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- For additional information on training or any of our programs send an email to: info@scc-ares-races.org
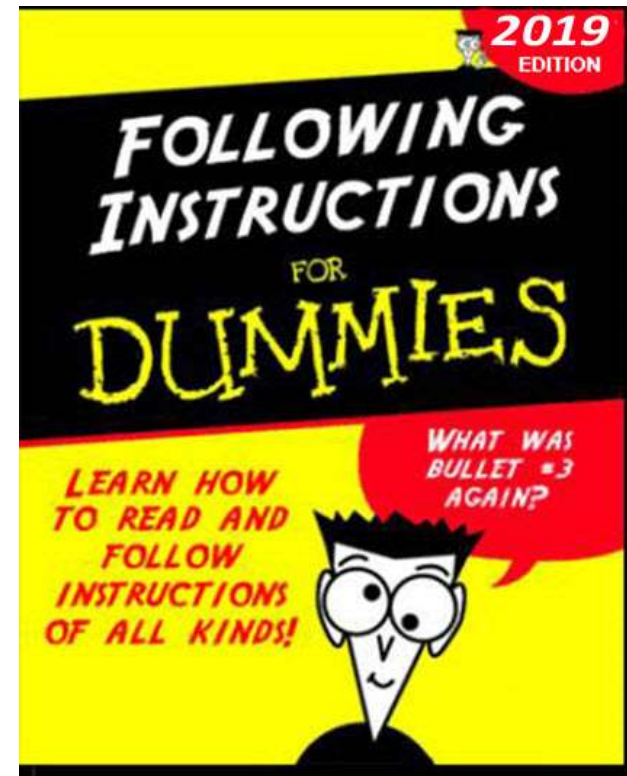
1

1

Packet Type II

Santa Clara County ARES®/RACES/ACS

Last Updated: 9 October 2023

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.

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.

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

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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.

Fictitious Examples

- We use fictitious call signs in this presentation to avoid SPAM

- W6XRL4: Herman Munster

- XNDEOC: City of Xanadu Emergency Operations Center

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 <u>XNDxxx</u> 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).

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How to process high volume traffic efficiently

COUNTY EOC PACKET STATION SETUP & OPERATIONS
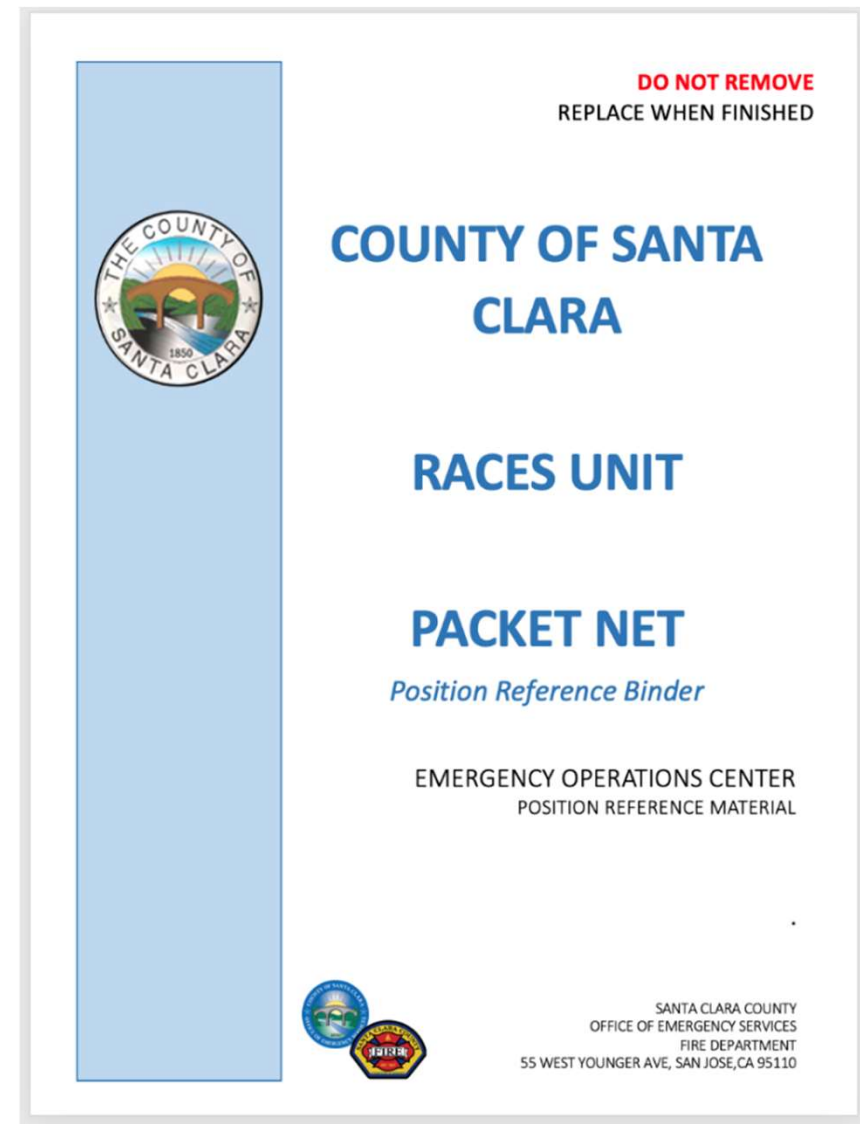
9

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*
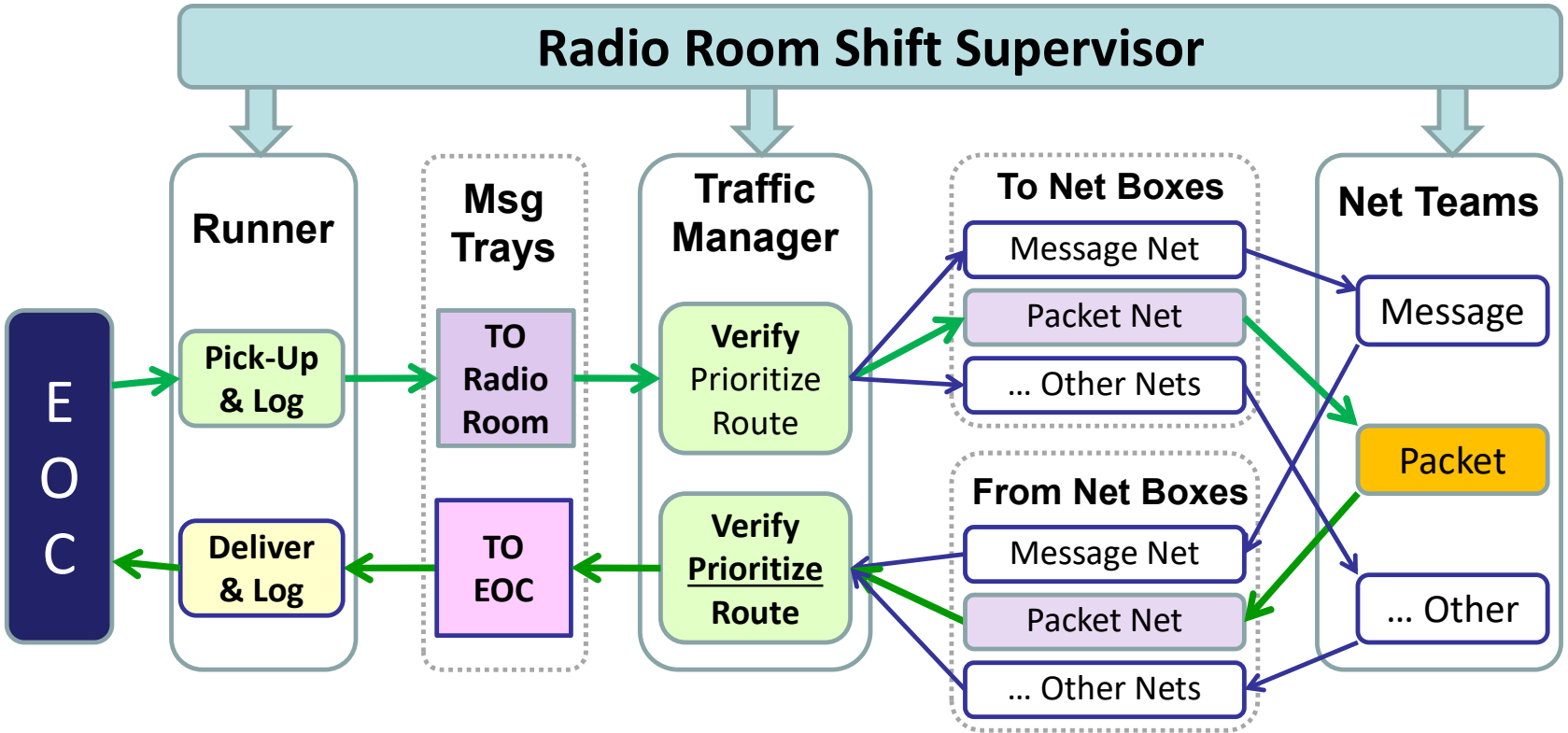
10

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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

DO NOT REMOVE
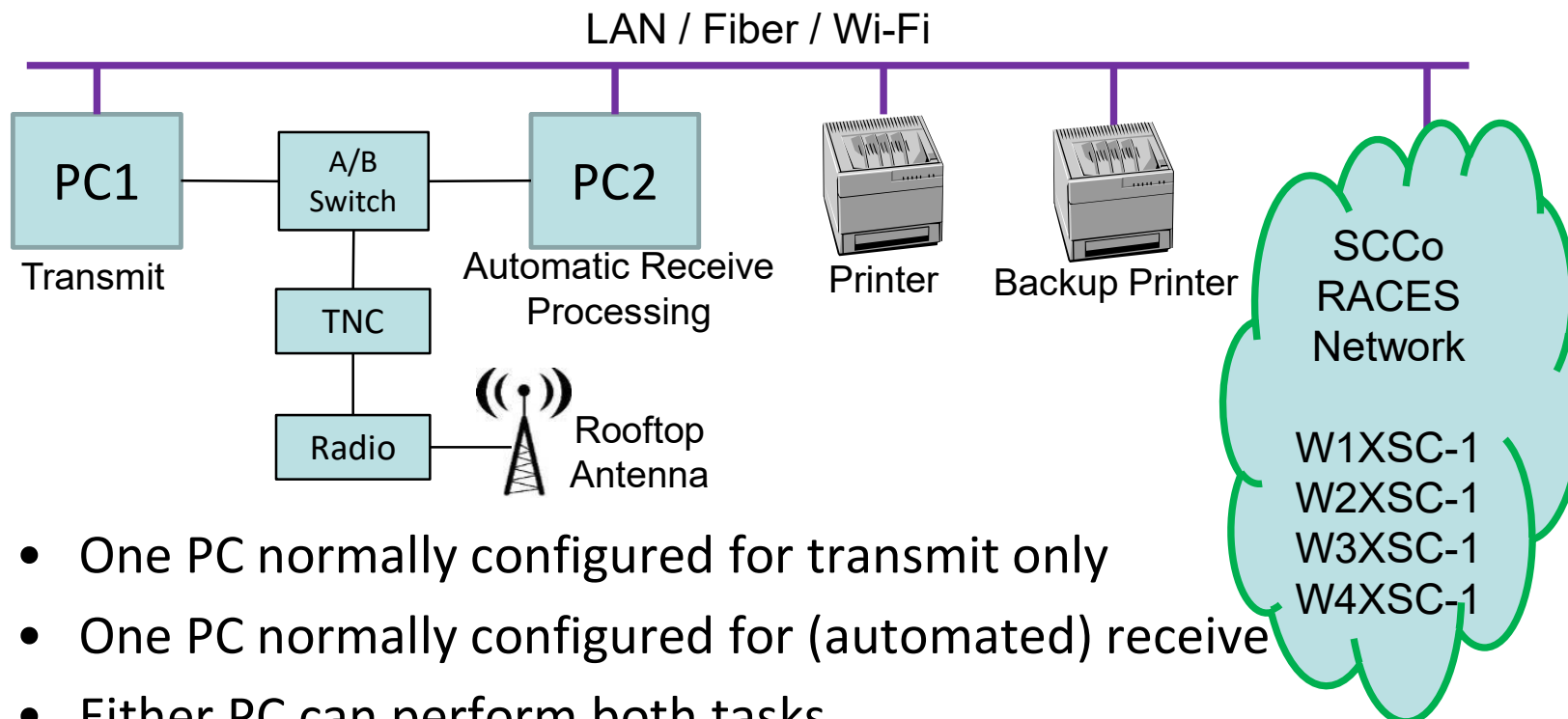REPLACE WHEN FINISHED

COUNTY OF SANTA CLARA

RACES UNIT

PACKET NET

Position Reference Binder

EMERGENCY OPERATIONS CENTER
POSITION REFERENCE MATERIAL

SANTA CLARA COUNTY
OFFICE OF EMERGENCY SERVICES
FIRE DEPARTMENT
55 WEST YOUNGER AVE, SAN JOSE, CA 95110

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County Radio Room Traffic Routing

Radio Room Shift Supervisor

Runner | **Msg Trays** | **Traffic Manager** | **To Net Boxes** | **Net Teams**

EOC

Pick-Up & Log → TO Radio Room → Verify Prioritize Route

To Net Boxes:
- Message Net
- Packet Net
- ... Other Nets

From Net Boxes:
- Message Net
- Packet Net
- ... Other Nets

Net Teams:
- Message
- Packet
- ... Other

Deliver & Log ← TO EOC ← Verify Prioritize Route

- For small, low traffic events, radio room supervisor may also perform the traffic manager role

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Prioritizing Packet Traffic
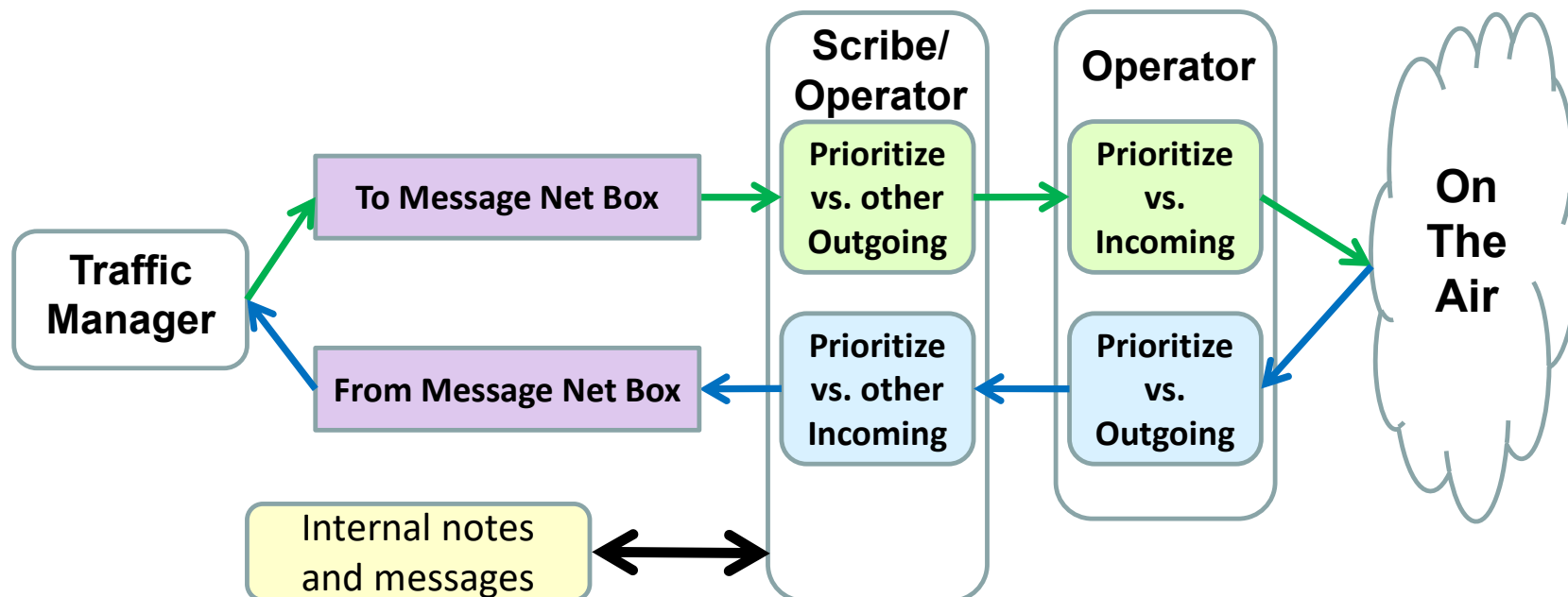
- Operator prioritizes message in Outpost
  - Holds incoming for high priority outgoing and vice versa
- Scribe/Operator prioritizes & logs message in to & out from the team
  - Maintains prioritized incoming and outgoing message bins
- Separate Send & Receive stations facilitate processing

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County EOC Packet Station Overview

LAN / Fiber / Wi-Fi

PC1 — Transmit

A/B Switch

PC2 — Automatic Receive Processing

TNC

Radio

Rooftop Antenna

Printer

Backup Printer

SCCo RACES Network

W1XSC-1
W2XSC-1
W3XSC-1
W4XSC-1

- One PC normally configured for transmit only
- One PC normally configured for (automated) receive
- Either PC can perform both tasks
- Both PCs have a primary and backup printer defined
- Backup TNC/radio can be switched to either PC

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INTERACTING WITH THE BBS WITHOUT OUTPOST

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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 **C**arrier **D**etect mode to software
  - C *callsign* = **C**onnect to station *callsign* (ax.25 address)
- Simple text commands control the **BBS** mailbox
  - SP *address* = **S**end a **P**rivate message to an *address*
  - LA = **L**ist **A**ll messages in this area (mailbox)
  - R *n* = **R**ead 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 > transaction*YYMMDD*.log

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Sidebar: Outpost Logs

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

```
session211015.log - Notepad                          —  □  ×
File  Edit  Format  View  Help
------------------------------------------------------------
15-Oct 09:34:40: Outpost/Opsessn v3.5.0 c0: TNC Session #
3019
------------------------------------------------------------
15-Oct 09:34:40: Using Call Sign KN6PE
15-Oct 09:34:40: Using TNC setup XSC_Kantronics_KPC3-Plus
15-Oct 09:34:40: Using BBS setup XSC_W1XSC-1
15-Oct 09:34:40: TncCheck: TNC is ok
15-Oct 09:34:47: TncInit: Complete as KN6PE
15-Oct 09:34:50: BbsConnect: Connected to W1XSC-1 as user
KN6PE
15-Oct 09:34:50: BbsConnect: BBS is JNOS
15-Oct 09:34:50: BbsDeleteMsgs: Done
15-Oct 09:34:50: BbsSendMsgs: Done
15-Oct 09:34:50: BbsSendMsgs: Done
15-Oct 09:35:03: BBSGetMsgs: Done
15-Oct 09:35:17: BBSGetMsgs: Done
15-Oct 09:35:17: BbsSendMsgs: Done
15-Oct 09:35:19: BbsDisconnect: BBS Session closed
```

```
transaction211015.log - Notepad                      —  □  ×
File  Edit  Format  View  Help
|------------------------------------------------------------
15-Oct 09:34:40: Outpost/Opsessn v3.5.0 c0: TNC Session #
3019
------------------------------------------------------------

cmd:D
Can't DISCONNECT, A Link state is: DISCONNECTED
cmd:b
BEACON    EVERY 0 (disabled)
cmd:Echo on
ECHO was ON
cmd:my KN6PE
cmd:Mon off
```

```
STREAMEV was OFF
cmd:STREAMSW $00
STREAMSW was $7C (|)
cmd:connect W1XSC-1
cmd:*** CONNECTED to W1XSC-1
[JNOS-2.0k.2.xsc.4-B1FHIM$]
You have 0 messages.
(#0) >
A XSCPERM
xscperm: 6 messages  -  6 new.
(#1) >
```

```
Log Settings
─ Options ──────────────────────────
  ☑ L1: Send/Receive Session window logging
  ☐ L2: Send/Receive Interface data trace
  ☐ L3: Send/Receive diagnostic trace
  ☐ L4: Main program diagnostics trace (restart Outpost to apply)
```
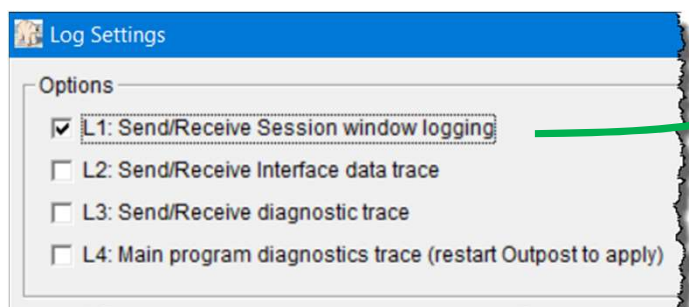
FYI…Log Settings has L1 selected by default
Optional: select L2 for additional info

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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)

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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

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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

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

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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*

2. TNC Standard Settings
Operations without Outpost ... need to know

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2. Manual Operations

- Complete manual ops info

- Workflow

  – Start of Shift

  – Each message

  – End of Shift

- TNC-specific Commands

Standard TNC Parameter Settings for Santa Clara County Packet Network

Updated for SCCo Packet Installer v102

Table of Contents

---

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 **Conv**ersational 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

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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

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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 -- TAPR xNOS 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, G3NRW (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

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 mboxcmds.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 MBOX. This will close your mailbox file and remove any messages that you have deleted with the K[ill] command.

CONNECT

The Connect command has the following modes :

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

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

C[onnect] [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 mbox.

Page 1|11

5. Eight BBS user commands

Operations without Outpost … need to know

1. **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

2. **LIST**
    L = by itself will display the headers for all *unread* messages, if any.
    LA = **L**ist **A**LL messages, both *read* and *unread*
    LM = **L**ists **M**Y messages addressed to me
    L> addr = **L**ists all messages that have "addr" in the *To:* field of the message

3. **READ #**
    # = The message number to be displayed.

4. **KILL #**
    # = The message number to be deleted.

5. **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 **L**ist and **R**ead commands to view messages.

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5. Eight BBS user commands
Operations without Outpost ... need to know

6. **SEND** [option] <dest_address>
    S[P] = **S**end **P**rivate;   *example:* SP w6xrl4@w5xsc.ampr.org
    SB = **S**end **B**ulletin;   *example:* SB xsctest
    SC = **S**end **C**opy;   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

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.

SETTING UP PUTTY FOR BBS ACCESS

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.

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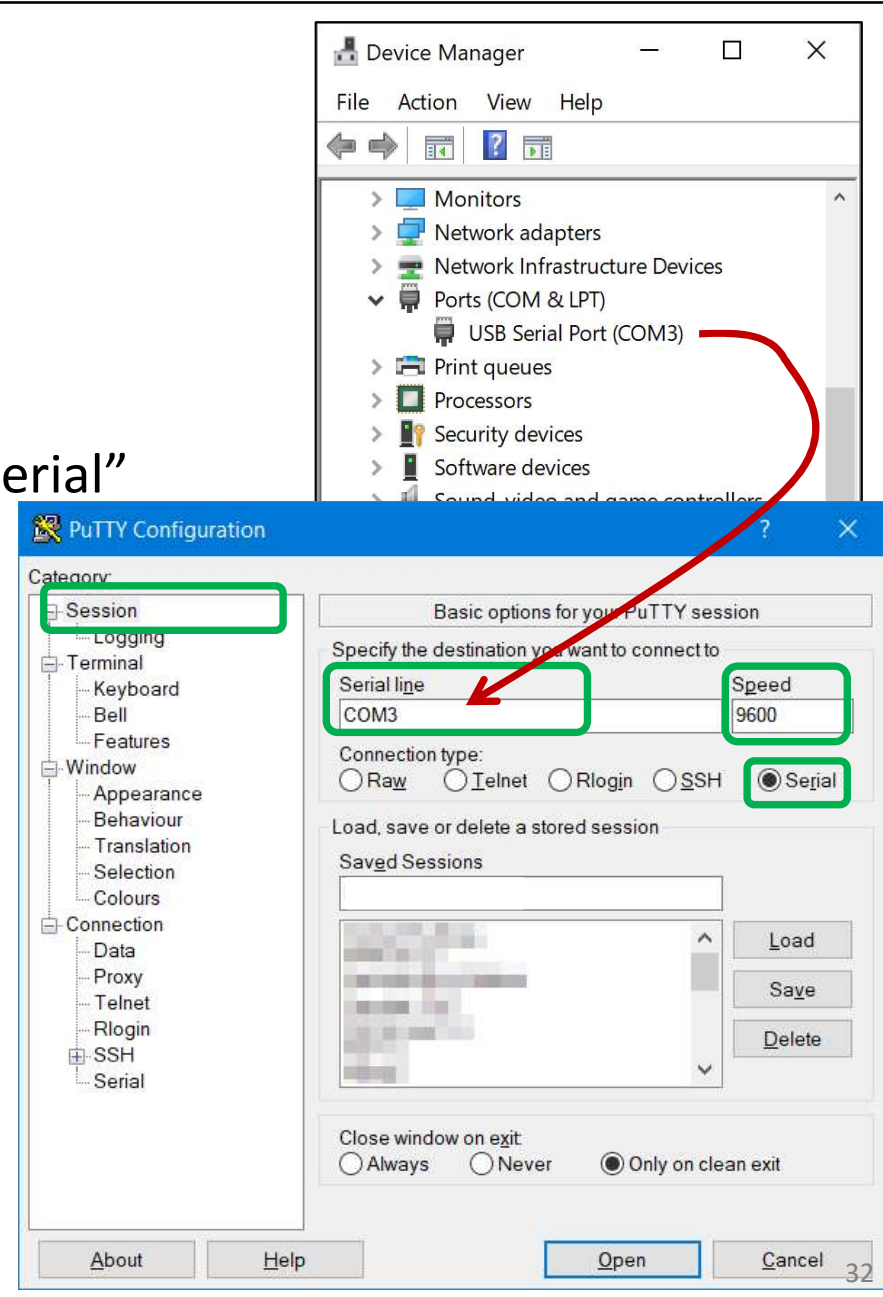
Set up Session Logging
Setting up PuTTY

5. Next, click on the **Session > Logging** tab

6. Set Session Logging to
   - ⊙ All session output

7. Set up a $\boxed{\text{log file name}}$
   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.

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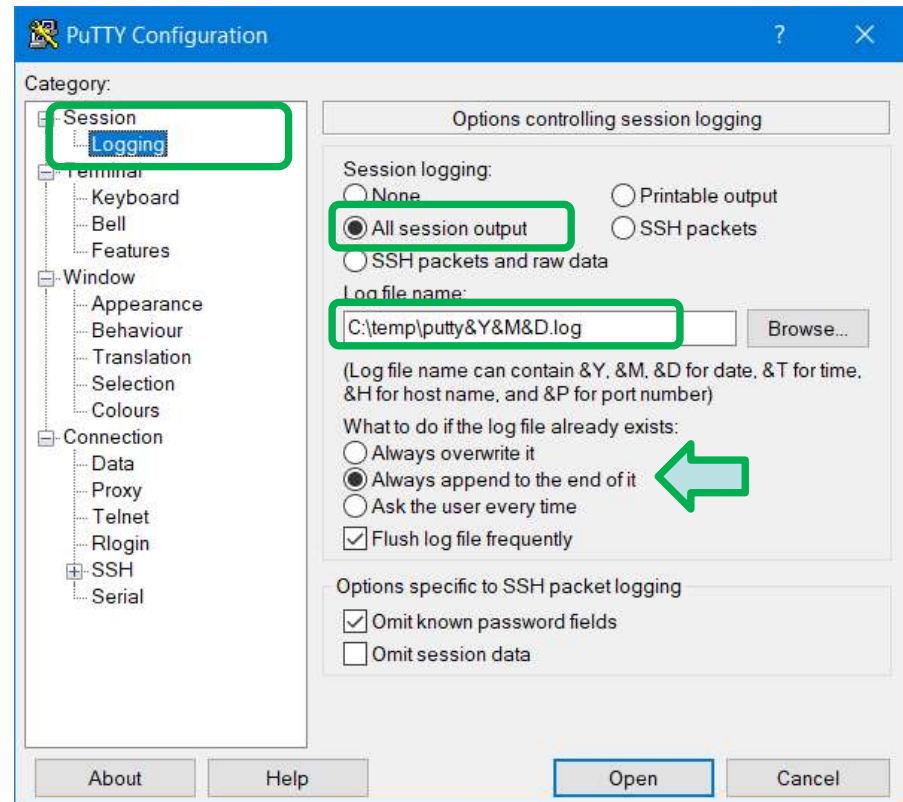
Change PuTTY's Backspace Key
Setting up PuTTY

9. Next, click on the **Terminal > Keyboard** tab

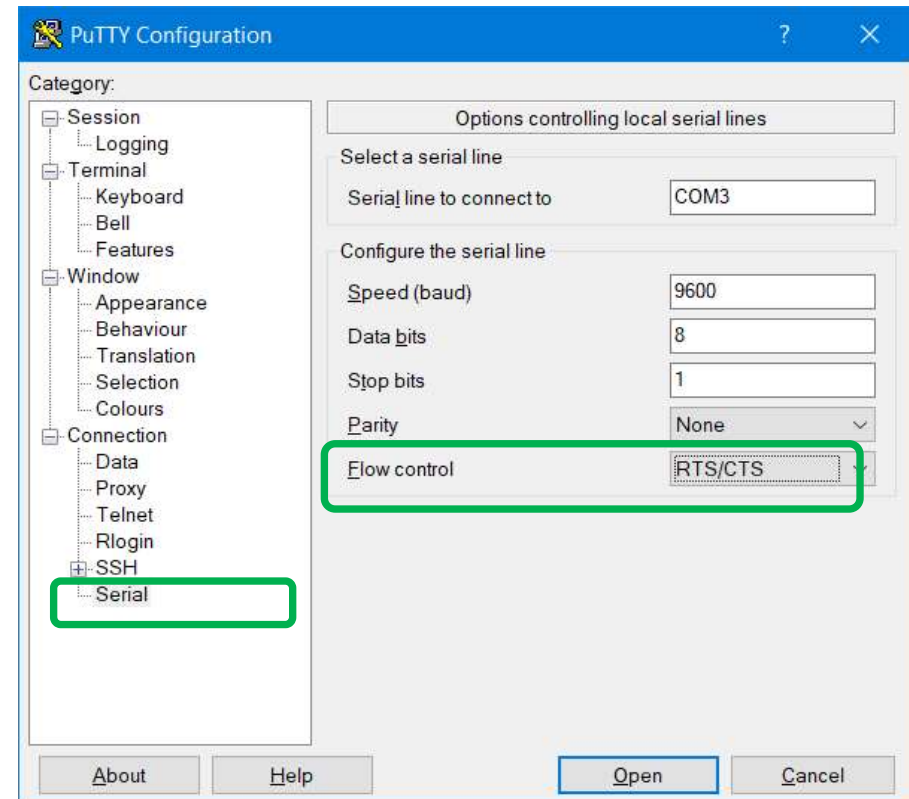The PuTTY default does not send the backspace key code that the KPC-3+ expects. To correct this:

10. Set the Backspace key option to **Control-H**

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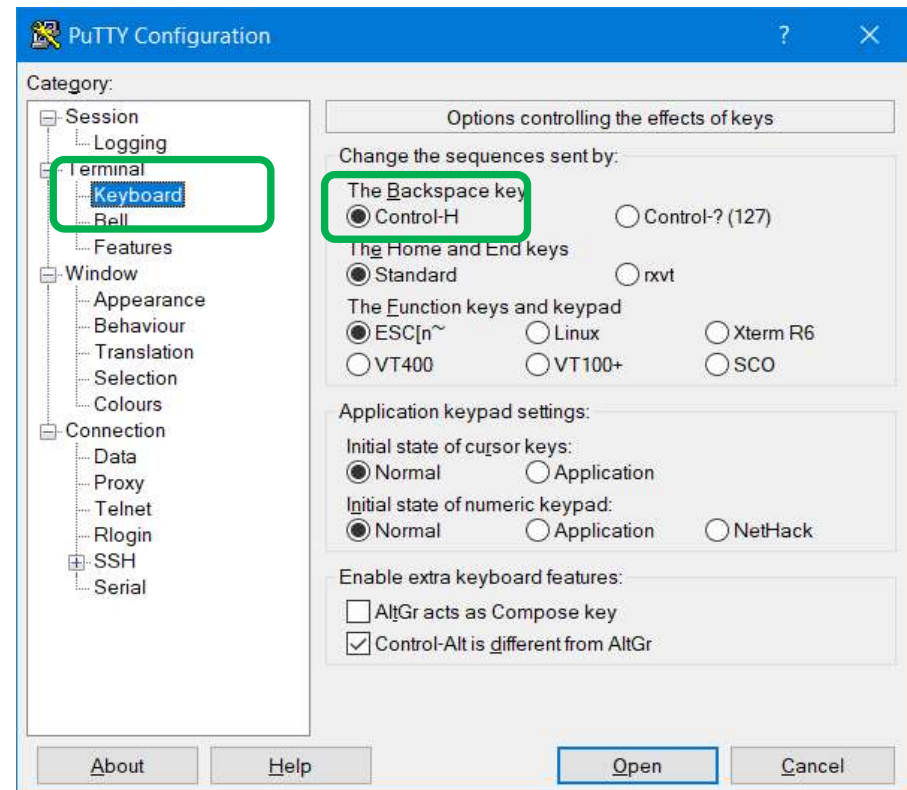
Serial Access
Setting up PuTTY

11. Next, click on the…
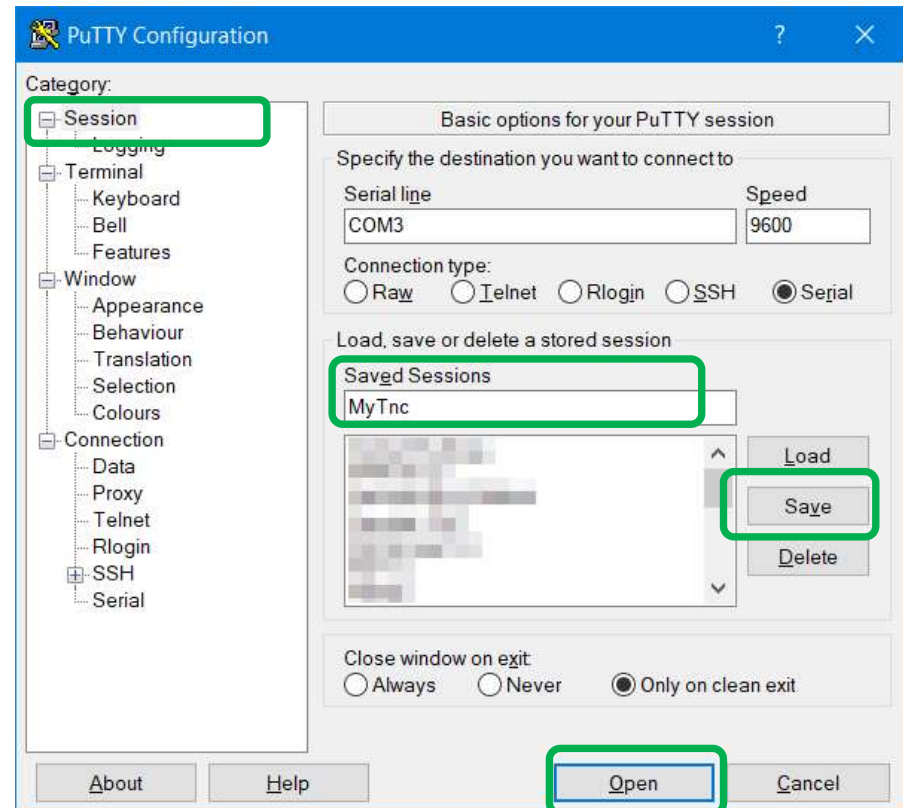   ***Connection > Serial*** tab

12. Set Flow control to
    RTS/CTS

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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**!

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THE CONNECTION BASICS

Start of Shift: Configure TNC settings
The connection basics

- TNC settings affect overall performance
  - Start with the factory defaults
  - Make other settings for efficient use of the BBS

- To be **absolutely positively certain** that **all** TNC settings are at the **current** SCCo standard values, at the TNC prompt, perform the following:

1. `cmd:` **XMITLVL** (for KPC-3+) to display the existing transmit level <value>
2. `cmd:` **INT Term** (just in case)
3. `cmd:` **restore default**
4. **PRESS (*) TO SET BAUD RATE**
5. Enter your call sign
6. `cmd:` **INT Term**
7. `cmd:` **XMITLVL <value>**
8. `cmd:` **cd software**
9. Apply SCCo standard TNC settings for **manual** operations

```
COM3 - PuTTY                                    -
cmd:
cmd:xmitlvl
XMITLVL  261
cmd:restore default
xxxxxxxøxxxxxxxxøxxxxxxxxxxxxxxxxxøæff`ffþf``ffff`fffþ
PRESS (*) TO SET BAUD RATEÌ
xxxxxxxøxxxxxxxxøxxxxxxxxxxxxxxxxxøæff`ffþf``ffff`fffþ
PRESS (*) TO SET BAUD RATE
ENTER YOUR CALLSIGN=> w6xrl4
KANTRONICS KPC3P VERSION 9.1
(C) COPYRIGHT 2002-2005 BY KANTRONICS INC.  ALL RIGHTS RES
DUPLICATION PROHIBITED WITHOUT PERMISSION OF KANTRONICS.
cmd:int term
INTFACE was NEWUSER
cmd:xmitlvl 261
XMITLVL was 100
cmd:cd software
cmd:
```

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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+	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

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Start of Shift: Configure TNC settings
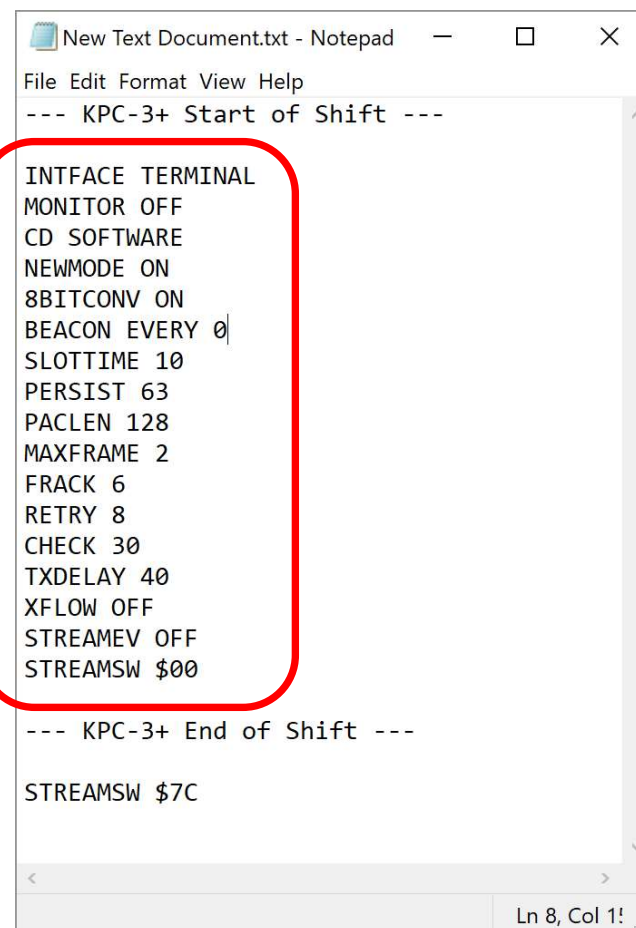
The connection basics

- 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.

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

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

--- KPC-3+ End of Shift ---

STREAMSW $7C


                              Ln 8, Col 1!
```

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During the Shift: <u>FCC</u> Call Sign Session
The connection basics

- 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

```
(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!

FCC Call Sign Session – On the Air

The connection basics

FROM   TO
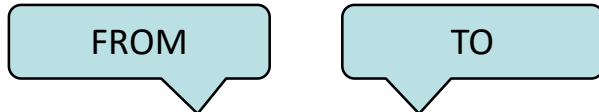
```
AX25: W6XRL4->W5XSC-1 CONNECT

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)

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During the Shift: <u>Tactical</u> 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 SCCo 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

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Tactical Call Sign Session – On the Air
The connection basics

FROM   TO

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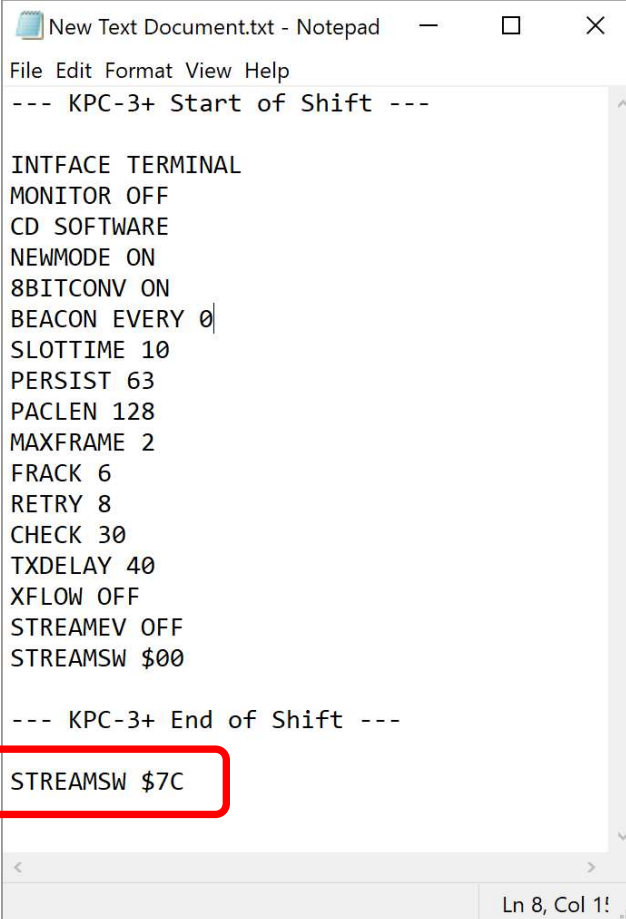
The extra converse mode packet lets you identify your station XNDEOC as FCC call sign W6XRL4

- 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.

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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 ---

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

--- KPC-3+ End of Shift ---

STREAMSW $7C

                          Ln 8, Col 1!
```

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MANAGING MESSAGES WITH JNOS COMMANDS

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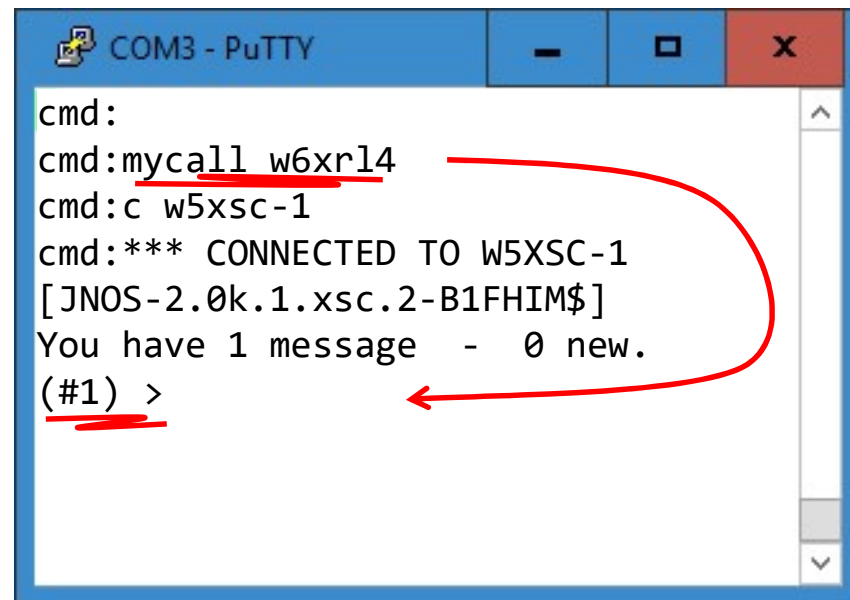
- Ready to connect to BBS
- Set your call (FCC or tactical) in the TNC for login

  cmd: MYCALL W6XRL4 or **cmd:** MYCALL XNDEOC

- Connect

  cmd: C W5XSC-1

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

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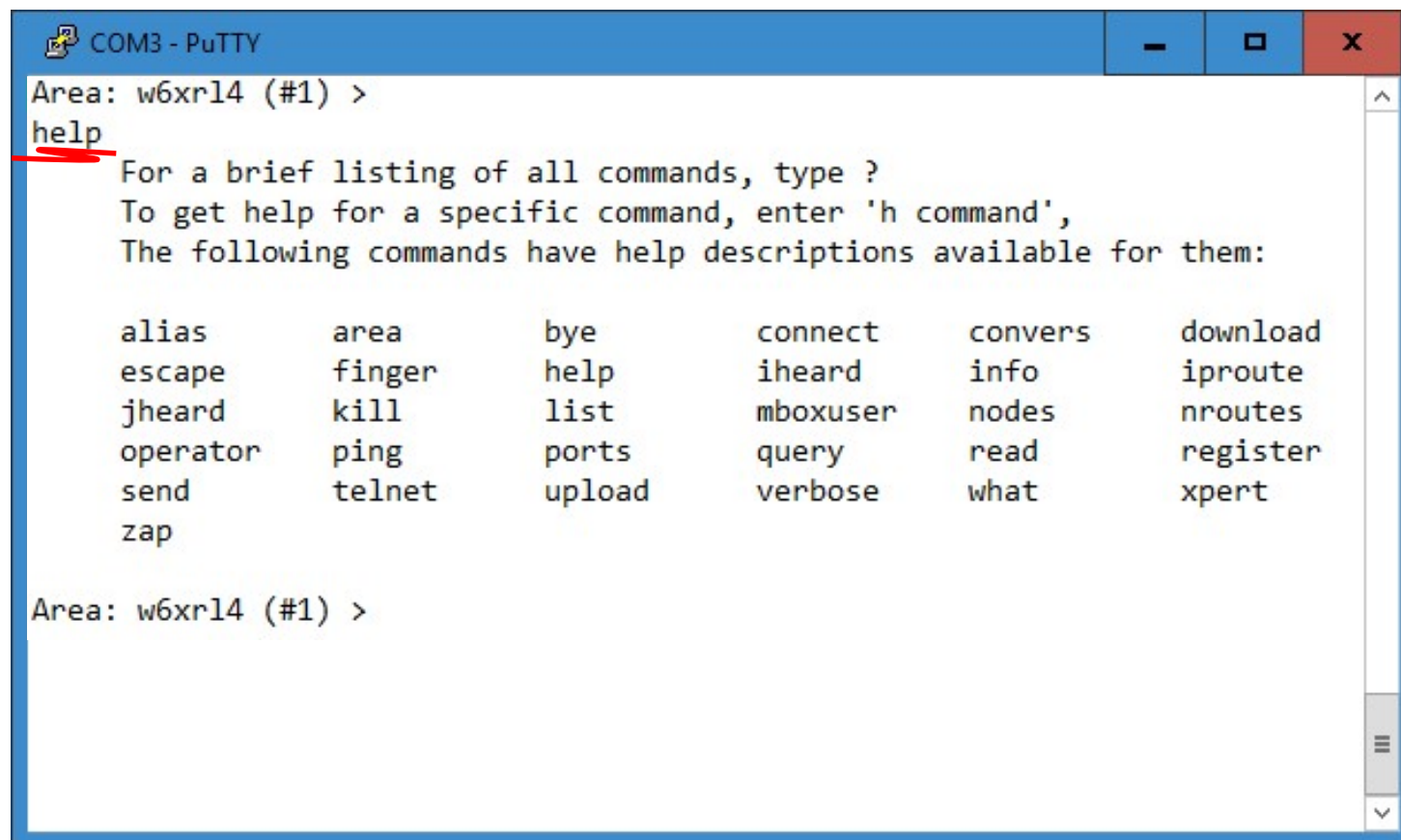
HELP
JNOS Commands

- Basic commands can be seen with HELP command


```
Area: w6xrl4 (#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: w6xrl4 (#1) >
```
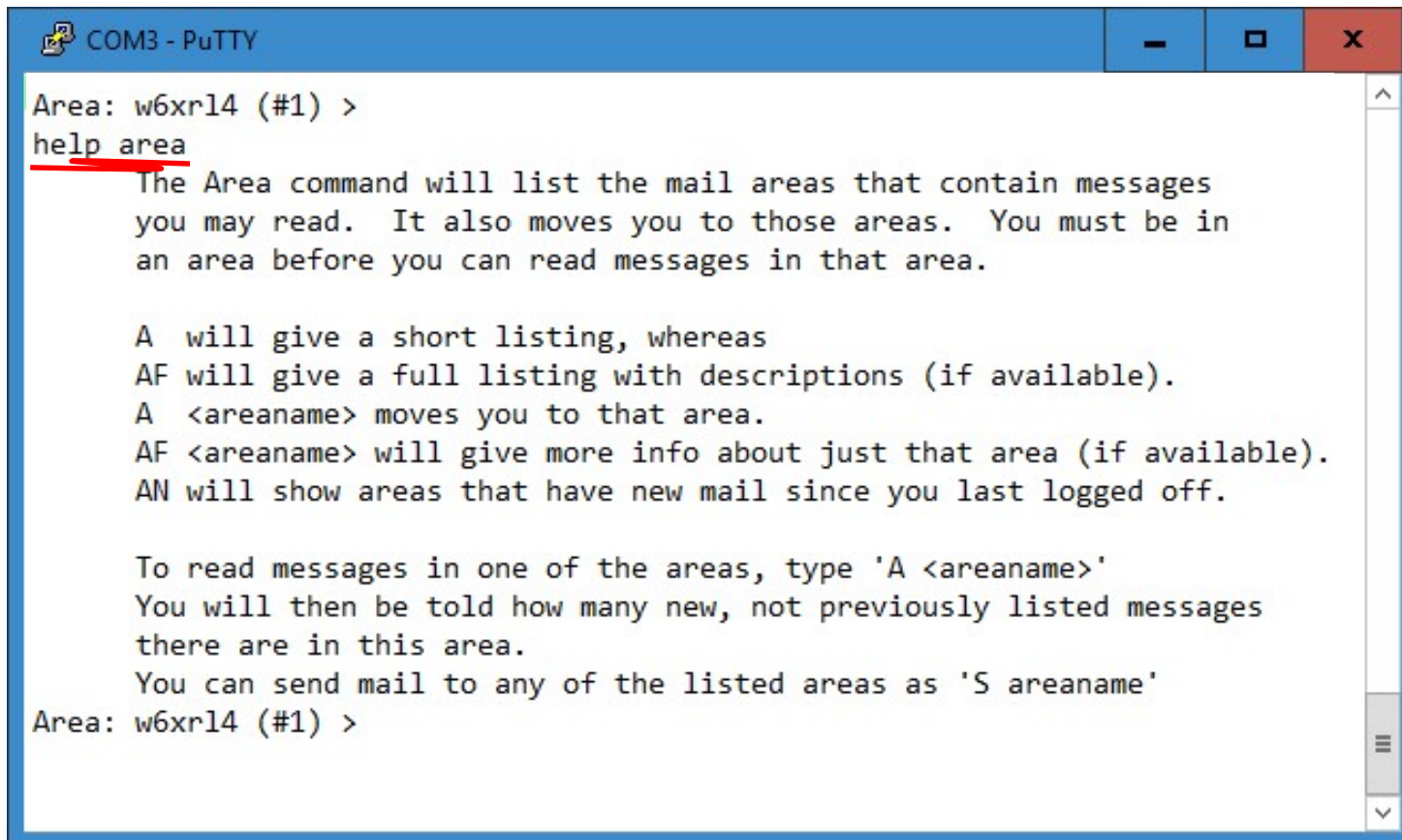
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HELP <command>
JNOS Commands

- Help with the command will give a detailed explanation

```
COM3 - PuTTY                                          —   □   X

Area: w6xrl4 (#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: w6xrl4 (#1) >
```
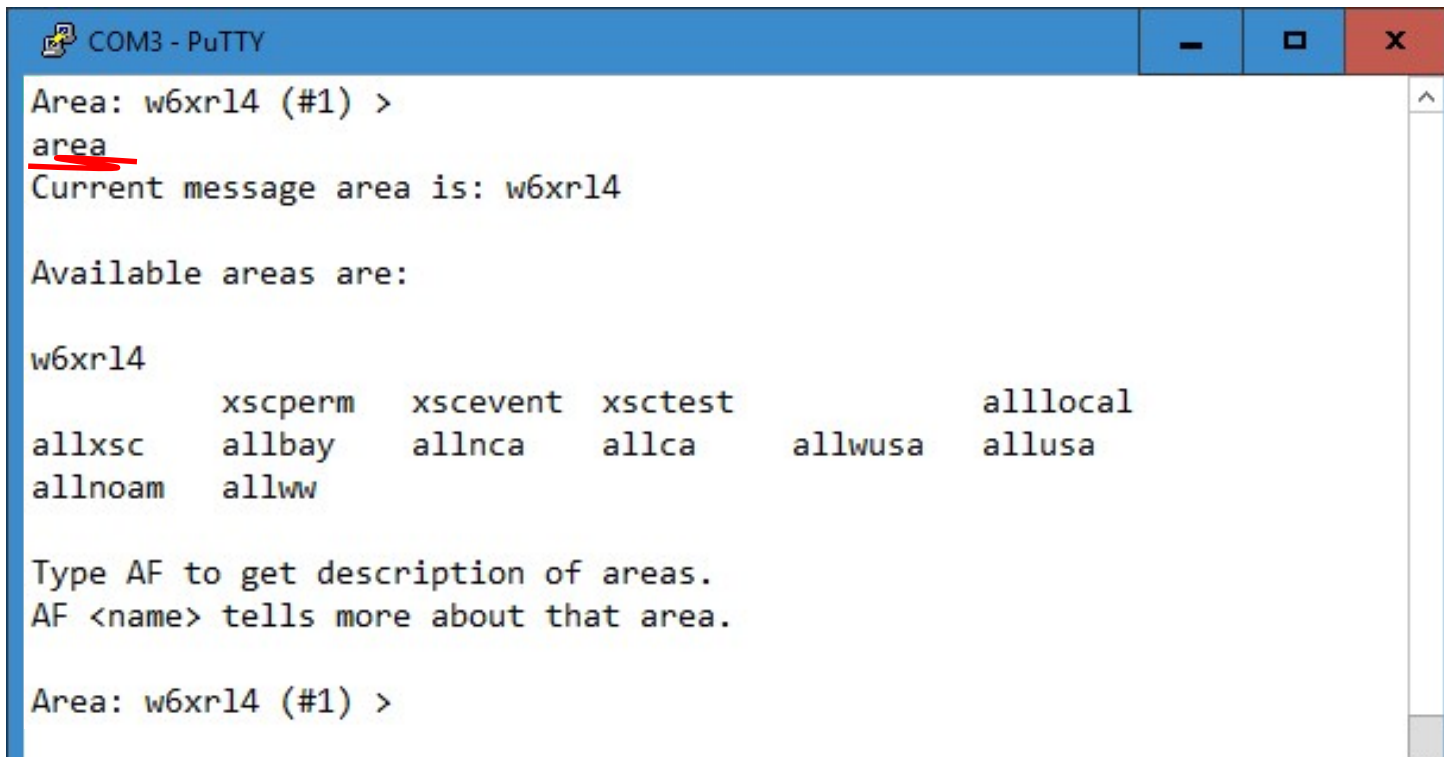
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AREA
JNOS Commands

- 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 …

```
Area: w6xrl4 (#1) >
area
Current message area is: w6xrl4

Available areas are:

w6xrl4

          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: w6xrl4 (#1) >
```

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AREA

JNOS Commands

AF gives a full listing with descriptions (if available)

How to address an SCCo Notice

How to address a generic bulletin. Note the different format

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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
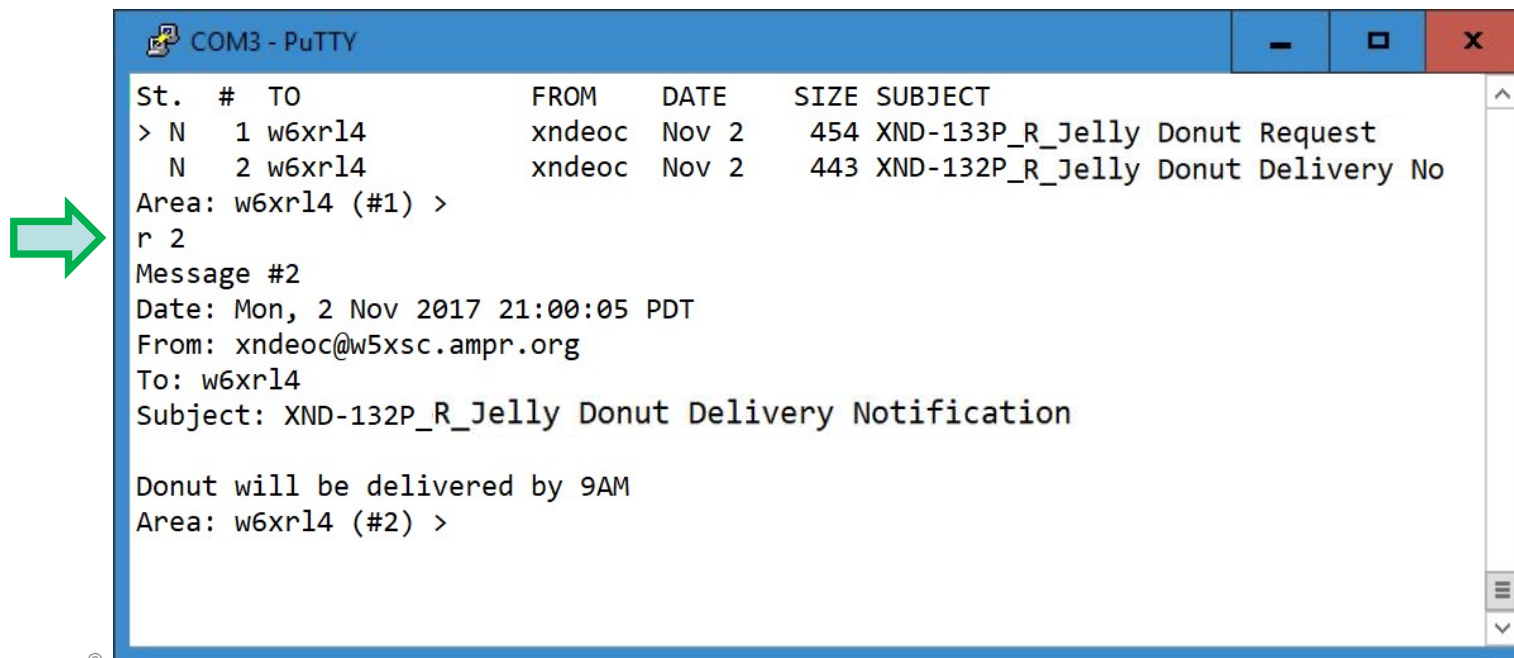
```
COM3 - PuTTY                                            _  □  X

cmd:c w5xsc-1
cmd:*** CONNECTED to W1XSC-1
[JNOS-2.0k.1.xsc.2-B1FHIM$]
You have 2 messages  -  2 new.
Area: w6xrl4 (#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          xndeoc  Nov 3  2627 Bulletin for Packet Type II Classro
Area: xsctest (#1) >
a w6xrl4
Area: w6xrl4 (#1) >
You have 2 messages  -  2 new.
Area: w6xrl4 (#1) >
l
```
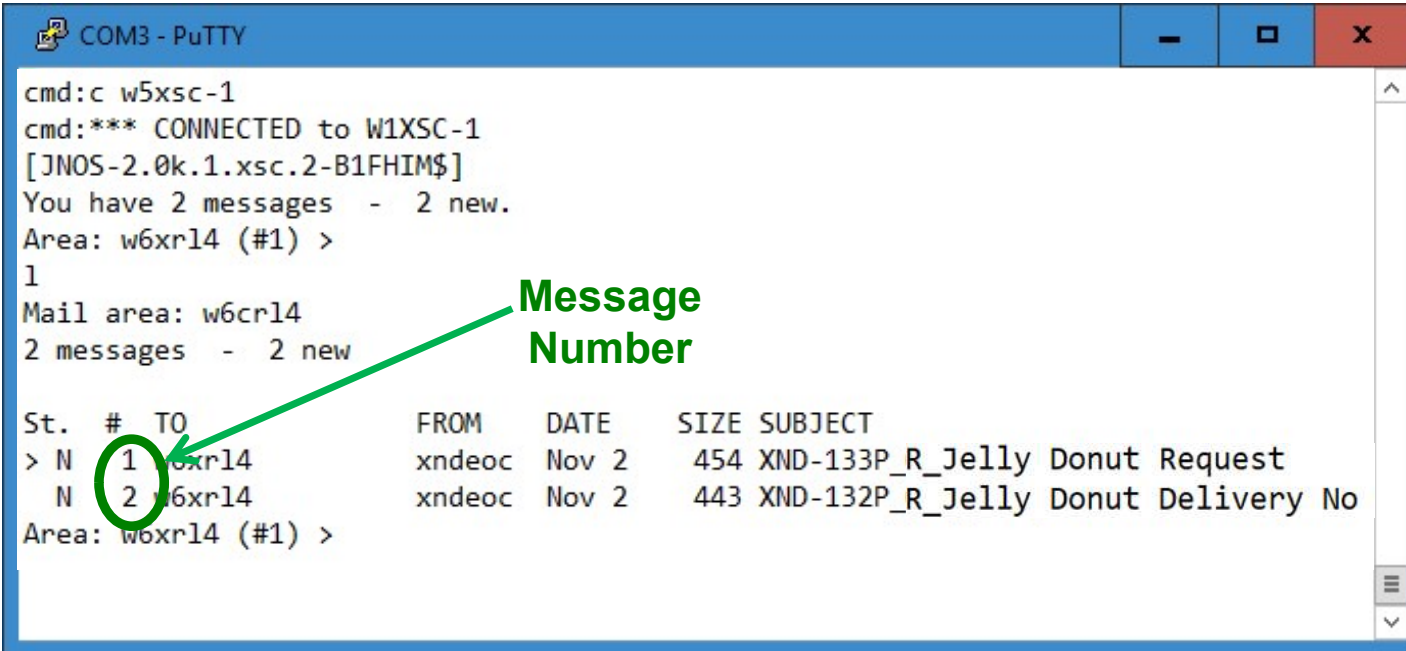
LIST

JNOS Commands

- Displays a list of the messages from the current mailbox (or "area")

  L - by itself will display the headers for all <u>unread</u> messages, if any.

  LA - list all messages, <u>read</u> or <u>unread</u>

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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                                            _   □   X
St.  #  TO              FROM     DATE    SIZE SUBJECT
> N   1 w6xrl4          xndeoc   Nov 2    454 XND-133P_R_Jelly Donut Request
  N   2 w6xrl4          xndeoc   Nov 2    443 XND-132P_R_Jelly Donut Delivery No
Area: w6xrl4 (#1) >
r 2
Message #2
Date: Mon, 2 Nov 2017 21:00:05 PDT
From: xndeoc@w5xsc.ampr.org
To: w6xrl4
Subject: XND-132P_R_Jelly Donut Delivery Notification

Donut will be delivered by 9AM
Area: w6xrl4 (#2) >
```

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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.

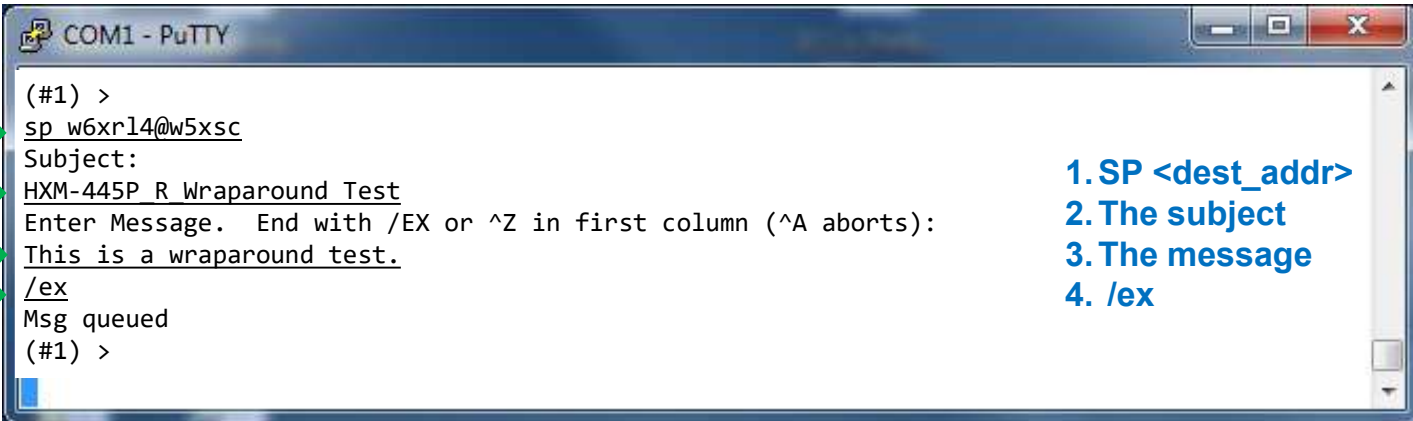- Messages will not disappear until you disconnect and connect again

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

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
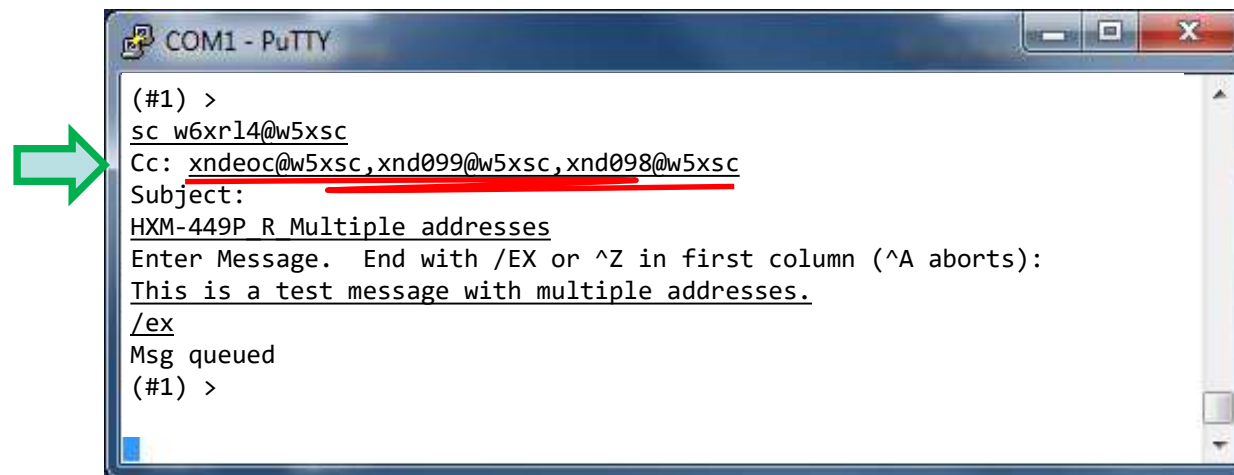   - When done, on the next line, add "**/EX**" and press [Enter]

```
(#1) >
sp w6xrl4@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

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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 <u>one</u> address

- JNOS responds with "**Cc:**"

  - Enter other addresses to receive a copy, separated with commas

```
COM1 - PuTTY                                          _ □ x

(#1) >
sc w6xrl4@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) >
```

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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!

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>`
`<message line 1>`
③ `<message line 2>`
`          :`
`<message line n>`
④ `/ex`

```
*XND_1021M_R_Weather H...    —    ☐    ✕
File  Edit  Format  View  Help
sp XND014@W1XSC
XND_1021M_R_Weather Heads up
To: Xanadu Station 14
From: County Fire
Please double-check the status of all
equipment and confirm its deployment
readiness.
Weather forecast calls for high winds
and lightening tonight through
Sunday.

An official request for this
information will follow.
/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.

FYI… **Manual message basics**

Troubleshooting Hint

- Knowing how manual packet works will help you **troubleshoot problems**.

- Sending to multiple addresses:

```
①   sc <dest_address>
 ⑴ᴬ   <other_addresses>
②   <subject line>
     <message line 1>
③   <message line 2>
           :
     <message line n>
④   /ex
```

```
*XND_1021M_R_Weather He...    —   □   ✕
File  Edit  Format  View  Help
sc XND014@W1XSC
XND015@W1XSC,XND071@W1XSC,XND083@W1XSC
XND_1022M_R_Weather Heads up
To: Xanadu Stations 14, 15, 71, 83
From: County Fire
Please double-check the status of all
equipment and confirm its deployment
readiness.
Weather forecast calls for high winds
and lightening tonight through Sunday.

An official request for this
information will follow.
/ex
```

- After the **SC** command (**S**end **C**opy),
  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.

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!*

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READING BULLETINS ON JNOS

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Bulletin Review
Bulletins

SCCo RACES
Bulletin Board System

- 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.: "equake", "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

SCCo Notice Areas
Bulletins

NOTICE

- 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

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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

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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

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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

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

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

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 #

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
  - …
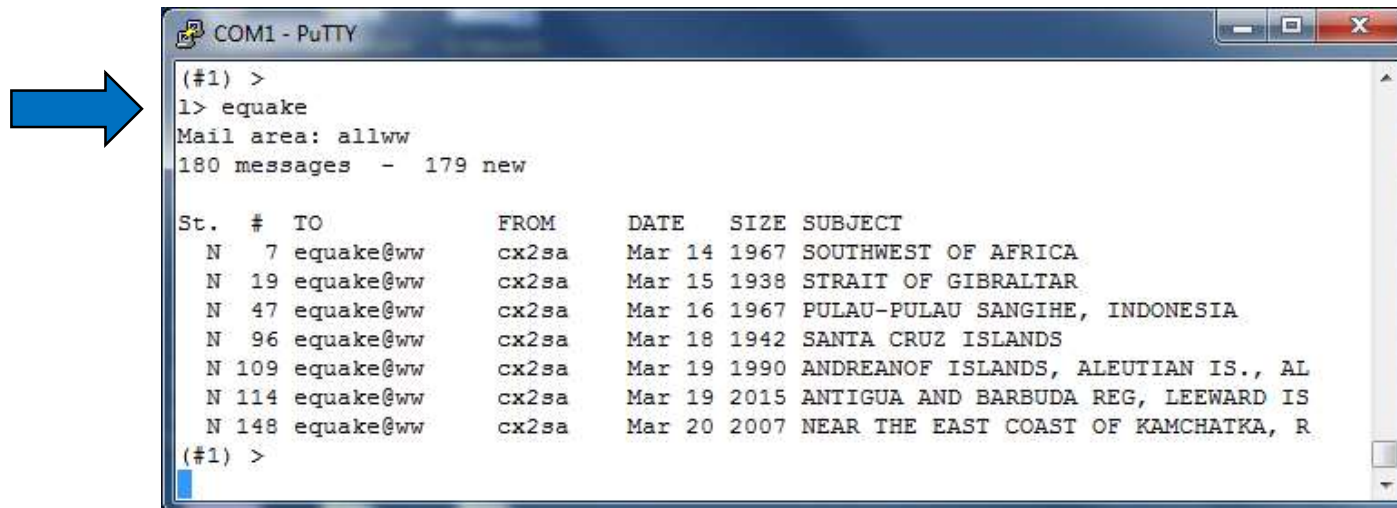

```
COM1 - PuTTY
cmd:c w5xsc-1
cmd:*** CONNECTED to W5XSC-1
[JNOS-2.0j.7t.XSC32.1-IHM$]
You have 4 messages  -  3 new.
(#1) >
a allww
allww  180 messages   -  180 new.    ⟵ 2
(#1) >
xm 24
(#1) >
la
Mail area: allww
180 messages   -  180 new

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       cx2sa    Mar 14 4745 Geophysical Alert Message (WWV)
  N   6 swpc@ww       cx2sa    Mar 14 2944 Report of Solar-Geophysical Activit
  N   7 equake@ww     cx2sa    Mar 14 1967 SOUTHWEST OF AFRICA
  N   8 swpc@ww       cx2sa    Mar 14 3811 Daily Space Weather Indices
  N   9 pic@ww        ja4msm   Mar 15 1919 7+ FLWR507.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         n1dot    Mar 15 1104 WP Update
  N  14 swpc@ww       cx2sa    Mar 15 1723 Solar Region Summary
  N  15 fbblog@ww     gb7cow   Mar 15 7408 FBBLOG 10/2016 * GB7COW BBS *
  N  16 swpc@ww       cx2sa    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     cx2sa    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 humour@ww     gm3yew   Mar 15 6974 Jokes 15/3
  N  23 tech@ww       g8mny    Mar 15 6204 LED Bike Light
More(N=no)?
```

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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
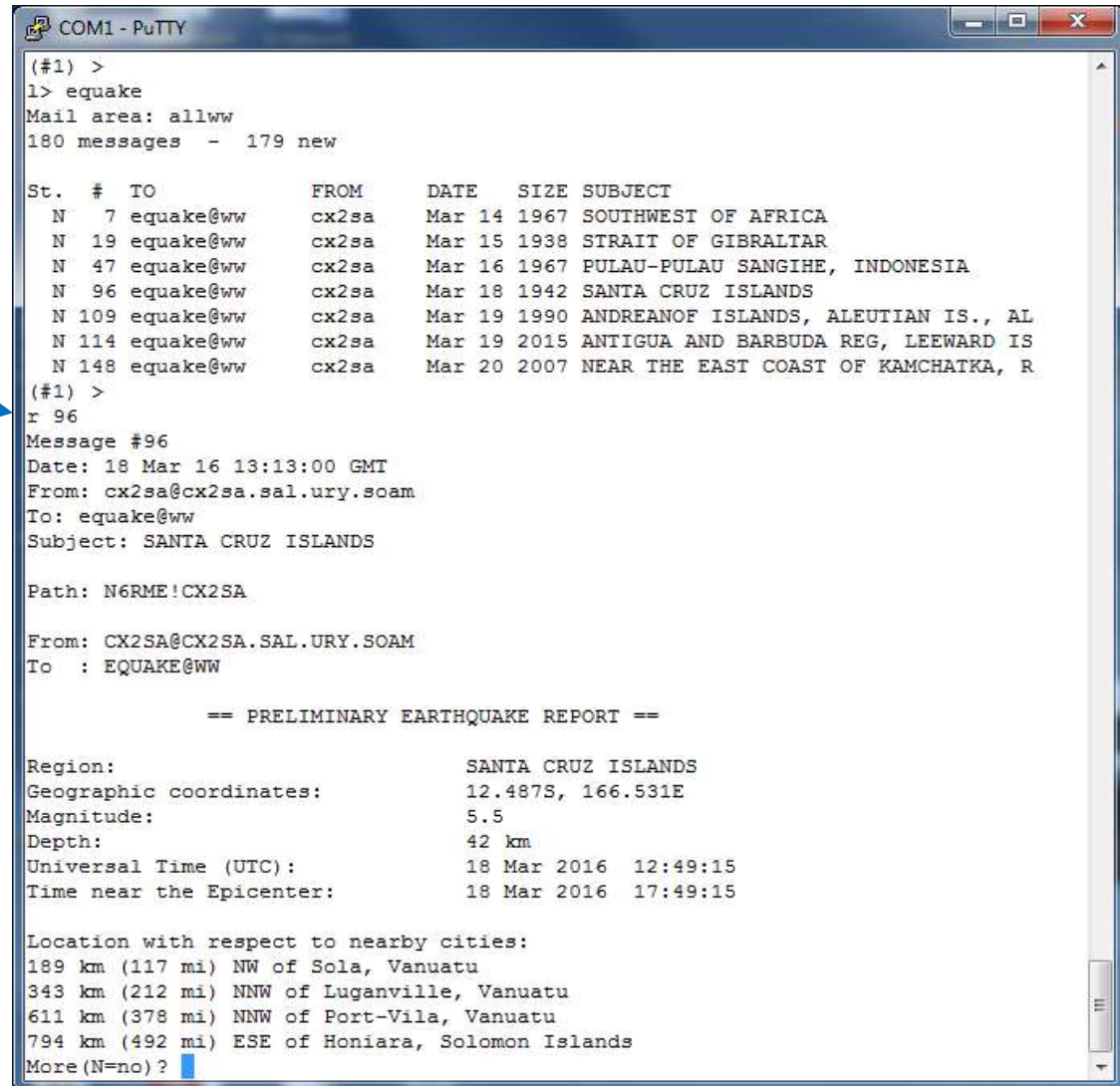
```
COM1 - PuTTY
(#1) >
l> equake
Mail area: allww
180 messages  -  179 new

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

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

Path: N6RME!CX2SA

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

          == 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)?
```

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But, what about PackItForms?

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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?

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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

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 **M**anual to make it unique.

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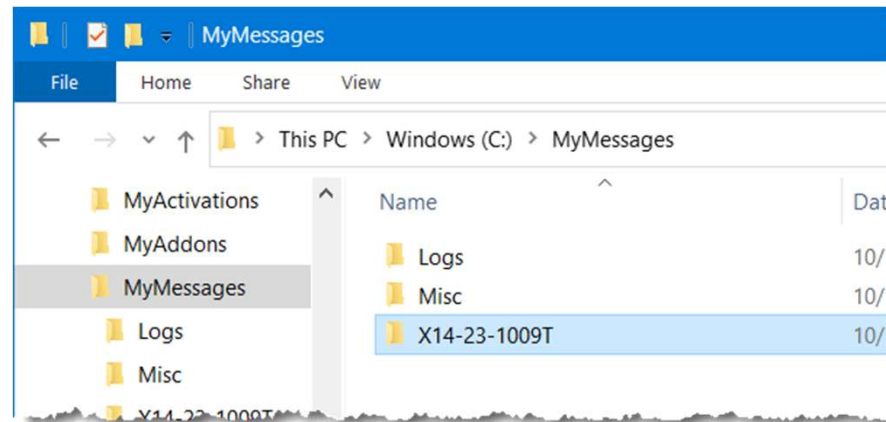
Manual PackItForm messages

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

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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)

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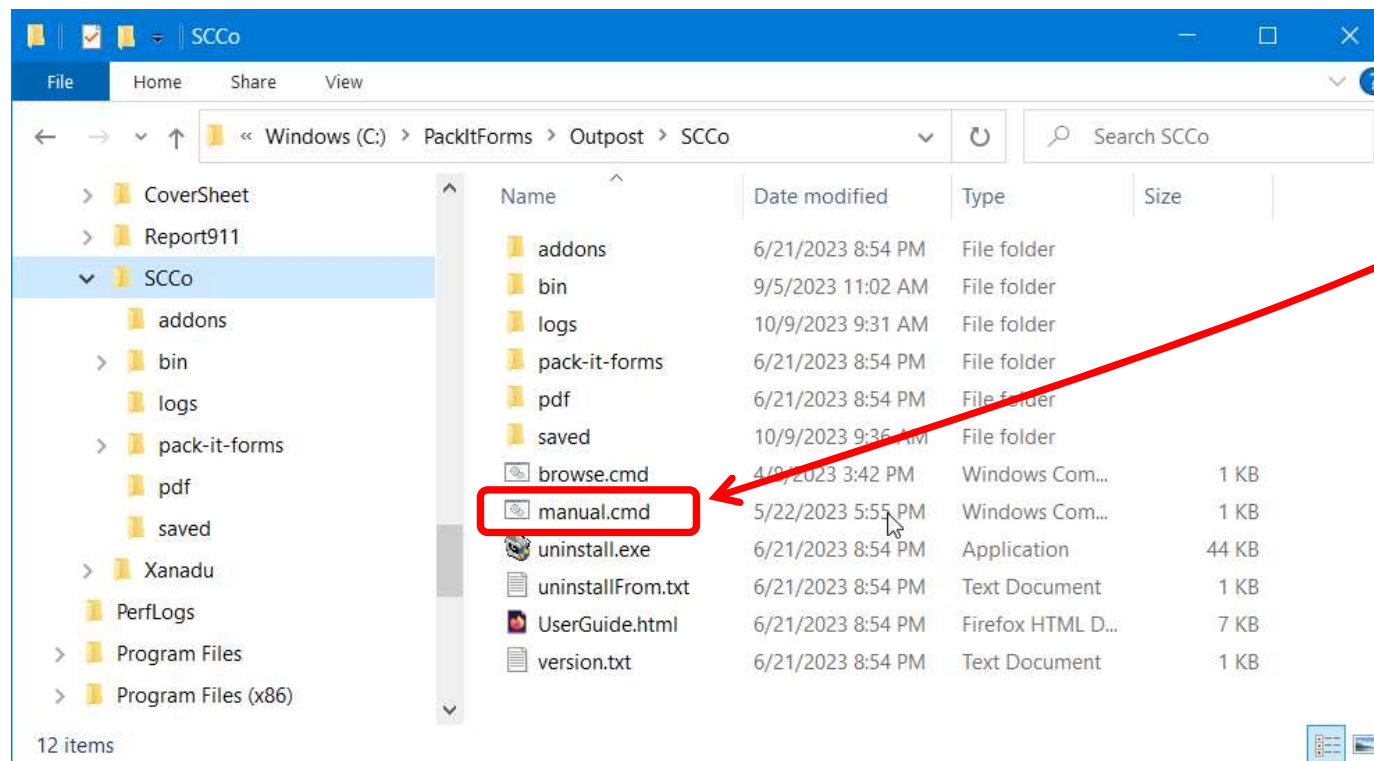
2. Set up manual PackItForm

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

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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*

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3. Pick and fill in a form

Home Page

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

then:

6. Press **Create Message**

The PackItForm opens with the usual fields filled in.

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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

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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**

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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!


```
File  Edit  View  History  Bookmarks  Tools  Help

   SCCo PackItForms          ×     127.0.0.1:64874/text-24/X14-312M_  ×

  ←  →  C  ⌂        ○  🗋  127.0.0.1:64874/text-24/X14-312M_R_ICS213

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 Caption]
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
```

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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
    – **M**ouse *right-click* to paste in the message.
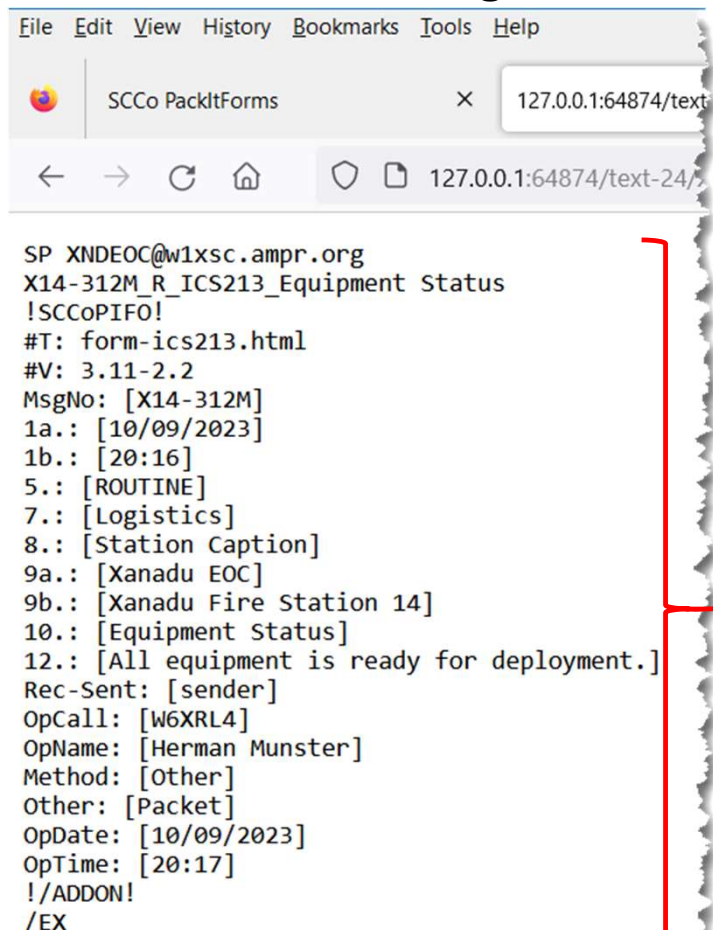
    The complete packet-ready text is pasted into PuTTY and will start being
    transmitted to the BBS.

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

5. Send the message

BBS Command Page
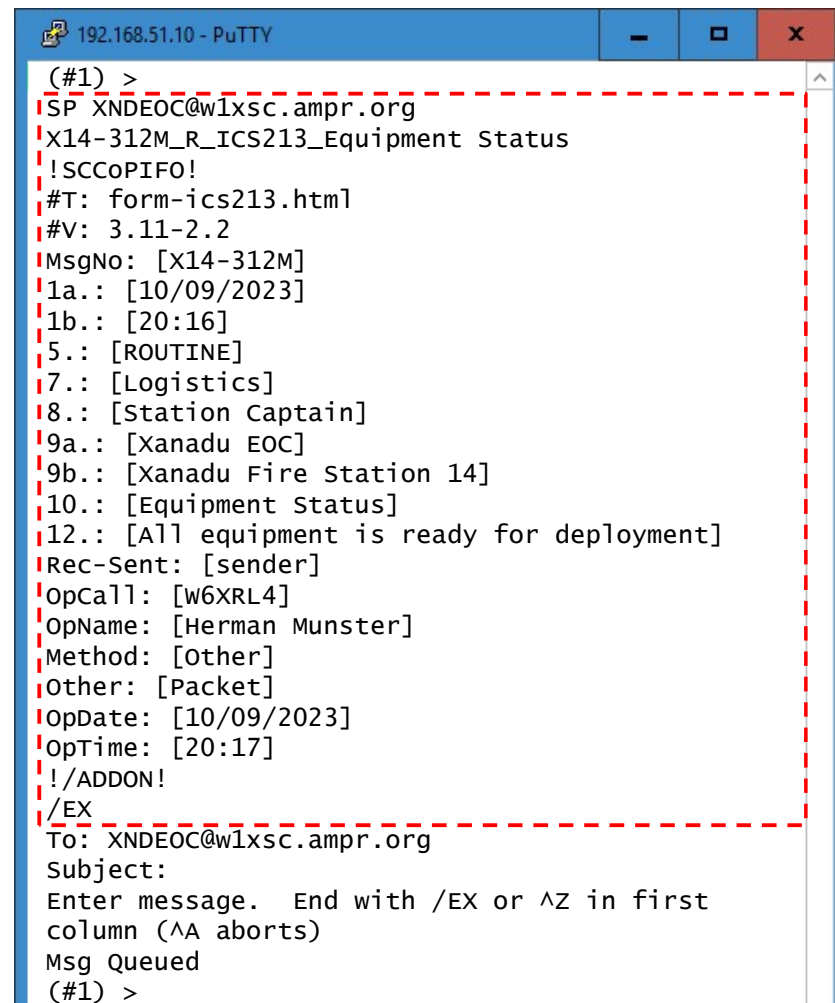
File Edit View History Bookmarks Tools Help

🔴 SCCo PackItForms   ✕   127.0.0.1:64874/text

← → C ⌂   🛡 📄 127.0.0.1:64874/text-24/

```
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 Caption]
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

📄 192.168.51.10 - PuTTY   —   ☐   ✕

```
(#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) >
```

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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**.

File   Edit   View   History   Bookmarks   Tools   Help

SCCo PackItForms   ×   127.0.0.1:64874/text-24/X14-312M_ ×

← → C ⌂   ○ 🗋 127.0.0.1:64874/text-24/X14-312M_R_ICS213

```
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 Caption]
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
```

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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.

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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!

Receive manual messages

PuTTY Screen

```
COM10 - PuTTY                                    —    □    ✕
(#1) >
r 1
Message #1
Date: Mon, 9 Oct 2023 20:26:51 PST
From: xndx14@w1xsc.ampr.org
To: xndeoc@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) >
```

PackItForm Home Page

File Edit View History Bookmarks Tools Help

SCCo PackItForms   ✕   X14-312M_R_ICS213_Equipment Sta ✕

127.0.0.1:64874/manual   110%

Santa Clara County ARES/RACES PackItForms

Setup   Edit ICS-309 Log

Create a message to send

Message type: XSC ICS-213 Message ▼

Create Message

View a received message

Enter the received message, including the From, Subject and other header
drag and drop or upload a file.

Message:
```
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!
```

Upload

Download

Received Date: 10/09/2023   Time: 20:41

Log and View   Reset Fields

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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: xndeoc@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) >
```

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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.

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**.

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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.

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.

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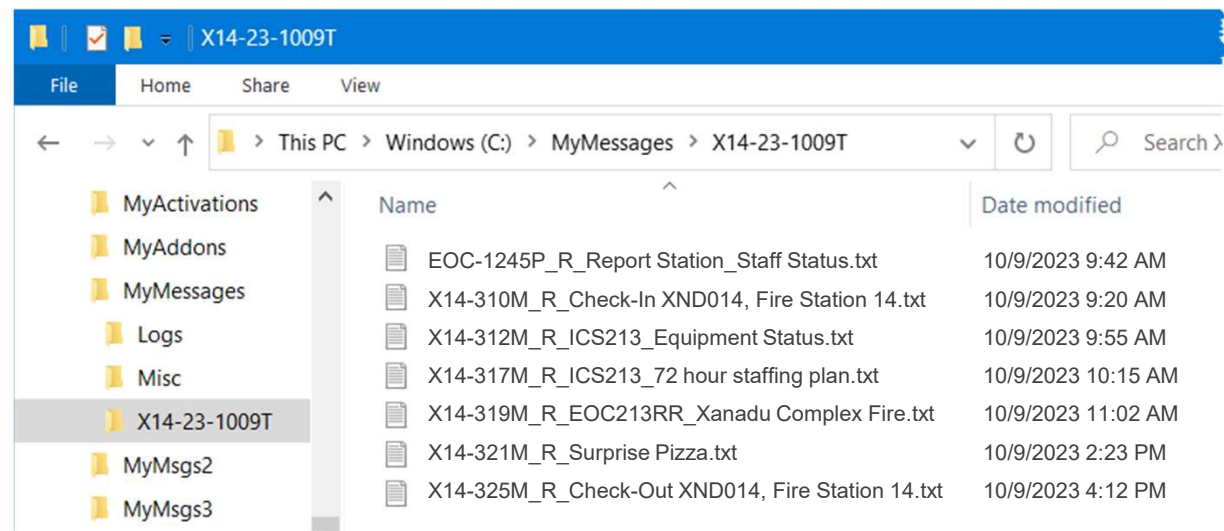
What about the ICS 309?

- 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** , you write a new ICS 309 Log entry for this message.

- From the PackItForm **Home Page**, when you click on Edit ICS-309 Log , you open the ICS 309 form for editing and printing.

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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.

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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

Amateur Packet Radio Field Reference, Type II

- Taking a quick look inside

Table of Contents

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

For SCCo RACES Responders

November 2023

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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 PackItForm Directory (C:\PackItForms\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.

Questions?

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WRAP UP

First things first

- Online Class Evaluation

  - Log into https://www.scc-ares-races.org/activities/events.php
    Click "Submit Class Evaluation" in Events

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

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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##

    – Your assignment Name: Xanadu Post ##

    – Operate using your home city's primary or secondary BBS.

  > Where "##" are the last two digits of your tactical call

- 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.

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, 5November, 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

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