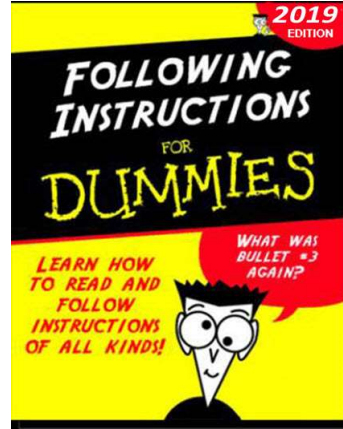
© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

2

2

HOUSEKEEPING

- Introductions
- Pen/pencil & paper
- Cell phones
- Side conversations
- Questions
- Corrected Handouts
- Breaks
- Restrooms (code: 9033)
- In case of emergency
- No wandering or exploring other areas of the building.



© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

3

3

Overview: Packet Classes

Packet Type III, Part A

- Role of the Packet Operator
- Packet Network Overview
- Packet Network Components
- Packet Station HW & SW
- Accessing the Network
- Standard Workflow

Packet Type III, Part A+

- Packet Operations Self-Paced Exercise workbook

Packet Type III, Part B

- Packet Operations
- Diagnosing Setup Problems
- Selecting a BBS
- Creating Messages
- Event Documentation
- Productivity Hints
- Exercises

Packet Type II: Advanced Techniques, such as County EOC Packet Station Setup & Operations, Operating without Outpost.

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

4

4

Learning Objectives

At the end of this class, you should be able to:

- Understand the setup and operation of the county EOC radio room packet station
- Set up and use a terminal program to access a BBS
- Without Outpost...
 - Connect to a JNOS BBS
 - Send and receive plain text messages with BBS commands
 - Send and receive PackItForms with BBS commands

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

5

5

A Note on receiving Class Credit

To get credit for this class, there are 3 things that you need to do:



1. Attend the classroom session.
2. Complete the evaluation by the Saturday, one week after the class. See the instructions at the end of this material.
3. Complete the exercise by the Saturday, one week after the class.

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

6

6

Fictitious Examples

- We use fictitious call signs in this presentation to avoid SPAM
- W6XRL4: Herman Munster
 
- XNDEOC: City of Xanadu Emergency Operations Center
 

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

7

7

What about Xanadu?

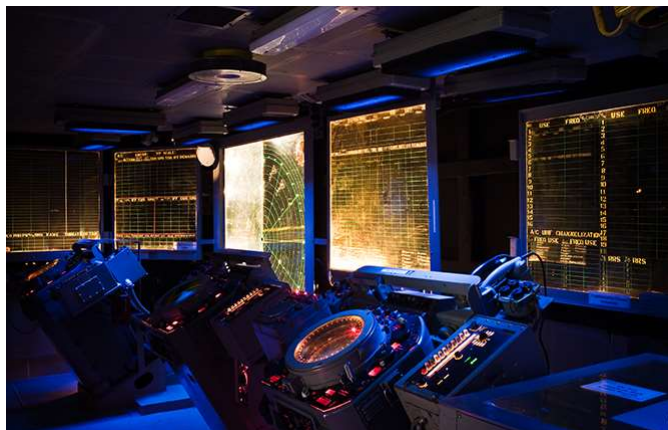
- Xanadu received lasting fame in the western world thanks to the Venetian explorer Marco Polo's description of it in his celebrated book *Travels* (c. 1298).
- Distant and mysteriously lost Xanadu, thus, came to represent a place of mystery, splendid luxury and easy living.
- Fortunately, you get to visit Xanadu only during Packet classes and Packet exercises.
- Only use an XNDxxx tactical call that has been specifically assigned to you for an exercise or training event and then only for the duration of that event, including any homework follow-up.
- **PLEASE NEVER USE** XNDxxx tactical calls during any other time. Instead, use one of your City's extra tactical calls for practice (with your EC's permission, of course).



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

8

8



How to process high volume traffic efficiently

COUNTY EOC PACKET STATION SETUP & OPERATIONS

© Copyright 2011-2023 Santa Clara County ARES@RACES. All rights reserved.

9

9

Packet Net Operations at County EOC

- County message handling can be non-stop action
- Have separate send & receive stations
- Learn to use the automation
 - Automated polling every 5 minutes by Telnet
 - Automated ICS 309 Logging
- Watch message handling order
- Move the messages to the Traffic Manager as quickly as possible
- Balance outgoing and incoming traffic
- Follow the *SCCo Radio Room packet procedures*

© Copyright 2011-2023 Santa Clara County ARES@RACES. All rights reserved.

10

10

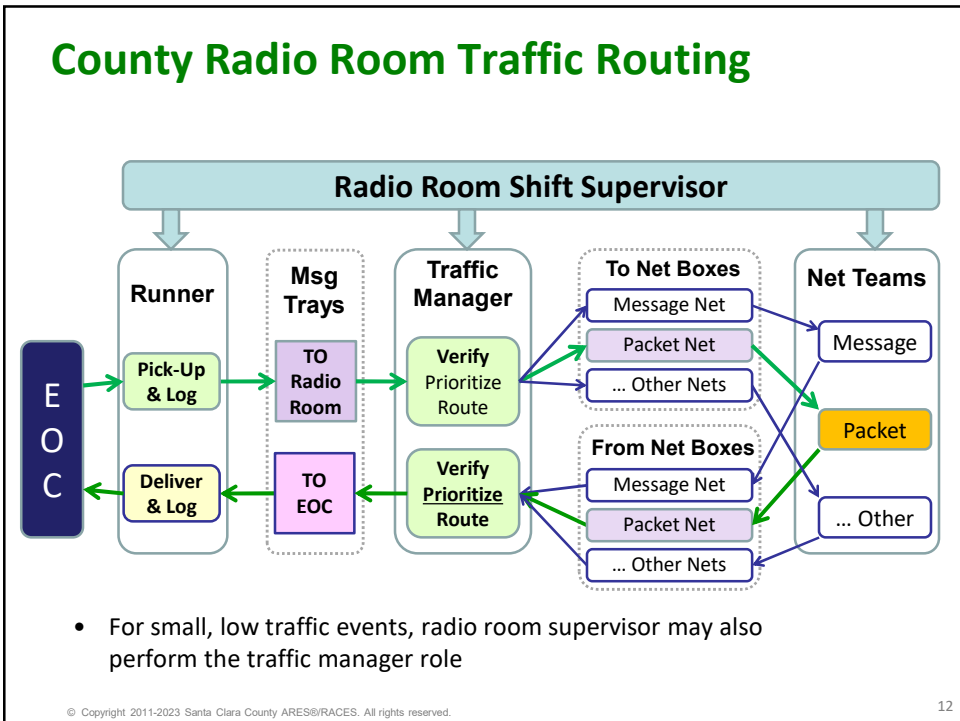
SCCo Packet Net Reference Binder

What's inside

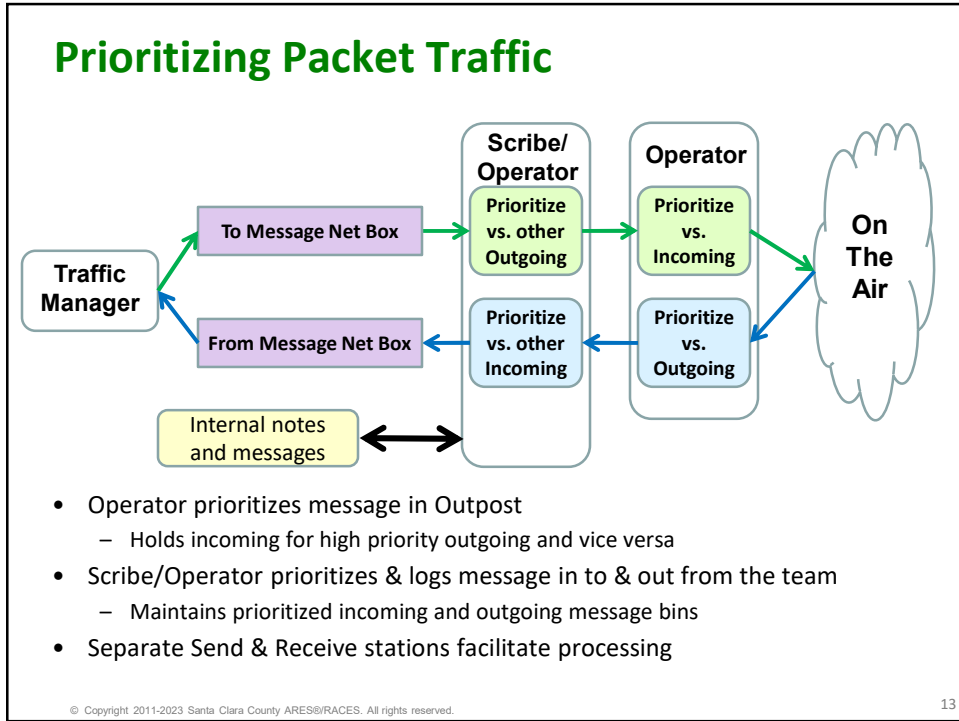
- There is a “standardized” binder for every position in the SCC EOC, including *each position in the RACES radio room*.
- The **Packet Net** binder contains the material from the previous binder, with updates in progress.
- General content includes:
 - activation and operation
 - end-of-shift and demobilization
 - Packet-specific activities

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved. 11

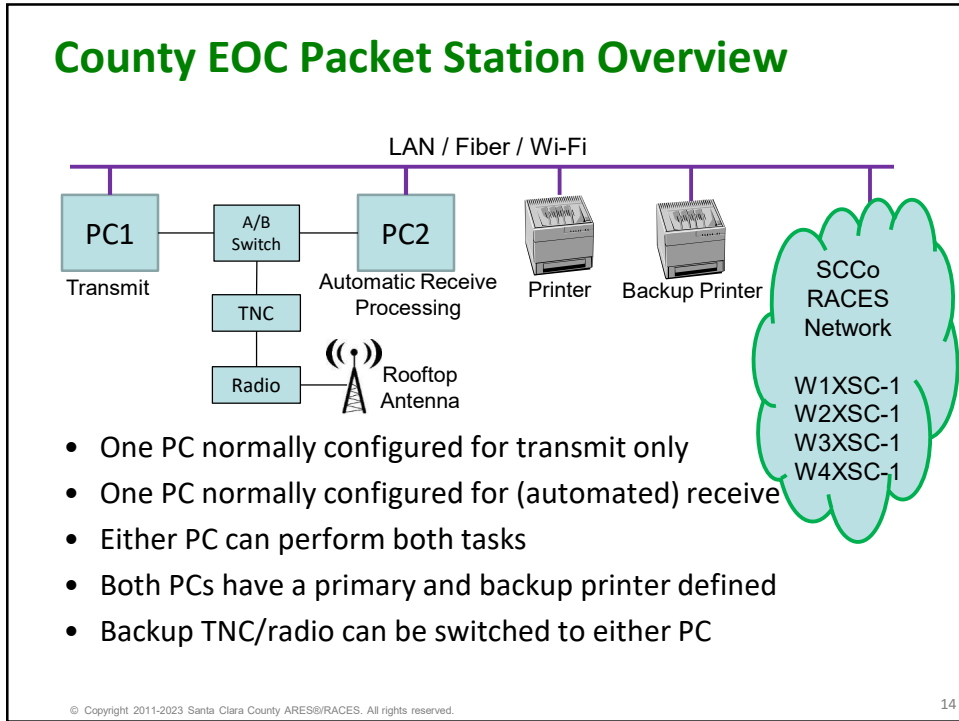
11



12



13



14



INTERACTING WITH THE BBS WITHOUT OUTPOST

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

15

15

Its all about control with Text Commands

- Simple text commands control the **TNC**
 - **MYCALL** *callsign* = set the TNC's Mycall command to your *callsign*
 - **CD software** = set Carrier Detect mode to software
 - **C** *callsign* = Connect to station *callsign* (ax.25 address)
- Simple text commands control the **BBS** mailbox
 - **SP** *address* = Send a Private message to an *address*
 - **LA** = List All messages in this area (mailbox)
 - **R** *n* = Read message number *n*
- Outpost simply automates the process of typing the commands to the TNC (to connect) and then to the BBS (to send/receive messages)
 - Watch the Outpost session window to see what it's doing
 - View the Outpost transaction log later to see what it did
 - Actions > View Outpost Data Directories > logs > transactionYYMMDD.log

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

16

16

Sidebar: Outpost Logs

From Outpost: *Actions > View Outpost data directory > logs*

The screenshot displays two Notepad windows showing log data. The left window, titled 'session211015.log', contains a list of system messages such as 'Using Call Sign KN6PE', 'Using TNC setup XSC_Kantronics_KPC3-Plus', and 'BbsConnect: Connected to W1XSC-1 as user KN6PE'. The right window, titled 'transaction211015.log', shows a sequence of commands and responses, including 'cmd:D', 'Can't DISCONNECT, A Link state is: DISCONNECTED', and 'cmd:connect W1XSC-1'. Below the logs is a 'Log Settings' dialog box with 'Options' checked. Under 'Options', 'L1: Send/Receive Session window logging' is selected with a checkmark, while 'L2: Send/Receive Interface data trace', 'L3: Send/Receive diagnostic trace', and 'L4: Main program diagnostics trace (restart Outpost to apply)' are unchecked. A green arrow points from the 'L1' option to the log windows. To the right of the dialog, text reads: 'FYI...Log Settings has L1 selected by default Optional: select L2 for additional info'. The number '17' is in the bottom right corner of the screenshot area.

17

Everything Can Be Done Manually

- Why would I want to/need to?
 - Outpost is not installed or installed incorrectly; no administrative access to PC
 - Browse the BBS to read bulletins
 - Gain deeper understanding of how packet radio works
 - Perform clean up or diagnostic activities on your setup or to maintain the BBS
- All you need is a terminal emulator program
 - Suggested: PuTTY (free download) <https://www.putty.org/> ... or just do an Internet search for "PuTTY"
 - But any terminal emulator will do ...
- The following examples will use PuTTY
 - Select and copy: highlight/select (not <ctrl>C)
 - Paste: Right-click (not <ctrl>V)

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

18

18

Summary of Steps to be Discussed

- What you need to know to operate without Outpost
- Setting up PuTTY for BBS access (serial)
- The connection basics
 - Start of shift: Configure optimized TNC settings
 - Per session: Using you FCC call sign, -OR-
 - Per session: Using a tactical call sign (plus your FCC call sign)
 - End of shift: Restore default TNC settings
- Managing Messages on JNOS
 - Access user and bulletin areas (mailboxes)
 - Read a message
 - Send a message
- Reading notices and bulletins on JNOS
- Working with PackItForms

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

19

19

What you need to know

Operations without Outpost

1. Connect Parameters
2. TNC Standard Settings and Manual Workflow
3. TNC User Commands
4. TNC Init Settings
5. BBS User Commands
6. BBS Init Settings

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

20

20

1. Three Connect Parameters

Operations without Outpost... need to know

- **Call Sign or Tactical Call of the user**

example : W6XRL4

XNDEOC

- **TNC Comm Port Settings**

example : COM3,9600,8,N,1

COM5,9600,7,E,1

- **BBS Connect Name**

example : W1XSC-1

W3XSC-1

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

21

21

2. TNC Standard Settings

Operations without Outpost ... need to know

- SCCo RACES determined the optimum TNC parameters for our BBS system that significantly improves message traffic throughput.
- Document contains parameters for both **Outpost** and **Manual** sessions. Details of each parameter are explained.
- See: <https://www.scc-ares-races.org/data/packet/index.html> → Application Notes → Standard TNC Parameter Settings

... and specifically the section titled: Standard TNC Settings for Manual BBS Sessions

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

22

22

2. TNC Standard Settings

Operations without Outpost ... need to know

Santa Clara County ARES®/RACES

Home Services Operations Data Training & Events Reference About October 26, 2020

Packet BBS Service

Overview | Service & Network | Presentations | Software | App Notes | Reference | Nets | Support

Packet BBS Service Notices

- 2019-07-12 - General Release of SCo Packet Installer v145C
- 2019-05-07 - Pre-Release of SCo Packet Installer v143F

Previous Packet BBS Service Update History

Overview

The Santa Clara County ARES/RACES network provides a standard amateur radio packet BBS (Bulletin Board System) service. The service provides full-service BBS functionality (messages and bulletins) throughout Santa Clara County even if the entire Internet is completely down. The service can also send and receive e-mail from Internet e-mail addresses. But the service is not in any way dependent on the Internet.

Service and Network Info

Packet BBS Service Description

Application Notes

Configuration and Set-up Instructions

- Standard Outpost Configuration Instructions - 08/04/2018 (PDF - 427 KB)
- Standard TNC Parameter Settings - 04/07/2016 (PDF - 509 KB)
- JNOS Settings for Outpost - 06/17/2014 (PDF - 127 KB)
- How to Request Tactical Calls - 09/28/2016 (PDF - 172 KB)
- How to Configure Outpost for Inbound Message Numbering - 09/11/2010 (PDF - 93 KB)
- How to Configure Outpost for Automated ICS-309 Printing - 09/11/2010 (PDF - 97 KB)

Rev: 07-Apr-2016

Standard TNC Parameter Settings for Santa Clara County Packet Network

Updated for SCo Packet Installer v102

Table of Contents

- Introduction 3
- Fictitious Call Signs 3
- Standard TNC Settings for Outpost Users 4
- Preconfigured TNCs in Outpost 4
- Creating an Outpost TNC Command List 4
- Standard TNC Settings for Manual BBS Sessions 13
- Manual Operations Workflow 13
- TNC Commands for Manual Operations 15
- Explanation of TNC Parameters 19
- Restore Factory Defaults 19
- Full Command Set 19
- Mode Control 19
- Character Length 20
- Station Identification 21
- Channel Access 23
- Transport and Session Control 25
- Radio Timing 26
- Flow Control 27
- Packetization Control 27
- Stream Control 29
- GPS Control 30
- Other TNCs 32
- AEA PK-232MBX 32

Santa Clara County ARES®/RACES Page 1 of 34

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved. 23

23

2. Manual Operations

- Complete manual ops info
- Workflow
 - Start of Shift
 - Each message
 - End of Shift
- TNC-specific Commands

Rev: 07-Apr-2016

Standard TNC Parameter Settings for Santa Clara County Packet Network

Updated for SCo Packet Installer v102

Table of Contents

- Introduction 3
- Fictitious Call Signs 3
- Standard TNC Settings for Outpost Users 4
- Preconfigured TNCs in Outpost 4
- Creating an Outpost TNC Command List 4
- Standard TNC Settings for Manual BBS Sessions 13
- Manual Operations Workflow 13
- TNC Commands for Manual Operations 15
- Explanation of TNC Parameters 19
- Restore Factory Defaults 19
- Full Command Set 19
- Mode Control 19
- Character Length 20
- Station Identification 21
- Channel Access 23
- Transport and Session Control 25
- Radio Timing 26
- Flow Control 27

Santa Clara County ARES®/RACES Page 1 of 34

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved. 24

24

3. Eight TNC user commands

Operations without Outpost (Kantronics KPC-3+)

1. **HELP** [command]
When entered alone, lists all available commands. With a command, provides details on that specific command.
2. **MYCALL** xxxxxx
Tells the TNC what its' call sign is.
3. **CONNECT** call1 [via call2, call3, ...]
Call1 = Call sign of the station to be connected to. Adding "via call2..." connects to the BBS by digipeaters.
4. **CONVERS**
Puts the TNC into **Conversational** mode. Then, whatever you type is immediately transmitted.
5. **<ctrl> c**
Puts the TNC into **Command Mode**. Then, enter TNC commands at the prompt.
6. **RESTORE DEFAULT**
Resets the TNC to the factory default settings; performs the AUTOBAUD routine. Defaults INTface to NEWUSER. Hard reset can be triggered by temporarily removing the battery.
7. **INTFACE** [TERM | ...]
When set to **TERMiNal**, the full command set of the TNC is available.
8. **XMITLVL** [value]
Displays or sets the TNC's transmit drive level

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

25

25

4. TNC Init Settings

Operations without Outpost ... need to know

- Go to the **"Standard TNC Settings for Manual BBS Sessions"**
- Follow instructions in **"Manual Operations Workflow"**
- Use the **"TNC Commands for Manual Operations"** appropriate for your particular TNC

TNC Type	Manual Ops: Start of Shift	Manual Ops: End of Shift
Kantronics KPC-3+	INTFACE TERMINAL MONITOR OFF CD SOFTWARE NEWMODE ON 8BITCONV ON BEACON EVERY 0 SLOTTIME 10 PERSIST 63 PACLEN 128 MAXFRAME 2 FRACK 6 RETRY 8 CHECK 30 TXDELAY 40 XFLOW OFF STREAMEV OFF STREAMSW \$00	STREAMSW \$7C

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

26

26

5. Eight BBS user commands

<https://scc-ares-races.org> > Data Networking > Packet BBS > Reference > JNOS BBS Information

Santa Clara County ARES/RACES

Home Operations Data > Packet Training and Events Reference FAQ October 29, 2018

JNOS Packet BBS Information

Overview

The Santa Clara County BBS network uses the JNOS BBS software. This includes W1XSC, W2XSC, W3XSC, W4XSC, W5XSC, and W6XSC.

JNOS User Information

- Mailbox User Commands [from Appendix A of the JNOS Commands Manual] (PDF - 61 kb)

JNOS Sysop Information

- JNOS 2.0 web site
 - JNOS Release Notes
 - JNOS Commands Manual
 - JNOS Downloads
 - The simplest way to get started is to use the JNOS Installer (see section "Installers for JNOS")
 - You will need to compile the installer. Links to the installer source file and instructions are provided.
 - You'll also need to compile the JNOS program. Links to the source files, instructions and release notes are provided.
- nos-bbs - TAPIR JNOS Mailing List
 - This is where all xNOS issues are discussed. Any JNOS sysops should be on this list.
- NOSintro - TCP/IP over Packet Radio - An Introduction to the KA9Q Network Operating System, by Ian Wade Q3NRW (PDF - 22 MB)
 - 356 pages, ISBN 1-897649-00-2
 - Occasionally available in paperback from Amazon and other book sellers. Posted here with permission from the author.
 - This is the definitive book on xNOS and a must-have for any JNOS sysop. The picture on page 144 is particularly helpful for understanding how messages and addresses are handled.

[Web Site Home Page](#)

© Copyright 2011-2023 Santa Clara County ARES@RACES. All rights reserved.

JNOS User Manual - Appendix A

APPENDIX A

JNOS MAILBOX USER COMMANDS

The following commands are available to the users connected to the mailbox. This file is available separately as sbboxcmds.txt.

AREA

The Area command lists the mail areas that contain messages you may read.

A gives a short listing, whereas
AF gives a full listing with descriptions (if available)
AN shows areas that have new mail since you last logged off.

To read messages in one of the areas, type '**A** <areaname>'. You will then be told how many new, not previously listed messages there are in this area.

You can send mail to any of the listed areas as '**S** <areaname>'

BYE

The Bye command is used to exit from the JNOS SBBOX. This will close your mailbox file and remove any messages that you have deleted with the **KILL** command.

CONNECT

The Connect command has the following nodes :

C[connect] [port] [callsign] [<digipeater> . . .]

Connects to station 'callsign' on interface 'port', possibly via digipeaters ('digipeater...') (note the use of 'via' is optional)

C[connect] [node]

Connects over netrom to a remote node with 'node' as either node-call or node-alias

CONV [channel]

This (if available) puts you in converse mode. This is a roundtable discussion feature. The 'channel' allows specifying the conference channel you wish to join. Channel default = 0.

DOWNLOAD

D[ownload] [/][<path_name>/]filename

Sends a plain ASCII text file.

DM

Download the motd (message of the day) which is otherwise unavailable once you get into the sbbox.

Page 1 | 11

27

5. Eight BBS user commands

Operations without Outpost ... need to know

- HELP** [command] or ?
When entered alone, generates a summary of available commands. With a command as a parameter, provides details on that command.
H List = shows all the List command options and what they do
- LIST**
L = by itself will display the headers for all **unread** messages, if any.
LA = List **ALL** messages, both **read** and **unread**
LM = Lists **MY** messages addressed to me
L> addr = Lists all messages that have "addr" in the **To:** field of the message
- READ #**
= The message number to be displayed.
- KILL #**
= The message number to be deleted.
- AREA** [Area_name]
A = Lists all available bulletin areas.
AF = Gives a full listing with descriptions of areas.
A area_name = moves you to that area. Then use the List and Read commands to view messages.

© Copyright 2011-2023 Santa Clara County ARES@RACES. All rights reserved.

28

28

© Copyright 2011-2023 Santa Clara County ARES@RACES. All rights reserved.

14

5. Eight BBS user commands

Operations without Outpost ... need to know

6. **SEND** [option] <dest_address>
S[P] = Send Private; *example:* SP w6xrl4@w5xsc.ampr.org
SB = Send Bulletin; *example:* SB xsctest
SC = Send Copy; to multiple destination addresses
 example: SC w6xrl4@w5xsc.ampr.org
 (BBS then prompts with Cc: for all other addresses)
7. **BYE**
 Disconnects from the BBS
8. **XM #**
 displays or sets the page length for viewing messages

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

29

29

6. BBS Init Settings; Page Length

Operations without Outpost ... need to know

- The BBS “XM” command displays or sets the page length
 - **XM** = displays the current page length setting
 - **XM 24** = sets the page length to 24 lines
 - **XM 0** = turns off pagination (required when using Outpost)
- If a page length is set, message listings, messages and other content longer than the page length are paused and a “More (N=no)?” prompt is shown.
 - Press <ENTER> to see the next page; ‘n’ to stop
 - Good for reading content on the screen
 - Will cause Outpost to hang if not set back to XM 0
- Note: The SCCo Packet Installer includes **XM 0** in the BBS Init Commands for all SCCo BBSs. Outpost will send **XM 0** as soon as it connects to the BBS so message output is never paused.

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

30

30



SETTING UP PUTTY FOR BBS ACCESS

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

31

31

Serial Access

Setting up PuTTY

Install and run PuTTY

1. Select the **Session** tab
2. Select Connection Type = "Serial"
3. Enter the Com Port
 - Verify with Windows Device Manager
4. Enter the Speed (baud rate)

NOTE: Not all TNCs use 9600,8,N,1 as the configuration. All fields must match what you actually have set in your TNC.

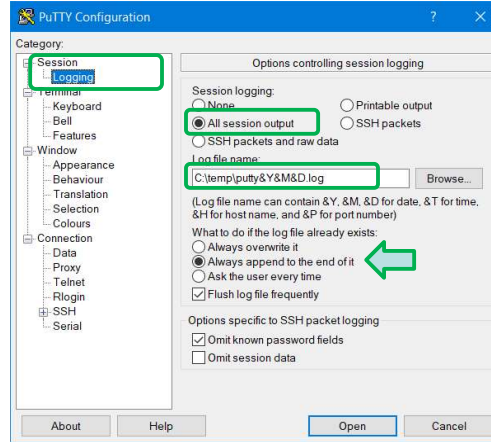
© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

32

Set up Session Logging

Setting up PuTTY

5. Next, click on the **Session > Logging** tab
6. Set Session Logging to
 - All session output
7. Set up a log file name
NOTE: &H does not work on Windows
8. ... if the file exists:
 - Always append to the end



Why do logging at all?

- During manual operations, it is easy to loose track of what is going on.
- Logging creates a history of your manual interactions and a reference if you ever need to go back and check if you got it all right.

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

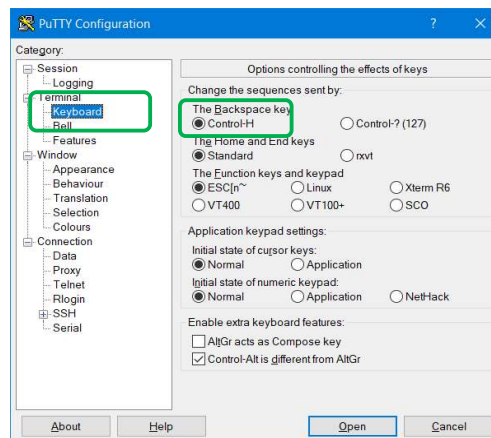
33

33

Change PuTTY's Backspace Key

Setting up PuTTY

9. Next, click on the **Terminal > Keyboard** tab
- The PuTTY default does not send the backspace key code that the KPC-3+ expects. To correct this:
10. Set the Backspace key option to **Control-H**



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

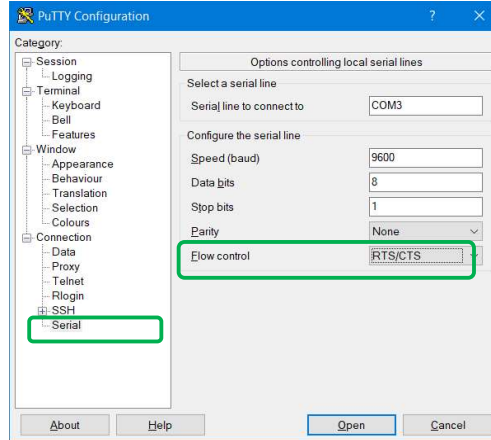
34

34

Serial Access

Setting up PuTTY

11. Next, click on the...
Connection > Serial tab
12. Set Flow control to **RTS/CTS**



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

35

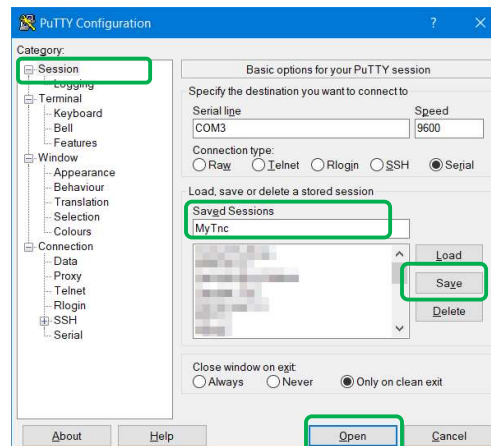
35

Name it, Save it, and Open it

Setting up PuTTY

13. Finally, click on the...
Session tab
14. Give this session a name
15. Press **Save**
16. Press **Open** to open the connection

NOTE: If you ever change any setting, remember to press **Save!**



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

36

36

Start of Shift: Configure TNC settings

The connection basics

- Outpost configures the TNC at the start of each Send/Receive session
- For manual operation, you only need to send these commands once, at the start of your shift

NOTE: Manual Ops commands are slightly different from the Outpost list of commands.

TNC Type	Manual Ops: Start of Shift	Manual Ops: End of Shift
Kantronics KPC-3+	<pre>INTERFACE TERMINAL MONITOR OFF CD SOFTWARE NEWMODE ON 8BITCONV ON BEACON EVERY 0 SLOTTIME 10 PERSIST 63 PACLEN 128 MAXFRAME 2 FRACK 6 RETRY 8 CHECK 30 TXDELAY 40 XFLOW OFF STREAMEV OFF STREAMSW \$00</pre>	<pre>STREAMSW \$7C</pre>

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

39

39

Start of Shift: Configure TNC settings

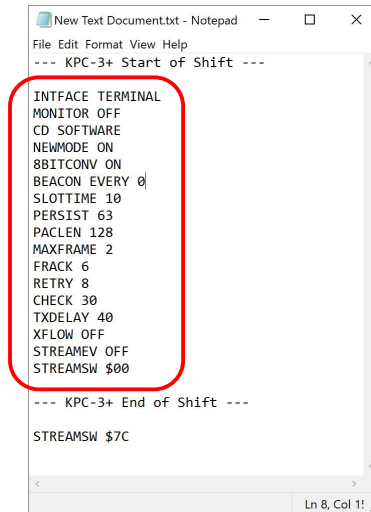
The connection basics

- Create and save a text file with the “Start of Shift” and “End of Shift” TNC commands.

CAUTION: Do NOT cut-and-paste directly from the PDF into your terminal emulator; it *doesn't* always work.

****Best practice:** copy the commands first into a text editor (Notepad), save it, and then copy-and-paste from there into your terminal program.

- To send the “Start of Shift” TNC commands,
 - Connect to the TNC with PuTTY
 - Select and copy the entire “Start of Shift” command list from the text file
 - Paste it into Putty (right-click) at the TNC cmd: prompt.



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

40

40

During the Shift: FCC Call Sign Session

The connection basics

```

1 cmd:mycall w6xrl4
2 cmd:c w5xsc-1
3 cmd:*** CONNECTED TO W5XSC-1
4 [JNOS-2.0k.1.xsc.2-B1FHIM$]
5 You have 0 messages.
6 (#0) >
7 b
8 *** DISCONNECTED
9 cmd:
    
```

Note: All SCCo BBSs have a 2 minute Inactivity Timer!

- On the TNC:
 1. Set **MYCALL** to your FCC call sign
 2. **CONNECT** to the BBS / mailbox service (SSID=1) on W5XSC
 3. Connected message from TNC
- On the BBS:
 4. BBS says it is a JNOS BBS, version is 2.0k.1.xsc.2, with options
 5. You have no messages
 6. BBS Prompt: You are on message #0
 7. You type "**B**" (bye) to terminate the BBS session
The BBS drops the connection
- On the TNC:
 8. Disconnected message from the TNC
 9. TNC is ready for the next command

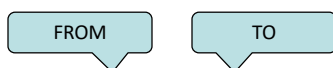
© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

41

41

FCC Call Sign Session – On the Air

The connection basics



AX25: W6XRL4->W5XSC-1 CONNECT

AX25: W5XSC-1->W6XRL4
DATA: [JNOS-2.0k.1.xsc.2-B1FHIM\$] .You have 0 messages..(#0) >.

AX25: W6XRL4->W5XSC-1
DATA: b.

AX25: W5XSC-1->W6XRL4 DISCONNECT

Note: Protocol codes have been removed

- FROM and TO addresses of all packets contain legal call signs
- Both stations are meeting the FCC identification requirements with every packet (more than required)

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

42

42

During the Shift: Tactical Call Sign Session

The connection basics

```

1 cmd:mycall xndeoc
2 cmd:c w5xsc-1
3 cmd:*** CONNECTED TO W5XSC-1
4 [JNOS-2.0k.1.xsc.2-B1FHIM$]
5 You have 0 messages.
6 (#0) >
7 b
8 *** DISCONNECTED
9 cmd:conv
  This is w6xrl4
10 cmd:
    
```

Note: All SCo BBSs have a 2 minute Inactivity Timer!

- On the TNC:
 1. Set **MYCALL** to your **tactical** call sign
 2. **CONNECT** to the mailbox service (SSID=1) on W5XSC
 3. Connected message from TNC
- On the BBS:
 4. BBS says it is a JNOS BBS, version 2.0k.1.xsc.2, with IHM\$ options
 5. You have no messages
 6. BBS Prompt: You are on message #0
 7. You type "**B**" (bye) to terminate the BBS session
The BBS drops the connection
- On the TNC:
 8. Disconnected message from the TNC
 9. Enter **CONVerse** mode, and then type in at least your FCC call sign, press enter to transmit
 10. Enter **Cntl-C** to return to Command Mode.
TNC is ready for the next command

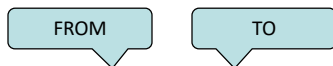
© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

43

43

Tactical Call Sign Session – On the Air

The connection basics



```

AX25: XNDEOC->W5XSC-1 CONNECT
AX25: W5XSC-1->XNDEOC CONNECT
DATA: [JNOS-2.0k.1.xsc.2-B1FHIM$].You have 0 messages.(#0) >.
AX25: XNDEOC->W5XSC-1
DATA: B.
AX25: W5XSC-1->XNDEOC DISCONNECT
AX25: XNDEOC->CQ
DATA: This is w6xrl4.
    
```

Note: Protocol codes have been removed

The extra converse mode packet lets you identify your station XNDEOC as FCC call sign W6XRL4

- XNDEOC is not a legal call sign
- Keep session under 10 minutes and use ID process at the end of session to satisfy the FCC requirements.

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

44

44

End of Shift: Restore TNC settings

The connection basics

- After the BBS session has disconnected, you should be back to the TNC command prompt, usually: cmd:
- When your shift is finished and before you pack up the gear or turn it over to someone else, return the TNC to “normal” settings
- Cut-and-paste the “End of Shift” Send/Receive settings into PuTTY at the TNC command prompt

```

New Text Document.txt - Notepad
File Edit Format View Help
--- KPC-3+ Start of Shift ---

INTERFACE TERMINAL
MONITOR OFF
CD SOFTWARE
NEWMODE ON
8BITCONV ON
BEACON EVERY 0
SLOTTIME 10
PERSIST 63
PACLEN 128
MAXFRAME 2
FRACK 6
RETRY 8
CHECK 30
TXDELAY 40
XFLOW OFF
STREAMEV OFF
STREAMSW $00

--- KPC-3+ End of Shift ---
STREAMSW $7C
    
```

45

MANAGING MESSAGES WITH JNOS COMMANDS

46

BBS Connect & Login

- Ready to connect to BBS
- Set your call (FCC or tactical) in the TNC for login

cmd: MYCALL W6XRL4 OR cmd: MYCALL XNDEOC

- Connect

cmd: C W5XSC-1

- JNOS gets login info from MYCALL
- No login prompt needed

```

COM3 - PuTTY
cmd:
cmd:mycall w6xr14
cmd:c w5xsc-1
cmd:*** CONNECTED TO W5XSC-1
[JNOS-2.0k.1.xsc.2-B1FHIM$]
You have 1 message - 0 new.
(#1) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

47

47

HELP

JNOS Commands

- Basic commands can be seen with HELP command

```

COM3 - PuTTY
Area: w6xr14 (#1) >
help
For a brief listing of all commands, type ?
To get help for a specific command, enter 'h command',
The following commands have help descriptions available for them:

alias    area    bye     connect  convers  download
escape  finger help     iheard   info     iproute
jheard   kill   list    mboxuser nodes    nroutes
operator ping    ports   query    read     register
send     telnet upload  verbose  what     xpert
zap

Area: w6xr14 (#1) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

48

48

HELP <command>

JNOS Commands

- Help with the command will give a detailed explanation

```

COM3 - PuTTY
Area: w6xr14 (#1) >
help area
The Area command will list the mail areas that contain messages
you may read. It also moves you to those areas. You must be in
an area before you can read messages in that area.

A will give a short listing, whereas
AF will give a full listing with descriptions (if available).
A <areaname> moves you to that area.
AF <areaname> will give more info about just that area (if available).
AN will show areas that have new mail since you last logged off.

To read messages in one of the areas, type 'A <areaname>'
You will then be told how many new, not previously listed messages
there are in this area.
You can send mail to any of the listed areas as 'S areaname'
Area: w6xr14 (#1) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

49

49

AREA

JNOS Commands

- Messages are organized in **AREAs**
 - Your mailbox is an area
 - Bulletins: xscperm, xscevent, xsctest are each their own AREA

A[rea] gives a short listing, whereas ...

```

COM3 - PuTTY
Area: w6xr14 (#1) >
area
Current message area is: w6xr14

Available areas are:

w6xr14
        xscperm  xscevent  xsctest   alllocal
allxsc  allbay    allnca   allca     allwusa  allusa
allnoam  allww

Type AF to get description of areas.
AF <name> tells more about that area.

Area: w6xr14 (#1) >
    
```

50

50

AREA

JNOS Commands

AF gives a full listing with descriptions (if available)

```

COM3 - PuTTY
Area: w6xr14 (#1) >
af
Current message area is: w6xr14

Available areas are:

w6xr14    Your private mail area

# Santa Clara County Op Area Shared Mailboxes
xsccperm  Operation, Configuration and other Permanent Info (To: xsccperm)
xsccevent Emergency Incident and Public Service Event Info (To: xsccevent)
xsctest   Test and Training (To: xsctest)

# General Bulletin Areas by Distribution
alllocal  All categories, this BBS only (no distribution) (To: <cat>@local)
allxsc    All categories, Santa Clara Co distribution (To: <cat>@xsc)
allbay    All categories, SF & Monterey Bay distribution (To: <cat>@bay)
allnca    All categories, Northern California distribution (To: <cat>@nca)
allca     All categories, California distribution (To: <cat>@ca)
allwusa   All categories, Western USA distribution (To: <cat>@wusa)
allusa    All categories, USA distribution (To: <cat>@usa)
allnoam   All categories, North America distribution (To: <cat>@noam)
allww     All categories, Worldwide distribution (To: <cat>@ww)

# <cat> A short (max 6 char) category like "equake", "flood", "wx", ...
Area: w6xr14 (#1) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved. 51

51

AREA Example

JNOS Commands

- Change areas to read SCCo bulletins
 - “area xsctest” – changes to the “xsctest” area
 - “L” or “LA” – lists or lists all bulletins in that area
 - “area <callsign>” – returns you to your own area

```

COM3 - PuTTY
cmd:c w5xsc-1
cmd:*** CONNECTED to W1XSC-1
[JNOS-2.0k.1.xsc.2-B1FHIM$]
You have 2 messages - 2 new.
Area: w6xr14 (#1) >
area xsctest
You have 1 message - 1 new.
Area: xsctest (#1) >
L
Mail area: xsctest
1 message - 1 new

St. # TO FROM DATE SIZE SUBJECT
> N 1 xsctest xndec Nov 3 2627 Bulletin for Packet Type II Classro
Area: xsctest (#1) >
a w6xr14
Area: w6xr14 (#1) >
You have 2 messages - 2 new.
Area: w6xr14 (#1) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved. 52

52

LIST

JNOS Commands

- Displays a list of the messages from the current mailbox (or "area")
 - L** - by itself will display the headers for all unread messages, if any.
 - LA** - list all messages, read or unread

```

COM3 - PuTTY
cmd:c w5xsc-1
cmd:*** CONNECTED to W1XSC-1
[JNOS-2.0k.1.xsc.2-B1FHIM$]
You have 2 messages - 2 new.
Area: w6xr14 (#1) >
1
Mail area: w6cr14
2 messages - 2 new

St. # TO FROM DATE SIZE SUBJECT
> N 1 w6xr14 xndeoc Nov 2 454 XND-133P_R_Jelly Donut Request
  N 2 w6xr14 xndeoc Nov 2 443 XND-132P_R_Jelly Donut Delivery No
Area: w6xr14 (#1) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

53

53

READ

JNOS Commands

- **R[ead] #**
- **R[ead] <msg_number_or_range>**
- To read a specific message, you may either type "R #" or just the number by itself. RM will display all unread messages, sequentially.

```

COM3 - PuTTY
St. # TO FROM DATE SIZE SUBJECT
> N 1 w6xr14 xndeoc Nov 2 454 XND-133P_R_Jelly Donut Request
  N 2 w6xr14 xndeoc Nov 2 443 XND-132P_R_Jelly Donut Delivery No
Area: w6xr14 (#1) >
r 2
Message #2
Date: Mon, 2 Nov 2017 21:00:05 PDT
From: xndeoc@w5xsc.ampr.org
To: w6xr14
Subject: XND-132P_R_Jelly Donut Delivery Notification

Donut will be delivered by 9AM
Area: w6xr14 (#2) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

54

54

KILL

JNOS Commands

- The **KILL** command allows you to delete messages from your mailbox
K[ill] <message_number>
- At least one message number must be supplied. The message numbers you can select from can be displayed with the "**L[ist]**" command.
- Messages will not disappear until you disconnect and connect again

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

55

55

SEND

JNOS Commands

- The send (S) or send private (SP) command allows you to enter a message and send it to a user
S[P] <user>@<domain> where
 <user> = recipient's name
 <domain> = <bbscall>
 <bbscall>.ampr.org
 internet domain
- Send an SCCo specific Notice
SB < NoticeArea | <category>@<distribution> >
 - SCCo Notices: SB < NoticeArea >
 - General purpose bulletins: SB <category>@<distribution>
- As above, but ANY <user> may read the message from the mailbox. The < NoticeArea > may be...
 - xscperm
 - xscevent
 - xsctest

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

56

56

Send a Message from the Keyboard

JNOS Commands

- Connect to the BBS using a terminal program
- Use these BBS commands
 - **SP <user>@<domain>** – Send a message to a user at a specific domain.
 - When prompted, enter an SCCo standard subject
 - When prompted, type the body of message
 - When done, on the next line, add **"/EX"** and press **[Enter]**

```

COM1 - PuTTY
(#1) >
sp_w6xr14@w5xsc
Subject:
HXM-445P R Wraparound Test
Enter Message. End with /EX or ^Z in first column (^A aborts):
This is a wraparound test.
/ex
Msg queued
(#1) >
  
```

1. SP <dest_addr>
2. The subject
3. The message
4. /ex

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

57

57

Send Copy

JNOS Commands

- The send copy command allows you to enter a message and send it to multiple users
 - SC <user>@<domain>**
- Enter the send copy command with one address
- JNOS responds with **"Cc:"**
 - Enter other addresses to receive a copy, separated with commas

```

COM1 - PuTTY
(#1) >
sc_w6xr14@w5xsc
Cc: xndeoc@w5xsc, xnd099@w5xsc, xnd098@w5xsc
Subject:
HXM-449P R Multiple addresses
Enter Message. End with /EX or ^Z in first column (^A aborts):
This is a test message with multiple addresses.
/ex
Msg queued
(#1) >
  
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

58

58

BYE

JNOS Commands

- When you are all done with the BBS, disconnect from the BBS
B[ye]
- On disconnecting
 - Outgoing messages will be processed
 - Deleted (killed) messages will be removed

**Don't Forget!!!
All SCCo BBSs have a
2 minute inactivity timer!**

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

59

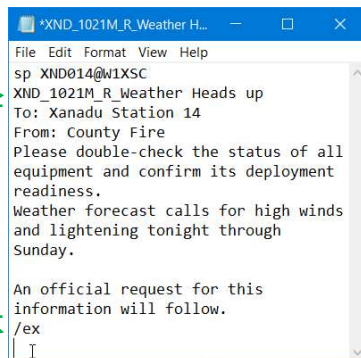
59

FYI... Manual message basics

Troubleshooting Hint

- Knowing how manual packet works will help you **troubleshoot problems**.
- Sending to one destination address:

- ① sp <dest_address>
- ② <subject line>
- ③ <message line 1>
<message line 2>
:
<message line n>
- ④ /ex



- After the SP command, the BBS prompts for the subject, then the message.
- Once the ***ENTIRE*** message sequence is created, highlight and copy all of it and then paste it into PuTTY at the BBS Prompt.

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

60

60

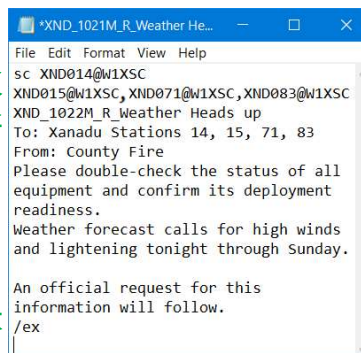
FYI... Manual message basics

Troubleshooting Hint

- Knowing how manual packet works will help you **troubleshoot problems**.
- Sending to multiple addresses:

```

① sc <dest_address>
①A <other_addresses>
② <subject line>
③ <message line 1>
   <message line 2>
   :
   <message line n>
④ /ex
    
```



- After the **SC** command (Send Copy), the BBS prompts with a CC: for additional destination addresses.
- Once the ***ENTIRE*** message sequence is created, highlight and copy all of it and then paste it into PuTTY at the BBS Prompt.

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

61

61

FYI... Manual message basics

Saving the message

- There are reasons to save the message before sending it
 - You have copy for your records.
 - You can save all your messages before sending them.
 - Avoids having to re-enter the message if something goes wrong.
- Where you save the message is up to you. But:
 - If this is your PC, then save them anywhere where you can find them.
 - If this is a shared PC, then create a directory on the C: Drive.
- For instance: your directory structure could look like this:
 - C:\MyMessages
 - C:\MyMessages\XND-23-1009T (activation number)
- Use the message subject as the name of the file.

BUT... Manual PackItForms will do a lot of this for you!

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

62

62

READING BULLETINS ON JNOS

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

63

63

Bulletin Review

Bulletins

- Bulletins are messages intended for a broad audience
- The SCCo BBSs support two types of bulletins:
 - **Notices** are a special type of bulletin specific to Santa Clara County
 - Only distributed to SCCo BBSs (W*XSC)
 - SCCo uses 3 special categories for specific content
 - General **Bulletins** are globally compatible, used for everything else
 - User-defined *category* (e.g.: “quake”, “ARES”) identifies content
 - User-defined *distribution* controls how widely it is distributed (e.g.: “XSC”, “BAY”, “NCA”, etc.).
- Regardless of the bulletin type, when configured in Outpost, Outpost will automatically download them



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

64

64

SCCo Notice Areas

NOTICE

Bulletins

- SCCo ARES/RACES has three special **notice** categories:
 - **xscperm**
 - Used for notices that do not expire
 - examples: standard county procedures
 - **xscevent**
 - Notices posted here automatically expire after 8 days
 - examples: Drills, public service events, incidents, other activations
 - **xsctest**
 - Good for user testing; automatically expires after 1 day
 - **allxsc**
 - Where you can write city and jurisdiction notes
 - Notices posted here automatically expire after 8 days

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

65

65

General Bulletins Overview

Bulletins

- Bulletins are messages that are intended for broad readership
- Bulletins content varies from amber alerts and earthquake reports to jokes and recipes
- Bulletin sender controls how widely the bulletin is distributed
 - Can be as narrow as “local” (this BBS only)
 - Can be as wide as “ww” (worldwide)!
- In JNOS, bulletins are sorted into shared areas (mailboxes) for easier reading

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

66

66

General Bulletins – Why Do They Matter?

Bulletins

- Standard way to distribute information between BBSs of all types throughout the world
- Use them for fun or for emergency communications
- Use them for distributing information to broader areas:
 - Santa Clara County
 - San Francisco Bay area
 - Northern California
 - All California
 - And wider ...
- Example:
 - During the 2009 cable cut, information about anticipated service restoration times were distributed via bulletins by a ham who had information from the telecom carrier

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

67

67

General Bulletin Addresses

Bulletins

- Address format: `category@distribution`
- **Distribution**
 - A six-character or shorter keyword which defines how widely the bulletin will be distributed
 - Sender picks from a pre-defined list
 - Acceptable distributions:
 - local Local BBS only
 - xsc XSC Operational Area (Santa Clara County)
 - bay San Francisco and Monterey Bay area
 - nca No. California (generally north of the Tahachapi Mountains)
 - ca California
 - wusa Western USA (generally, West of the Mississippi River)
 - usa United States of America
 - noam North America (Canada, USA, Mexico, ...)
 - ww worldwide

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

68

68

General Bulletin Addresses (continued)

Bulletins

- Address format: **category@distribution**
- **Category:**
 - A six-character or shorter description of the main topic of the bulletin.
 - Sender picks the category based on the contents of the bulletin
 - Example categories:
 - amber – Amber alerts
 - equake – Earthquake reports
 - flood – Flood reports
 - swpc – Space Weather Prediction Center
 - mtv, cup, sjc, etc. – City bulletins
 - humor or humour – Jokes, stories, etc.
 - Any category works on our SCCo BBSs because we sort bulletins by distribution, not category
 - Uncommon/unusual categories may be held on other BBSs until the sysop decides where it should go

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

69

69

General Bulletin Addresses (continued)

Bulletins

- Example bulletin addresses:
 - mtv@xsc
 - City of Mountain View information for distribution to all BBSs in Santa Clara County
 - flood@bay
 - Information about flooding for distribution to all BBSs in the San Francisco and Monterey Bay areas
 - equake@nca
 - Information about an earthquake for distribution to all BBSs in Northern California
 - swpc@ww
 - Space Weather Prediction Center reports for distribution to all BBSs worldwide
 - humour@ww
 - Variety of jokes and funny stories

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

70

70

Reading General Bulletins

Bulletins

- Use a terminal program like PuTTY
 - Read only the bulletins of interest
 - Be selective when listing and reading
- Read bulletins just like mail
 - Find out what areas are available
 - AREA
 - Select a bulletin area
 - AREA <area_name>
 - List bulletins
 - LA (list all)
 - L> <category_name> (where category_name matches the messages' To: field, ex: **equake@ww**)
 - Read a bulletin
 - R #

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

71

71

General Bulletin Example

Bulletins

1. Use "A" to change area to "allww"
2. Wow, that's a lot!
3. Set page length
XM 24
4. List All
5. JNOS pauses
 - <Enter> to continue
 - <N> to stop

- Note, there are multiple categories in the list
 - wp
 - tech
 - swpc
 - equake
 - ...

```

cmd:c w5xsc-1
cmd:*** CONNECTED TO W5XSC-1
[JNOS-2.0j.7t.XSC32.1-IRMS]
You have 4 messages - 3 new.
(#1) >
a allww
allww 180 messages - 180 new.
(#1) >
xm 24
(#1) >
la
Mail area: allww
180 messages - 180 new

St. # TO FROM DATE SIZE SUBJECT
> N 1 why@ww g0tez Jan 1 5679 Baloons ?
N 2 tz@ww g0tez Jan 2 10405 RE:Time Zones, etc.
N 3 wp@ww va3hra Mar 14 1434 WP Update
N 4 today@ww n0kfq Mar 14 3027 Today in History - Mar 14
N 5 swpc@ww cx2ea Mar 14 4745 Geophysical Alert Message (WWV)
N 6 swpc@ww cx2ea Mar 14 2944 Report of Solar-Geophysical Activit
N 7 equake@ww cx2ea Mar 14 1967 SOUTHWEST OF AFRICA
N 8 swpc@ww cx2ea Mar 14 3811 Daily Space Weather Indices
N 9 pic@ww ja4mam Mar 15 1919 7+ FLNRS07.JPG info
N 10 wp@ww w5mcc Mar 15 1237 WP Update
N 11 wp@ww kb8oak Mar 15 1328 WP Update
N 12 wp@ww n9lcf Mar 15 2259 WP Update
N 13 wp@ww nidot Mar 15 1104 WP Update
N 14 swpc@ww cx2ea Mar 15 1723 Solar Region Summary
N 15 fb1co@ww qb7ccw Mar 15 7408 FBEL08 10/2016 * GB7COW BBS *
N 16 swpc@ww cx2ea Mar 15 2508 Solar and Geophysical Activity Summ
N 17 wp@ww w6krf Mar 14 1159 WP Update
N 18 wp@ww ac4zr Mar 15 1429 WP Update
N 19 equake@ww cx2ea Mar 15 1938 STRAIT OF GIBRALTAR
N 20 wp@ww wa5eoc Mar 15 1440 WP Update
N 21 tech@ww g8mny Mar 15 1946 Flashing LED lamp driver
N 22 humor@ww gm3yew Mar 15 6974 Jokes 15/3
N 23 tech@ww g8mny Mar 15 6204 LED Bike Light
More (N=no) ?
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

72

72

Filter the General Bulletins

Bulletins

- JNOS command L> will filter the list by To: address
 - Example: L> *category*
 - ... will list only bulletins where the To: address contains *category*
- Example: list all earthquake bulletins

```

COM1 - PuTTY
{#1} >
l> equake
Mail area: allww
180 messages - 179 new

St. # TO FROM DATE SIZE SUBJECT
N 7 equake@vww cx2sa Mar 14 1967 SOUTHWEST OF AFRICA
N 19 equake@vww cx2sa Mar 15 1938 STRAIT OF GIBRALTAR
N 47 equake@vww cx2sa Mar 16 1967 PULAU-PULAU SANGIHE, INDONESIA
N 96 equake@vww cx2sa Mar 18 1942 SANTA CRUZ ISLANDS
N 109 equake@vww cx2sa Mar 19 1990 ANDREANOF ISLANDS, ALEUTIAN IS., AL
N 114 equake@vww cx2sa Mar 19 2015 ANTIGUA AND BARBUDA REG, LEEWARD IS
N 148 equake@vww cx2sa Mar 20 2007 NEAR THE EAST COAST OF KAMCHATKA, R
{#1} >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

73

73

Read General Bulletins Like Messages

Bulletins

- Read using the R # command

```

COM1 - PuTTY
{#1} >
l> equake
Mail area: allww
180 messages - 179 new

St. # TO FROM DATE SIZE SUBJECT
N 7 equake@vww cx2sa Mar 14 1967 SOUTHWEST OF AFRICA
N 19 equake@vww cx2sa Mar 15 1938 STRAIT OF GIBRALTAR
N 47 equake@vww cx2sa Mar 16 1967 PULAU-PULAU SANGIHE, INDONESIA
N 96 equake@vww cx2sa Mar 18 1942 SANTA CRUZ ISLANDS
N 109 equake@vww cx2sa Mar 19 1990 ANDREANOF ISLANDS, ALEUTIAN IS., AL
N 114 equake@vww cx2sa Mar 19 2015 ANTIGUA AND BARBUDA REG, LEEWARD IS
N 148 equake@vww cx2sa Mar 20 2007 NEAR THE EAST COAST OF KAMCHATKA, R
{#1} >
r 96
Message #96
Date: 18 Mar 16 18:13:00 GMT
From: cx2sa@cx2sa.sal.ury.soam
To: equake@vww
Subject: SANTA CRUZ ISLANDS

Path: N6RME!CX2SA

From: CX2SA@CX2SA.SAL.URY.SOAM
To : EQUAKE@VWW

== PRELIMINARY EARTHQUAKE REPORT ==

Region: SANTA CRUZ ISLANDS
Geographic coordinates: 12.487S, 166.531E
Magnitude: 5.5
Depth: 42 km
Universal Time (UTC): 18 Mar 2016 12:49:15
Time near the Epicenter: 18 Mar 2016 17:49:15

Location with respect to nearby cities:
189 km (117 mi) NW of Sola, Vanuatu
343 km (212 mi) NNW of Luganville, Vanuatu
611 km (378 mi) NNW of Port-Vila, Vanuatu
794 km (492 mi) ESE of Honiara, Solomon Islands
More (N=no)?
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

74

74

But, what about PackItForms?



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

77

77

Submitted for your approval...

THE
PACKET
ZONE

- You just arrived at **XND Fire Station 14** to take over as Packet Operator. This is great... Your first MAC assignment!
- As you enter, the last shift Packet Op rushes past you saying...
"there's a couple of ICS 213's on the desk to be sent!"
- At least you won't be bored.
- Over your shoulder, you hear him yell back...
"Oh yeah, I could never get Outpost to work after IT updated the Windows O/S... and they just left."
- The PC is running; you click the Outpost icon... Error; and you have never seen this error before ☹️
- OK, deep breaths. You know what to do, right?

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

78

78

Manual PackItForms

Fortunately, PackItForms is a message creation system designed to work with both Outpost or as a **standalone** solution for forms-based messages.

- **What's new with the PackItForms 3.10**
 - Enhanced standalone message management, including:
 - Manages setting up and using user and tactical IDs
 - Takes care of message numbering
 - Includes a Plain Text message form
 - Creates a standalone ICS-309 log
 - Creates copy-ready text (all BBS commands) to paste into PuTTY
 - Easy message saving
- **What's the same**
 - Tight integration with Outpost
 - Supports all PackItForms
 - Formats a standard packet form for sending
 - Processes a received packet form

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

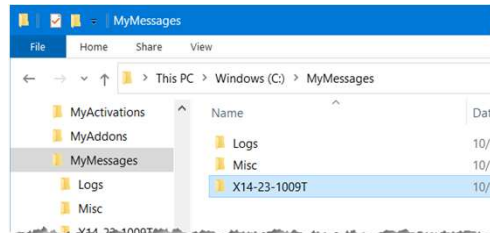
79

79

Get ready for Manual PackItForms

Things to do before you get started:

1. Create a directory where you will save your messages.
2. Consider a naming convention that is relevant for your assignment, examples:
 - C:\MyMessages\X14-23-1009T (by Activation Number)
 - C:\PacketMessages\2023-10-09 (by date)
 - C:\Xanadu_Station_14 (by assignment)
3. Identify a starting message number
 - Can be any number; PackItForm will append a **M** for **Manual** to make it unique.



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

80

80

Manual PackItForm messages

Manually create a PackItForm message

1. Run PackItForms with the *manual.cmd*
2. Set up your user ID, tactical ID, and Next message number
3. Pick and fill in a PackItForm
4. Create the packet message
5. Send the message with PuTTY
6. Save a copy of the message

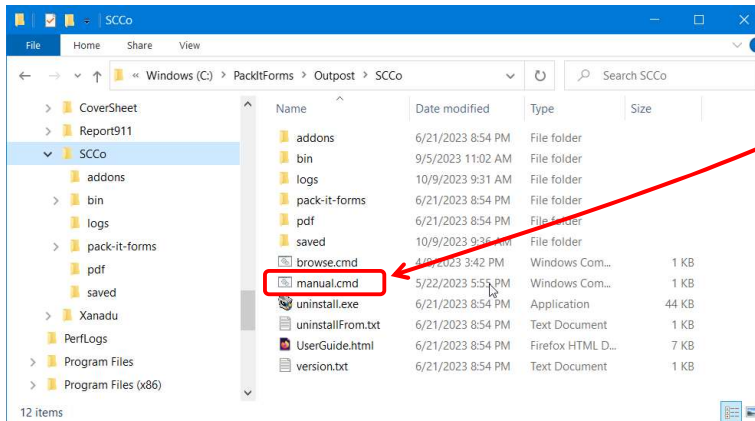
© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

81

81

1. Running manual PackItForms

1. Open your File Explorer and navigate to C:\PackItForms\Outpost\SCCo
2. Find the file *manual.cmd*, and run it (double-click on it)



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

82

82

2. Set up manual PackItForm

Setup Page

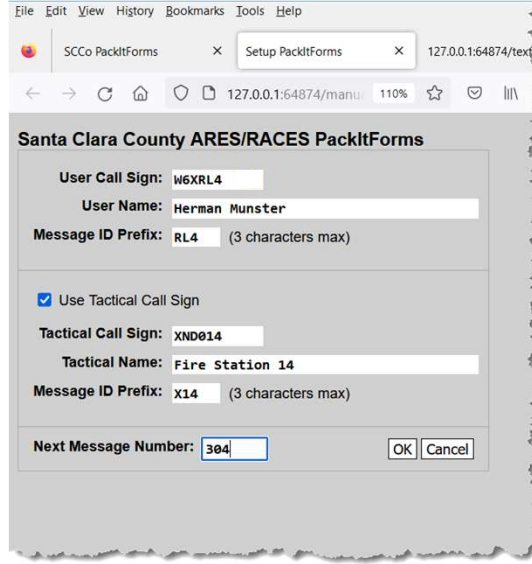
The setup page loads when you first start.

3. Fill in or update all fields:
 - Your user information
 - Tactical Call information
 - Next Message Number

FYI... User and Tactical Call information will persist from run to run.

FYI... The Next Message Number will increment automatically.

4. Press **OK** when done



© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

83

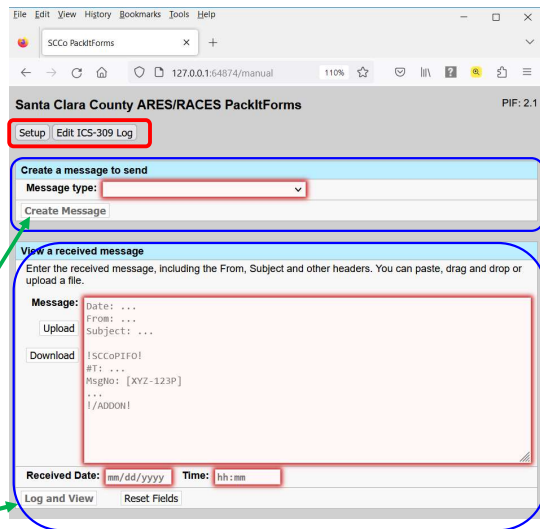
83

3. Pick and fill in a form

Home Page

Consists of 2 sections and a series of controls:

- **Setup button:** Opens the Setup page.
- **Edit ICS-309 Log:** lets you make updates to the manual ICS-309 Log.
- **Create a message to send.** Choose a PackItForm message, then press **Create Message**
- **View a received message.** Paste in a received message, then press **Log and View**



© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

84

84

3. Pick and fill in a form

Home Page

5. From the dropdown menu, select a **PackItForm**,

plain text

XSC Check-In/Out Message

XSC ICS-213 Message

XSC EOC-213RR Resource Request

XSC OA Jurisdiction Status

XSC OA Shelter Status

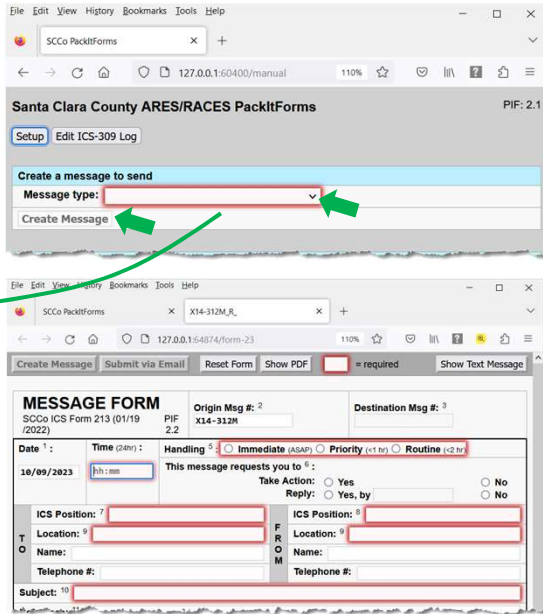
XSC Allied Health Facility Status

XSC RACES Mutual Aid Request

then:

6. Press **Create Message**

The PackItForm opens with the usual fields filled in.



© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

85

85

3. Pick and fill in a form

Creating a message

On the selected PackItForm,

7. Fill in the form as usual.

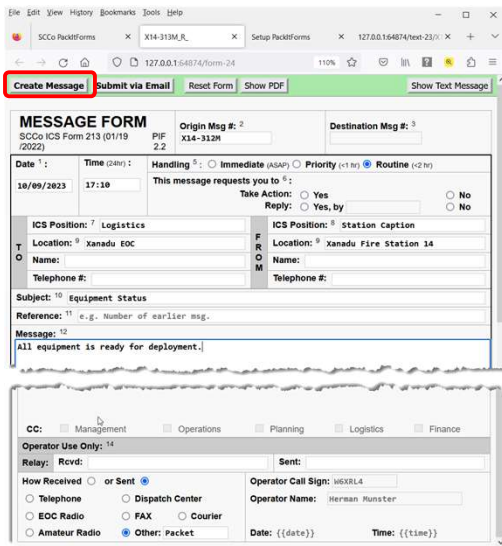
NOTE: The Message ID is set with the **M** suffix;

Origin Msg #: 2

X14-312M

PackItForms takes care of this for you.

8. When done, press **Create Message**



© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

86

86

4. Create the packet message

Message Page

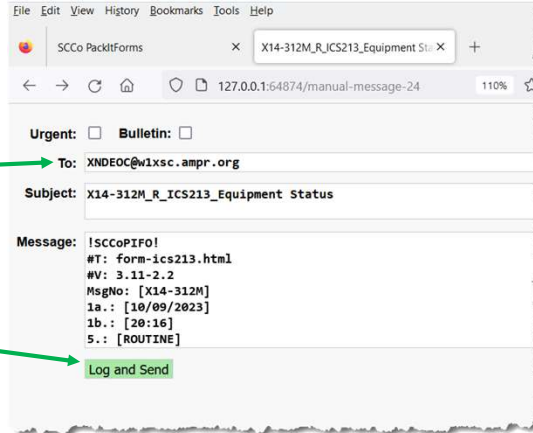
On the Message Page,

9. If needed, check the box if this message is **Urgent** or a **Bulletin** .

10. In the **To:** field,

- enter the Destination address
- multiple addresses, separate with commas.

11. When done, press **Log and Send**



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

87

87

4. Create the packet message

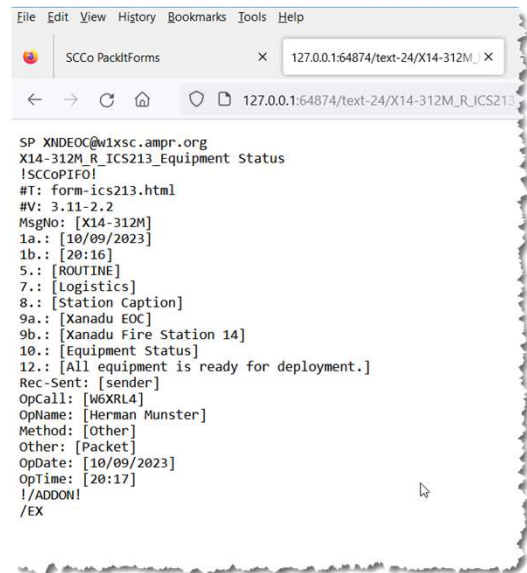
BBS Command Page

The complete packet-ready text is ready for sending.

12. Copy the text. Put your mouse cursor in the text area, and then either:

- From the browser menu, **Edit > Select All**
Edit > Copy
-- or enter --
- **<ctrl>-a <ctrl>-c**
(same as the menus)

Reminder: PackItForm creates a properly formatted Subject line... do not change this!



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

88

88

5. Send the message

What are the Steps?

13. Make sure you previously copied the packet message from the **BBS Command Page** (previous page)
14. Start PuTTY
15. Connect to the BBS
16. Once at the BBS prompt:
 - Put the cursor in the PuTTY text area after the BBS prompt, and then
 - **Mouse right-click** to paste in the message.

The complete packet-ready text is pasted into PuTTY and will start being transmitted to the BBS.

Reminder:

All SCCo BBSs have a 2-minute inactivity timer!

5. Send the message

BBS Command Page

```

SP XNDEOC@w1xsc.ampr.org
X14-312M_R_ICS213_Equipment Status
!SCCoPIFO!
#T: form-ics213.html
#V: 3.11-2.2
MsgNo: [X14-312M]
1a.: [10/09/2023]
1b.: [20:16]
5.: [ROUTINE]
7.: [Logistics]
8.: [Station Captain]
9a.: [Xanadu EOC]
9b.: [Xanadu Fire Station 14]
10.: [Equipment Status]
12.: [All equipment is ready for deployment.]
Rec-Sent: [sender]
OpCall: [W6XRL4]
OpName: [Herman Munster]
Method: [Other]
Other: [Packet]
OpDate: [10/09/2023]
OpTime: [20:17]
!/ADDON!
/EX
    
```

PuTTY Screen

```

(#1) >
!SP XNDEOC@w1xsc.ampr.org
!X14-312M_R_ICS213_Equipment Status
!SCCoPIFO!
!#T: form-ics213.html
!#V: 3.11-2.2
!MsgNo: [X14-312M]
!1a.: [10/09/2023]
!1b.: [20:16]
!5.: [ROUTINE]
!7.: [Logistics]
!8.: [Station Captain]
!9a.: [Xanadu EOC]
!9b.: [Xanadu Fire Station 14]
!10.: [Equipment Status]
!12.: [All equipment is ready for deployment]
!Rec-Sent: [sender]
!OpCall: [W6XRL4]
!OpName: [Herman Munster]
!Method: [Other]
!Other: [Packet]
!OpDate: [10/09/2023]
!OpTime: [20:17]
!/ADDON!
!/EX
To: XNDEOC@w1xsc.ampr.org
Subject:
Enter message. End with /EX or ^Z in first
column (^A aborts)
Msg Queued
(#1) >
    
```

6. Save the message

BBS Command Page

Back at this page,

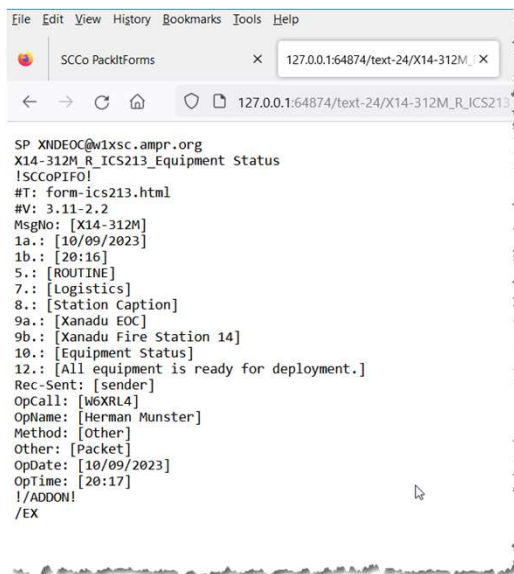
17. Put your mouse cursor in the text area, and then:

- From the browser menu, **File > Save As**
-- or --
- **<ctrl>-s** (same as menu)

18. If not shown, navigate to the PackItForm save directory previously created.

PackItForm sets the file name to the listed subject.

19. Press **Save**.



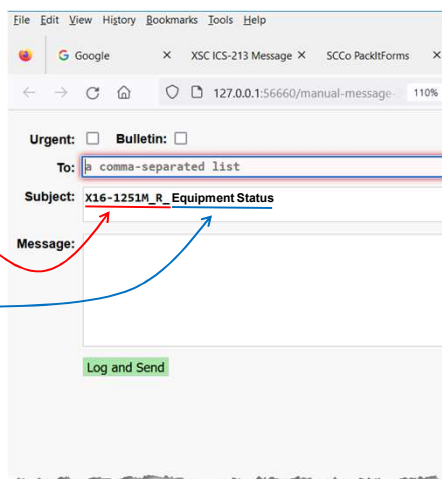
© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

91

91

A note on manual plain text messages

- Yes, PackItForms does support manual Plain Text message sending and receiving.
- After picking plain text message from the **Home Page**, the **Message Page** opens up.
- Message ID and Handling order are filled in, **DO NOT REPLACE THIS!**
- Fill in...
 - To: destination packet address
 - the rest of the Subject text
 - Your plain text message
- Finally, press **Log and Send**
- The rest of the send process is the same.



© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

92

92

Manual PackItForm messages

Receiving messages

1. Read messages from the BBS using PuTTY
2. Save the message
3. Once you have the message saved, delete the message off of the BBS (use the **Kill #** command)

Note: All SCCo BBSs have a 2-minute inactivity timer!

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

93

93

Receive manual messages

PuTTY Screen

```
COM10 - PuTTY
(#1) >
r 1
Message #1
Date: Mon, 9 Oct 2023 20:26:51 PST
From: xndx14@wixsc.ampr.org
To: xndec@wixsc
Subject: X14-312M_R_IC5213_Equipment Status

!SCCoPIFO!
#T: form-ics213.html
#V: 3.11-2.2
MsgNo: [X14-312M]
1a.: [10/09/2023]
1b.: [20:16]
5.: [ROUTINE]
7.: [Logistics]
8.: [Station Captain]
9a.: [Xanadu EOC]
9b.: [Xanadu Fire Station 14]
10.: [Equipment Status]
12.: [All equipment is ready for deployment]
Rec-Sent: [sender]
OpCall: [W6XRL4]
OpName: [Herman Munster]
Method: [Other]
other: [Packet]
OpDate: [10/09/2023]
OpTime: [20:17]
!/ADDON!

(#1) >
```

PackItForm Home Page

The screenshot shows the PackItForm Home Page interface. The 'View a received message' section is active, with the following message content pasted into the input field:

```
9a.: [Xanadu EOC]
9b.: [Xanadu Fire Station 14]
10.: [Equipment Status]
12.: [All equipment is ready for deployment]
Rec-Sent: [sender]
OpCall: [W6XRL4]
OpName: [Herman Munster]
Method: [Other]
Other: [Packet]
OpDate: [10/09/2023]
OpTime: [20:17]
!/ADDON!
```

Below the input field, the 'Received Date' is shown as 10/09/2023 and the 'Time' as 20:41. There are 'Log and View' and 'Reset Fields' buttons at the bottom.

94

1. Receive a packet message

Suppose at XNDEOC... Outpost shows the same error.

1. Connect to the BBS with PuTTY and retrieve a message
2. List the messages with LM
3. Read the message with R # (message number)

You recognize Message #1 is a PackItForm message

4. Highlight all text from **Date: to !/ADDON!** (inclusive)
 - In PuTTY, selecting text copies it to the clipboard

NOTE: This manual process handles both PackItForms and plain text messages. Both can be processed by pasting them into the Home Page.

```

COM10 - PuTTY
(#1) >
r 1
Message #1
Date: Mon, 9 Oct 2023 20:26:51 PST
From: xndx14@w1xsc.ampr.org
To: xndec@w1xsc
Subject: X14-312M_R_ICS213_Equipment Status

!SCCoPIFO!
#T: form-ics213.html
#V: 3.11-2.2
MsgNo: [X14-312M]
1a.: [10/09/2023]
1b.: [20:16]
5.: [ROUTINE]
7.: [Logistics]
8.: [Station Captain]
9a.: [Xanadu EOC]
9b.: [Xanadu Fire Station 14]
10.: [Equipment Status]
12.: [All equipment is ready for deployment]
Rec-Sent: [sender]
OpCall: [W6XRL4]
OpName: [Herman Munster]
Method: [Other]
Other: [Packet]
OpDate: [10/09/2023]
OpTime: [20:17]
!/ADDON!

(#1) >
    
```

© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

95

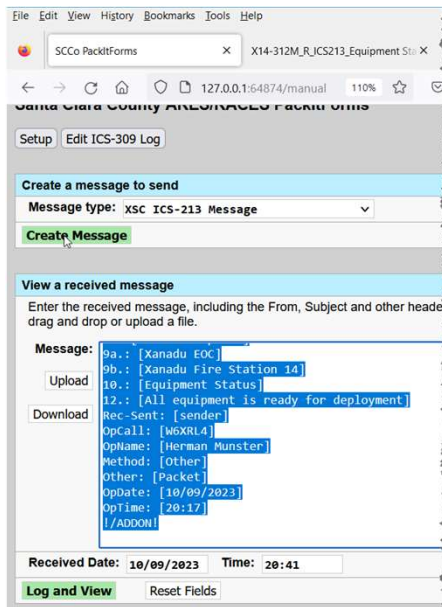
95

2. Recover the PackItForm message

Home Page

Back at the Browser, get back to the **SCCo PackItForms** tab

5. Put your cursor in the "View a received message" section, and enter **<ctrl>V** or **Edit > Paste** to paste in the received message.
6. Press **Log and View**.
 - This entry is logged to the ICS 309
 - The received PackItForm is opened in its PackItForm.
7. Once the PackItForm is opened, print and hand it off for delivery.

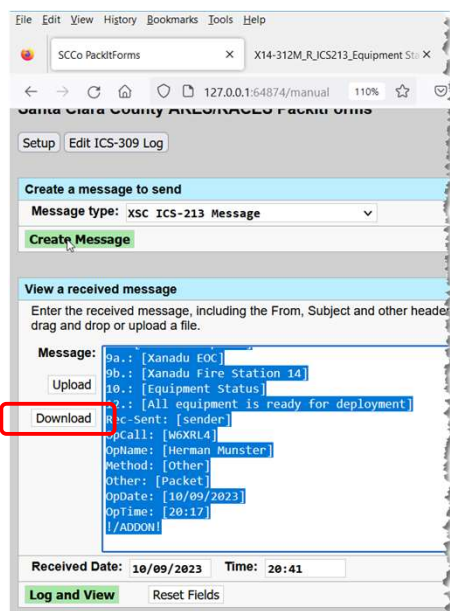


© Copyright 2011-2023 Santa Clara County ARES@/RACES. All rights reserved.

96

3. Save this PackItForm message

8. Back at the **Home Page** , Press the **Download** button. The **Message Page** opens and shows the message text.
9. Put your mouse cursor in the text area, and then:
 - From the browser menu, **File > Save As**
 - or --
 - **<ctrl>-s** (same as menu)
10. Navigate to the PackItForm save directory previously created. The file name is set to the Subject.
11. Press **Save**.



97

Sidebar: A Note on Outpost tags

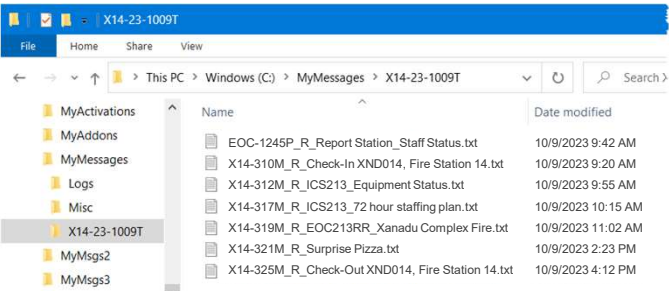
- Messages sent from Outpost occasionally have “tags” inserted in messages that you might see.
- Some of the more common tags are:
 - !RRR! Request Read Receipt
 - !RDR! Request Delivery Receipt
 - !SCCoPIFO! This is a PackItForm message
 - !/ADDON! The end of a PackItForm or other Addon message
 - !UG! Mark message as urgent (lists as RED in the Outpost listing)
- PackItForms will ignore many Outpost tags that it sees and they will not show up in the message.

98

98

What about the saved messages?

- Take a look at your **C:\MyMessage\X14-23-1009T** manual message directory (or whatever you named it).
- The message’s Subject field is used for the file name.
- Clicking on the “Name” column header sorts messages by file name.
- Clicking on the “Date Modified” column header sorts by file timestamp.
- These views can help with managing your messages.
- Submit this directory with your paperwork when done.



© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

99

99

What about the ICS 309?

- Manual PackItForms comes with its own ICS 309 Log, similar to what Outpost does.
- From the PackItForm **Home Page**, when you click on **Log and View**,
- From the PackItForm **Home Page**, when you click on **Edit ICS-309 Log**,

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

100

100

What about the ICS 309?

- All fields are editable.
- Required fields are highlighted in RED.



Trash Can symbol deletes the entry.



Plus symbol adds another line for a manual entry.

- **Erase All** – clears the form, does not require a **Save** to commit the changes.
- **Download...** – creates a .csv file of the Comm Log.
- **Print** – prints the Comm Log to the selected printer.
- **Save** – Saves any changes you made.

The screenshot shows the ICS 309 software interface. At the top, there's a browser window titled 'SCCo PacketForms' with a tab for 'ICS-309'. The address bar shows '127.0.0.1:60400/manual-edit-log'. The main form is titled 'COMM Log' and contains several sections:

- 1. Incident Name and Activation Number:** A text field with a red border.
- 2. Operational Period (Date/Time):** Fields for 'From:' and 'To:' with date and time pickers, all with red borders.
- 3. Radio Net Name (for NCOs) or Position/Tactical Call:** A text field with a red border.
- 4. Radio Operator (Name, Call Sign):** A text field with a red border and a 'call-sign' label.
- 5. COMMUNICATIONS LOG:** A table with columns for Time, FROM (Call Sign/ID, Msg #), TO (Call Sign/ID, Msg #), and Message. The table contains several entries with icons for deletion and addition.
- 6. Prepared By (Name, Call Sign):** A text field with a red border.
- 6A. Signature:** A text field with a red border.
- 7. Date & Time Prepared:** Fields for date and time with pickers, all with red borders.

At the bottom of the form, there are buttons for 'Erase All', 'Download CSV File', 'Print', and 'Save'. The footer of the software reads: 'ICS 309-SCCo ARES/RACES (Rev. 2021-Apr-08) PIF: 1.0' and '© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.'

101

Manual packet operations; not many changes

This is a tool change, not a process change

- 1. First Shift...**
 - a. Show up, request a safety and assignment briefing
 - b. Find a workspace for your packet operations
- 2. Initial station setup...**
 - a. Find, assess, and set up the packet station
 - b. equipment check-out
- 3. Packet Operations...**
 - a. Download notices, send yourself a test message
 - b. Send the formatted check-in message with your Tac Call
 - c. Manage the message flow
- 4. Incoming Shift Change...**
 - a. Request a safety and assignment briefing
- 5. Outgoing Shift Change...**
 - a. Archive the event documentation
- 6. Securing Operations...**
 - a. Send the formatted check-out message with your Tac Call
 - b. Archive the event documentation
 - c. Shutdown

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

102

102

Amateur Packet Radio Field Reference, Type II

- Taking a quick look inside


Table of Contents

- 1 QUICK REFERENCE.....
- 2 INTRODUCTION.....
 - 2.1 PURPOSE.....
 - 2.2 HOW TO USE THIS HANDBOOK.....
 - 2.3 OTHER REFERENCES.....
- 3 MANUAL PACKET OPERATIONS.....
 - 3.1 TNC COMMANDS.....
 - 3.2 BBS COMMANDS.....
 - 3.3 CONNECTING TO THE TNC WITH PUTTY.....
 - 3.4 START OF SHIFT: CONFIGURE TNC SETTINGS.....
 - 3.5 END OF SHIFT: RESTORE TNC SETTINGS.....
 - 3.6 GETTING READY FOR MANUAL MESSAGING.....
 - 3.7 MANUAL MESSAGE BASICS.....
 - 3.8 SENDING A PACKETFORM MESSAGE MANUALLY.....
 - 3.9 RECEIVING A PACKETFORM MESSAGE MANUALLY.....
 - 3.10 VIEWING SAVED MESSAGES.....
 - 3.11 NOTES ON MANUAL ICS 309 COMM LOG.....

(the unofficial)
**Amateur Packet Radio
 Field Reference, Type II**

For SCCo RACES Responders

November 2023



© Copyright 2011-2023 Santa Clara County ARES@RACES. All rights reserved. 103

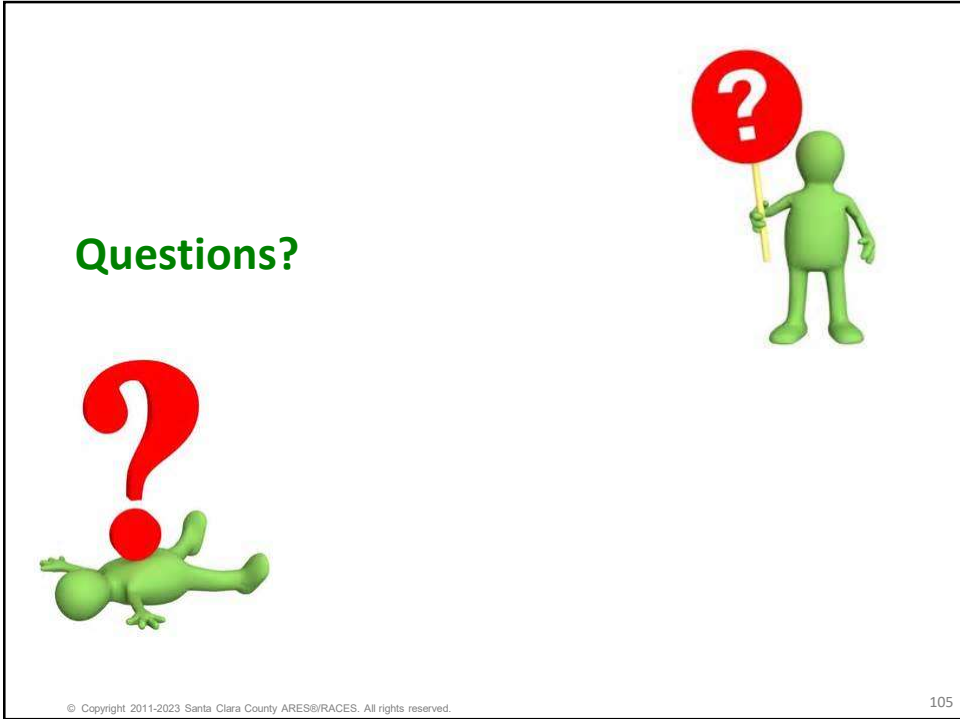
103

Could manual packet ops really happen to me?

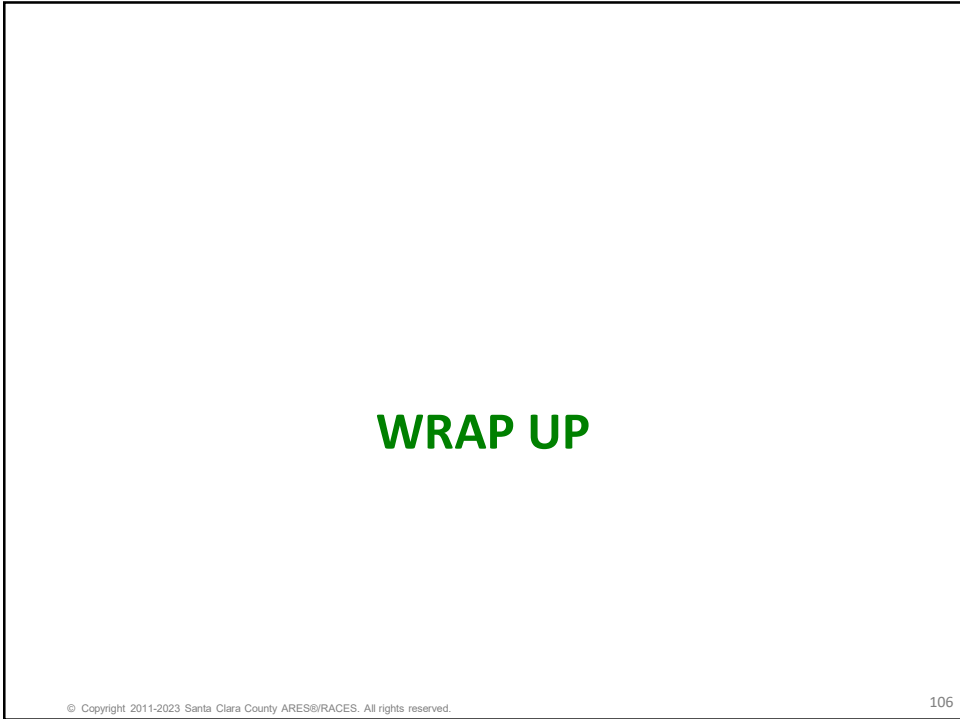
- Better to be safe than sorry... Build your USB packet thumb-drive now!
- Directories (suggested)
 - x:\Programs
 - Putty installer (<https://www.putty.org/>)
 - Putty standalone executables (<https://www.putty.org/> > Alternative binary files)
 - SCCo PacketForm Directory (C:\PacketForms\Outpost\SCCo)
 - SCCo Packet Installer - <https://www.scc-ares-races.org/data/packet/client-software.html>
 - SCCo PIFO only Installer (<download_dir>\sccsetup162Mpub_includes\SccoPIFOsetup3.13pub.exe)
 - Office Libre Portable version (<https://www.libreoffice.org/download/portable-versions/>)
 - x:\SCC Notices
 - downloaded text version
 - Archive of the Outpost SCC Notices directory to reload if necessary
 - x:\TNC Init files
 - text version, seven total
 - x:\Docs
 - Too many to list here... (<https://www.scc-ares-races.org/data/packet/index.html>)
 - Unofficial Amateur Packet Radio Field References, Type III, Type II, e-book edition
 - x:\Miscellaneous
 - Pre-defined messages to be edited prior to sending
 - x:\MyMessages\<event>
 - Or whatever directory name you choose.



104



105



106

First things first

- Online Class Evaluation
 - Log into <https://www.scc-ares-races.org/activities/events.php>
 - Click “Submit Class Evaluation” in Events

The screenshot shows a web interface with a left-hand navigation menu and a main content area. A red arrow points to the 'Submit Class Evaluation' link in the 'Events' section of the menu. The main content area displays a 'Calendar of Events' with a table of events and their details.

Date:	Start:	Type:	Credential C
11/04/23	9:00 AM	County Training	Yes
Course Details: Click here to visit the course description and download the ele...			
Date:	Start:	Type:	Credential C
11/09/23	7:00 PM	Other Meeting	No
Purpose: Discuss organizational and management ideas, strategies, best pr			

- Submit your evaluation as soon as possible... after 1 week, the form will no longer be available for this class!

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

107

107

Exercise Scenario

- You’ve been dispatched by the *Xanadu EOC* to provide communications for a field location.
 - The EOC’s tactical call is XNDEOC on W1XSC.
 - Your tactical call is: XND### (Assigned by your instructor)
 - Your Message Prefix: X## Where “##” are the last two digits of your tactical call
 - Your assignment Name: Xanadu Post ##
 - Operate using your home city’s primary or secondary BBS.
- You arrive at your assignment and set up the station, but discover that Outpost on the packet PC does not work! Looks like you need to do all packet operations manually.
- Your assignment will be mailed to you ahead of time.

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

108

108

Thank You!

Please complete the Course Evaluation
on or before next Saturday 11-November!

Please complete the Assignment
on or before next Saturday 11-November!

Office Hours:

Sunday, 5 November, 3:00p to 5:00p (zoom)
Wednesday, 8-November, 7:30p to 9:00p (zoom)

If you have questions or feedback about this or other training activities,
you can join our packet discussion group.
<https://scc-ares-races.groups.io/g/packet>

Questions, comments, suggestions?
kn6pe@arrl.net

© Copyright 2011-2023 Santa Clara County ARES®/RACES. All rights reserved.

109

109