

# *(the unofficial)* Amateur Packet Radio Field Reference

For SCCo RACES Responders

February 2022



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## 1 Quick Reference

### Frequencies (MHz)

Call Sign	Connect	User Access	My Pri, Sec BBS
W1XSC	W1XSC-1	145.750, 223.620, 433.570	
W2XSC	W2XSC-1	145.730, 223.560, 433.590	
W3XSC	W3XSC-1	144.310, 223.540, 433.450	
W4XSC	W4XSC-1	145.690, 223.600*, 433.550	

\*223.600 is primarily for BBS forwarding; O.K. for back-up user access, testing.

### BBS Locations

Call Sign	Location
W1XSC	San Jose
W2XSC	Crystal Peak (South County)
W3XSC	Palo Alto
W4XSC	Frazier Peak (East of Milpitas)

## **2 Introduction**

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### **2.1 Purpose**

This handbook is not an official Santa Clara County RACES deliverable.

This handbook provides an experienced field packet radio operator with a job aid for the different tasks and activities needed to be performed to be successful in the field.

It builds on a reasonable working knowledge of:

1. Digital communications using amateur packet radio
2. Amateur packet radio hardware, software, and configuration
3. SCC RACES packet procedures, protocols, and standards

The experienced packet radio operator can use this handbook as a job aid and real-time reminder of the tasks that need to occur when deployed to the field. It is intended to ensure task consistency, completeness, and operational alignment with SCCo RACES policies and procedures when carrying out field packet radio operations.

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### **2.2 How to use this Handbook**

This handbook is not a tutorial on Amateur Radio Packet and will not teach you all about packet, the hardware, software, and local procedures. You are encouraged to attend SCCo RACES Packet Classes, acquire and use a packet station, and participate in weekly packet practice and regular exercises where packet radio is deployed.

This handbook does provide a summary of how to operate packet radio in the field. However, the packet operator is responsible for keeping current with environmental, procedural, and SCCo RACES packet system changes by:

1. periodically checking the [www.scc-ares-races.org](http://www.scc-ares-races.org) website joining,
2. monitoring the [packet@scc-ares-races.groups.io](mailto:packet@scc-ares-races.groups.io) mailing list, and
3. attending SCCo RACES packet training courses

Updates to this handbook should be made by the handbook user as soon as you become aware of them.

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### **2.3 Other References**

Have these SCCo RACES documents available to reference:

1. Standard Outpost Configuration Instructions - 08/04/2018
2. Standard TNC Parameter Settings - 04/07/2016

### 3 Packet Operator Checklist

A checklist is a type of job aid that helps ensure consistency and completeness in carrying out a task or executing a process. This checklist is relevant for all packet radio operators during exercise, event, and incident activations where field packet operations is required.

#### 1. First Shift: Establishing a packet station

- \_\_\_\_\_ 1. Inform Resource Net Control that you have arrived. Check out of the Resource Net before you leave your car.
- \_\_\_\_\_ 2. Check into the assigned voice net before you leave your car. Start an ICS 309 Comm Log for the voice net.
- \_\_\_\_\_ 3. Make an ICS 214 Unit log entry.
- \_\_\_\_\_ 4. Sign in on the site's ICS 211 Check-in sheet.
- \_\_\_\_\_ 5. Find the supervisor and inform them of your arrival.
- \_\_\_\_\_ 6. Request a safety and assignment briefing; get details on any site- or event-specific conditions that exist. You need to know:
  - a. Supervisor's Name
  - b. Activation Number
  - c. Operational Period
  - d. ICS Location
  - e. Your Tactical Call and Message ID Prefix
  - f. BBS to use
  - g. Band and frequency
  - h. Primary and secondary packet addresses for any preferred destinations
- \_\_\_\_\_ 7. Find and establish the workspace to set up packet operations.

#### 2. Initial setup: Equipment check-out

- \_\_\_\_\_ 8. Find, assess, and setup the packet radio equipment (see *Section 4, Packet Startup Procedure*)
- \_\_\_\_\_ 9. Confirm or set your User Identification (FCC Call Sign) and ***Tactical Call for the assigned agency.***
- \_\_\_\_\_ 10. Check settings before transmitting:
  - Correct BBS in Outpost
  - Correct Interface in Outpost
  - Correct radio frequency
- \_\_\_\_\_ 11. Begin packet operations. Make ICS 214 Unit log entry.

#### 3. Packet Operations: Managing the message flow

- \_\_\_\_\_ 12. Download all notices to ensure you have the latest; read them.
- \_\_\_\_\_ 13. Set up a folder named "SCC Notices" (**Tools > General Settings, Startup** tab) and move all notices to this folder.
- \_\_\_\_\_ 14. Send a test message to yourself to confirm you can create, send to, and receive from the assigned BBS.
- \_\_\_\_\_ 15. Create a Check-In message to your assigned agency using your *Tactical Call* sign (see *Section 7 Check-in, Check-out Message*).

- \_\_\_\_\_ 16. Send, receive, log and process packet messages. To only send a message as soon as it is created, use **Actions > Send Only**
- \_\_\_\_\_ 17. Manually initiate an Outpost Send/Receive at least every 10 minutes.
- \_\_\_\_\_ 18. If a message was not acknowledged:
  - a. Check the message address and BBS
  - b. Resend the message if needed
  - c. Let your supervisor know
- \_\_\_\_\_ 19. If new notices are retrieved, follow any new instructions.
- \_\_\_\_\_ 20. Maintain voice radio contact on the designated voice net.
- \_\_\_\_\_ 21. Make ICS 214 Unit log entries as appropriate.
- \_\_\_\_\_ 22. Report any issues or problems to your supervisor in person or over the voice net (if remote).

**4. Incoming Shift Change:** If you are relieving someone else, do the following:

- \_\_\_\_\_ 23. Inform Resource Net Control that you have arrived. Check out of the Resource Net before you leave your car.
- \_\_\_\_\_ 24. Sign in on the local ICS 211 Check-in sheet.
- \_\_\_\_\_ 25. Find the supervisor and inform them of your arrival.
- \_\_\_\_\_ 26. Request a safety and assignment briefing; get details on any site- or event-specific conditions that exist.
- \_\_\_\_\_ 27. Find the person you are relieving and receive a shift change briefing (see **Shift Change Information** below).
- \_\_\_\_\_ 28. Make packet system updates – Station ID, others as needed.
- \_\_\_\_\_ 29. Make all relevant shift change entries in your ICS 214 Unit log.

**5. Outgoing Shift Change:** If you are being relieved, do the following:

- \_\_\_\_\_ 30. When contacted by your replacement, provide a shift change briefing (see **Shift Change Information** below).
- \_\_\_\_\_ 31. Generate and sign a packet ICS 309 Comm Log for your shift.
- \_\_\_\_\_ 32. Generate all event packet documentation for your shift and deliver as instructed (see *Section 9 Archiving Event Documentation*).
- \_\_\_\_\_ 33. Turn over all assigned equipment to your replacement.
- \_\_\_\_\_ 34. Find your supervisor and inform them of the shift change and your departure.
- \_\_\_\_\_ 35. Make the appropriate shift change entries in your ICS 214 Unit log. Complete and sign the form.
- \_\_\_\_\_ 36. Turn in all paperwork to your supervisor.
- \_\_\_\_\_ 37. Sign out on the site's ICS 211 Check-in sheet.
- \_\_\_\_\_ 38. Check into the Resource Net. Inform Net Control what you plan to do (go home, return to EOC, etc.).

**6. Securing Operations:** when you are directed to shut down, do the following:

- \_\_\_\_\_ 39. Get permission from your supervisor to shut down.
- \_\_\_\_\_ 40. Create a text Check-Out message to your assigned agency using your Tactical Call sign (see *Section 7 Check-in, Check-out Message*).
- \_\_\_\_\_ 41. Generate and sign a packet ICS 309 Comm Log for your shift.
- \_\_\_\_\_ 42. Generate all event packet documentation for your shift and deliver as instructed (see *Section 9 Archiving Event Documentation*).
- \_\_\_\_\_ 43. Complete and sign your ICS 214 Unit log.
- \_\_\_\_\_ 44. Shut down and pack up all assigned equipment.
- \_\_\_\_\_ 45. Turn in all paperwork to your supervisor.
- \_\_\_\_\_ 46. Sign out on the site's ICS 211 Check-in sheet.
- \_\_\_\_\_ 47. Check out of the assigned voice Net and check in with the Resource Net. Inform Net Control what you plan to do (go home, return to EOC, etc.).

### **Shift Change**

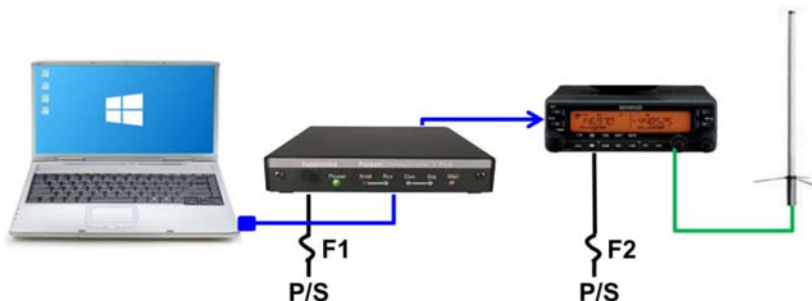
Before turning over or accepting a shift, both the in-coming and out-going operators should review as much information as possible, including:

- 1. Past history of messages sent, replies you expect, and who should get them.
- 2. The location of the toilet, food, water, etc.
- 3. What to do in the event of an emergency.
- 4. Location and timing for briefings that may occur during each shift change.
- 5. **NOTE:** if you are also changing PCs, then pass on the next message number, located here: from Outpost, **Tools > Report Settings > Variables** tab, **Next Message** field).



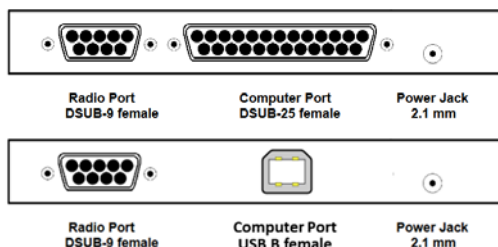
## 4 Packet Startup Procedure

This is a four-step approach for confirming the operational state of a packet station.



### 1. Connections: Confirm that all packet components are correctly cabled.

- \_\_\_\_\_ 1. Laptop; Serial USB Adaptor available if no serial comm port exists.
- \_\_\_\_\_ 2. TNC (KPC3+ shown)





- a. to Computer: Correct serial modem cable to USB – Serial Adaptor, or USB cable for newer KPC3+.
- b. to Radio: **Custom** data cable; depends on the radio.
- c. Power: fused, connected to battery or power supply.
- \_\_\_\_\_ 3. Radio
  - a. To Antenna: coax connected to antenna
  - b. Power: fused, connected to battery or power supply

### 2. Power Up: Apply power. Verify all devices are correctly powered up.

- \_\_\_\_\_ 4. Boot up Laptop; battery is charged or power adaptor is plugged in.
- \_\_\_\_\_ 5. TNC: Apply power:  
**Verify** TNC power LED lights up.  
**Verify** (if using a RigRunner) the fuse LED is not lit (indicates a blown fuse).
- \_\_\_\_\_ 6. Radio: Apply power.  
**Verify** the radio turns on.



### 3. TNC Check: Verify that you can communicate with the TNC.

- \_\_\_\_\_ 7. **Verify:** If using a USB-Serial adaptor, the correct Windows driver is loaded; check with Windows Device Manager (right-click Windows **Start** ( , left-click **Device Manager**, look for **Ports (COM & LPT)**.
- \_\_\_\_\_ 8. Run the terminal emulator such as **Ipserial.exe** or **PuTTY**. Look for the **Ipserial SCC** desktop icon, or from Outpost, **Tools > Interactive Packet > Serial Com Port**.   
Ipserial SCC
- \_\_\_\_\_ 9. From Ipserial, select **Setup > Com Port Settings**. Select the Comm Port for your TNC... Press **OK** when done.
- \_\_\_\_\_ 10. From Ipserial, press **Connect**. Press **Enter**.  
**Verify** that you see the TNC prompt ( `cmd :` ).
- \_\_\_\_\_ 11. If you do not get the TNC prompt or any text, then check:
  - a. Power is applied to the TNC; the TNC is turned on.
  - b. If the TNC was left in KISS mode; then reset the TNC. Try:
    - i. From Ipserial, **Tools > Kantronics Kiss Off**.
    - ii. See TNC manual to perform a hardware reset.
- \_\_\_\_\_ 12. If you do get garbled text, then check Com Port settings:  
9600 baud, 8/N/1, RTS/CTS

### 4. Equipment Settings: Confirm all equipment settings. This occurs prior to starting Outpost.

- \_\_\_\_\_ 13. TNC Settings: Use **Ipserial.exe** or **PuTTY**.
  - a. Check Comm Port settings
  - b. TNC: `cmd: int terminal`
  - c. TNC: `cmd: CD Software`
- \_\_\_\_\_ 14. Antenna is up as high as possible
- \_\_\_\_\_ 15. Radio is set to the frequency for the selected BBS. Plus,
  - a. Tone set to NONE
  - b. Offset set to NONE
  - c. Squelch is open
  - d. Radio is set to high power
  - e. Correct side of the radio is selected for packet (depends on the radio)

### 5. Outpost Application Settings

- \_\_\_\_\_ 16. Packet application (see the next section in this handbook).
  - a. Station ID is set to your FCC Call Sign
  - b. Tactical Call, Additional Text, and Message Prefix is set per your operational instructions
  - c. PC Time is checked to be the correct time
  - d. BBS is set to the required BBS
  - e. Interface is set to the TNC and Com Port you are using

## 5 Client Software

### Application Startup

1. **Start Outpost.** Find the Outpost icon on the PC desktop, and double-click on it.



Outpost SCC

2. The **Station Identification Form** opens.
  - a. Use the **User Call Sign** dropdown to select your call sign. If your FCC call sign is not listed, press **New** and fill in all fields. Verify that **ALL** User Fields are filled in as follows:

User Call Sign:	< your call sign >
User Name:	< your name >
Message ID Prefix:	<Last 3 chars of your call sign, or enter your initials>

- b. Press **Apply** when Done.
- c. Use the **Tactical Call Sign** dropdown to select your tactical call. If your assigned Tactical call is not found, press **New** and fill in all fields. Verify that **ALL** Tactical Call Fields are filled in as follows:

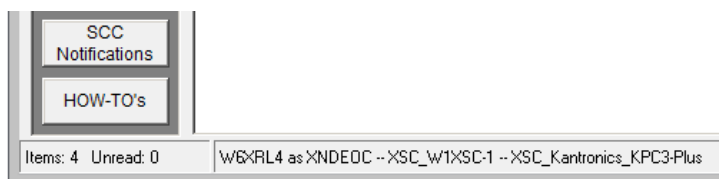
Use Tactical Call:	<input checked="" type="checkbox"/> CHECKED.
Tactical Call Sign:	< per your assignment >, 6 characters
Additional ID Text:	Short description of your location
Message ID Prefix:	< per the assignment> 3 characters. Check with your supervisor

- d. Press **OK** when done. The Outpost main form will open.

3. **Setting up the TNC.** From Outpost, select **Setups > Interface**.

- a. On the *Type* tab, set the Device Name, such as **XSC\_Kantronics\_KPC3-Plus**.
- b. On the *Com Port* tab,
  - i. Com Port: select the PC Comm Port to which the TNC is connected.
  - ii. Baud Rate: 9600
  - iii. Data Bits: 8
  - iv. Parity: None
  - v. Stop Bits: 1
  - vi. Flow Control: RTS/CTS
- c. Do not change any fields on any other tabs.
- d. Press **OK** to Save your settings.

4. **Setting up the BBS.** From Outpost, select **Setups > BBS**.
  - a. On the **Name** tab, select the primary BBS Name for your city. If that BBS is not available, select your secondary BBS.
  - b. Set **BBS Type** to “**Let Outpost determine...**”
  - c. Press **Set/Get TNC** to reopen the TNC Settings form, and press **OK** from that form. This links the TNC to this BBS.
  - d. Do not change any fields on any other tabs.
  - e. Press **OK** to Save your settings
5. **Confirm your settings.** Check the bottom of the Outpost main form and confirm you see your Station ID, Tactical Call, BBS, and TNC listed as you have just set up.



## 6 Standard Subject Line Format

Last revised: 5-Nov-2021 at 10:30 by Tim Howard, KE6TIM

Always use the following subject line format to allow the recipient to review and prioritize messages. The standard subject line format is:

<SenderMsgNbr>\_<HandlingOrder>\_<MsgSummary>

### Where:

<SenderMsgNbr>	<p>Typically, a three-character Tactical ID consisting of letters and/or digits, followed by a hyphen ("-"), followed by three or more digits, followed by an optional letter suffix.</p> <ul style="list-style-type: none"><li>▪ Tactical ID: Individuals should use their initials, call sign suffix or other identifier. Agency EOCs/DOCs should use their assigned three-letter Tactical ID. Others should use the three-character value assigned by their agency, typically the last three characters of the tactical call sign.</li><li>▪ Optional letter suffix: Used to make the number different from any that may already exist on pre-printed forms.<ul style="list-style-type: none"><li>○ Outpost automatically adds the suffix "P".</li><li>○ For Manual messages: use the suffix "M".</li><li>○ For Resending messages with the same content and same Msg Number, manually change the Msg Number suffix to "R".</li></ul></li></ul> <p>Avoid using letters which could be mistaken for digits (I, O, Q, Z).</p>
<HandlingOrder>	One letter: I = Immediate; P = Priority; R = Routine
<MsgSummary>	Short description of the contents of the message

### Example:

Subject Line: LOS-127P\_R\_Status of sandbag supplies

Meaning:	Sender Msg Nbr:	LOS-127P
	Handling Order:	_R_ (Routine)
	Msg Summary:	Status of sandbag supplies

### NOTES:

1. Underscore characters "\_" are used between the above three fields to provide better visual separation.
2. PackItForms will automatically format the subject line and will include the type of form used as part of the subject.
3. Check-In/Out messages have a specific <MsgSummary> format and body format. See the "SCCo Packet Check-In/Out" notice for details.

## **7 Check-in, Check-out Message**

Last revised: 30-Sep-2021 at 22:10 by Tim Howard, KE6TIM

Check-In/Out messages follow the standard subject line format. See the "SCCo Packet Subject Line" notice for general subject line format info.

Check-In/Out messages are always sent as plain text messages (not forms), always have Handling Order = R (Routine), and have a specific subject and body format:

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### **Tactical Check-In:**

Subject: <SenderMsgNbr>\_R\_Check-In <TacticalCallSign>, <TacticalName>

Body: Check-In <TacticalCallSign>, <TacticalName>

Present are:

[FCC call sign and full name of the packet operator]

### **Example:**

Subject: SH1-123P\_R\_Check-In XNDSH1, Xanadu Shelter 1

Body: Check-In XNDSH1, Xanadu Shelter 1

Present are:

W6XRL4, Herman Munster

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### **Tactical Check-out:**

Check-Out messages are the same, except replace "Check-In" with "Check-Out"

### **Example:**

Subject: SH1-128P\_R\_Check-Out XNDSH1, Xanadu Shelter 1

Body: Check-Out XNDSH1, Xanadu Shelter 1

Present are:

W6XRL4, Herman Munster

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### **Individual Check-In:**

*Unless required by the local jurisdiction, it is unlikely you will need to do an individual check-in/out. But if you do...*

Subject: <SenderMsgNbr>\_R\_Check-In < FCCCallSign >, < FullName >

Body: Check-In <FCCCallSign>, <FullName>

### **Example:**

Subject: XRL-234P\_R\_Check-In W6XRL4, Herman Munster

Body: Check-in W6XRL4, Herman Munster

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### **Individual Check-out:**

Check-Out messages are the same, except replace "Check-In" with "Check-Out"

### **Example:**

Subject: XRL-237P\_R\_Check-Out W6XRL4, Herman Munster

Body: Check-Out W6XRL4, Herman Munster

## 8 Recommended Form Routing Cheat Sheet

### General EOC, RACES Forms

Handling	To Location	To ICS Position
ICS-213 Message Form		
If "Severity" is:	Then "Handling" is:	
Emergency	Immediate (ASAP)	Author defined
Urgent	Priority (<1 hr)	
Other	Routine (<2 hrs)	
EOC-213RR Resource Request		
If "Priority" is:	Then "Handling" is:	
Now	Immediate (ASAP)	County EOC
High (0-4 hrs)	Immediate (ASAP)	
Medium (5-12 hrs)	Priority (<1 hr)	
Low (12+ hrs)	Routine (<2 hrs)	
OA Municipal Status		
Immediate (ASAP)	County EOC	Situation Analysis Unit Else: Planning Section
OA Shelter Status		
Priority (<1 hr)	City-managed: City EOC County-managed: County EOC	Mass Care and Shelter Unit Else: Care and Shelter Branch Else: Operations Section
RACES Mutual Aid Request		
Routine (<2 hrs)	County EOC	RACES Chief Radio Officer Else: RACES Unit Else: Operations Section

Medical Forms

Handling	To Location	To ICS Position
HAvBed Report		
Immediate (ASAP)	If open: MHJOC Else: County EOC	EMS Unit Else: Medical Health Branch Else: Operations Section
Medical Facility Report		
Immediate (ASAP)	If open: MHJOC Else: County EOC	EMS Unit Else: Medical Health Branch Else: Operations Section
Medical Resource Request		
If “Priority” is:	If open: MHJOC Else: County EOC	EMS Unit Else: Medical Health Branch Else: Operations Section
Now		
High (0-4 hrs)		
Medium (5-12 hrs)		
Low (12+ hrs)		
Allied Health Facility Status		
Routine (<2 hrs)	County EOC	EMS Unit-or-Public Health Unit Else: Medical Health Branch Else: Operations Section

## 9 Archiving Event Documentation

Whether it be an exercise or a real activation, when your shift is over, your management will provide instructions on things that need to be done. These can include:

- Submitting all documentation (to whom and how)
- Preparing the packet station for the next use, including archiving your shift or the event

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### 9.1 Create the ICS 309 Communication Log

Follow these steps to produce the Packet ICS 309:

1. From Outpost, go to **Tools > Report Settings**, 3rd tab, the **Other ICS 309** section. Enter all fields. These fields will flow to the ICS309 Form.
2. From Outpost, go to **Forms > ICS 309 Communication Log**.
3. Select **Period** Tab. Select **Range**, set the **From:** and **To:** to the date/time range for when your shift (or event) occurred.
4. Select **Content** Tab. User discretion.
5. Select **Output** Tab. Check all the output formats you want.
6. Press **Build Data Set**, then press **Print**.
7. If you print this form, then sign the ICS 309.
8. Deliver this file to your supervisor.

**NOTE:** If you do not have a printer, then select the **Microsoft Print to PDF** printer to produce a .pdf file.

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### 9.2 Create a printable list of your messages

1. From Outpost, **File > Save All**.
2. This will create an Ascii formatted file of all messages in the current folder with a **Page Break** embedded between each message.
3. Use meaningful file names.
4. Repeat this step for any other folder where event messages were created and stored.
5. At some future time, this file could be printed to generate one message per page. Or, because the messages are in a .txt file, individual messages can be copied and pasted into another text editor and printed for reference.
6. Deliver this file to your supervisor.

---

### 9.3 Create an Archive of your messages

1. From Outpost, **File > Export**, then select **"All Folders"** (for your entire system).
2. Use meaningful file names. This creates an Outpost readable file that later can be imported into Outpost to restore your messages back to their original folders.
3. Deliver this file to your supervisor.



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## 9.4 Reset (cleanup) Outpost for the next event

**STOP!** Do not proceed until you have created a **Message Archive>All Folders** first.

**STOP!** Do not proceed until you have permission from your supervisor.

1. If not already done, set up the **SCC Notices** message folder:
  - a. **Tools > General Settings, Start** tab.
  - b. Set the name of one of the folders to **SCC Notices**.
  - c. Move or drag all SCC Notices to this folder.
2. If not already done, export (backup) the **SCC Notices** folder:
  - a. click on this folder. **File > Export**, then select **This Folder**.
  - b. Give it a name, such as "**SCC\_Notices**". Press **OK**.
  - c. Verify that 6 messages were processed.  
**NOTE:** your file is in the C:\SCC Packet\archive directory
3. Delete all Outpost messages:
  - a. Go to **File > Delete All Messages**, select **Yes** at the prompt.  
All your files are deleted.
4. Restore the SCC Notices:
  - a. **File > Import**, select the file, press **OK**
5. Your system is now ready for the next event or incident.
6. Inform your supervisor that this task is complete.

## 10 Manual Packet

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### 10.1 TNC Commands

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. Can be an FCC or Tactical Call sign
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. **CNTL-C**  
Puts the TNC into Command Mode. 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 also be performed with internal jumpers.
7. **INTFACE** [ TERM | ... ]  
When set to TERMINal, the full command set of the TNC is available.
8. **XMITLVL** [ <value> ]  
If blank, displays the current transmit level. If a value is included, sets the transmit level.

---

### 10.2 BBS Commands

1. **HELP** or ? [ command ]  
**H** = List of available commands. **?** is the same as **H** or **HELP**  
**H <cmd>** = Provides details on the command.  
example: **H List** = shows all **List** command options and what they do.
2. **LIST**  
**L** = Displays the headers for all unread messages, if any.  
**LA** = Lists ALL messages, both read and unread  
**LM** = Lists MY messages addressed to me  
**L> addr** = Lists all messages that have "addr" in the message's To: field
3. **READ #**  
**#** = The message number to be displayed.
4. **KILL #**  
**#** = The message number to be deleted.
5. **AREA**  
**A** = Lists all available bulletin areas.

**AF** = Gives a full listing of areas with descriptions (if available).

**A area\_name** = Positions you to that area. Then, use the List and Read commands to view messages.

6. **SEND [ option ] <dest\_address>**

**S[P]** = Send Private; example: *SP w6xrl4@w5xsc.ampr.org*

**SB** = Send Bulletin; example: *SB mtv@xsc*

**ST** = Send Traffic; this is used for NTS packet messages

**SC** = Send Copy; to multiple destination addresses

example: **SC** w6xrl4@w5xsc.ampr.org (enter the 1<sup>st</sup> address)  
(BBS then prompts with **Cc:** for the other addresses. Enter each separated by a comma.)

7. **BYE**

Disconnects from the BBS

8. **XM [ lines to display ]**

**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)

NOTE: 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 SPACE to see the next page or 'n' to stop

---

## 10.3 Connecting to your TNC

### Using Putty:

- Main screen
  - Select Serial
  - Set the serial port name, such as COM1
  - Set the speed to 9600
- Terminal > Keyboard
  - Set the Backspace key to "Control-H"
- Serial
  - Set 9600 baud, 8 data bits, no parity, 1 stop bit is common
  - Set Flow Control to RTS/CTS
- Session
  - If desired, give the session a name and click **Save**
  - Click **Open** to open a terminal session

### Using Outpost > Ipserial:

- Go to: **Tools > Interactive Packet > Serial/Comm Port**
- Click on: **File > Comm Port Settings**
- Select the proper settings for your serial port.
  - Select the appropriate serial comm port
  - 9600 baud, 8 data bits, no parity, 1 stop bit is common
  - Select RTS/CTS flow control.

- Click **OK**
- Click on: **Connect**

## 10.4 Start of Shift: Configure TNC Settings

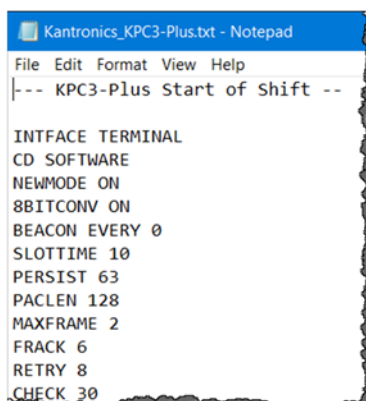
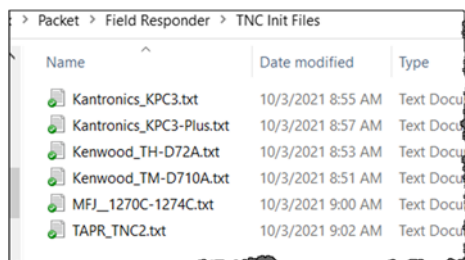
### Create TNC command text files

Create text files that contain the **Start-of-Shift** and **End-of-Shift** TNC commands for the TNCs you might use. This should be done before you ever find yourself needing to send and receive packet messages manually.

1. For each TNC that you use, create a text file with the “Start of Shift” and “End of Shift” TNC commands.
2. Each file should contain both sets of commands

**CAUTION:** Do NOT cut-and-paste directly from the PDF into your terminal emulator; it may not work. Instead, copy the commands first into a text editor (i.e., Notepad), save it, and then copy-and-paste from there into your terminal program.

3. Save each file with the TNC Name.



### TNC Reset

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

- cmd: **XMITLVL** (for KPC-3+) to display the existing value.
- cmd: **restore default** ..
- Watch for...  
**PRESS (\*) TO SET BAUD RATE**
- Press “\*” and enter your call sign
- cmd: **INT Term**
- cmd: **XMITLVL <value>** (for KPC-3+) to reset the existing value
- Apply SCCo standard TNC settings for **manual** operations



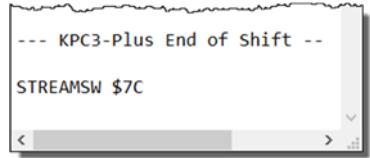
## Start of Shift

4. If you were assigned a tactical call sign, then enter it now:  
cmd: mycall <TacCall>
5. To send the "Start of Shift" TNC commands,
  - a. Connect to the TNC with PuTTY.
  - b. Select and copy (**ctrl-C**) the entire "Start of Shift" command list from the text file.
  - c. Paste it into Putty (mouse **right-click**) at the TNC **cmd:** prompt.

---

## 10.5 End of Shift: Restore TNC Settings

1. After the BBS session has disconnected, you should be back to the TNC command prompt, usually: **cmd:**
2. 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.
3. Cut-and-paste the "End of Shift" Send/Receive settings into PuTTY at the TNC command prompt.



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## 10.6 Sending PackItForms

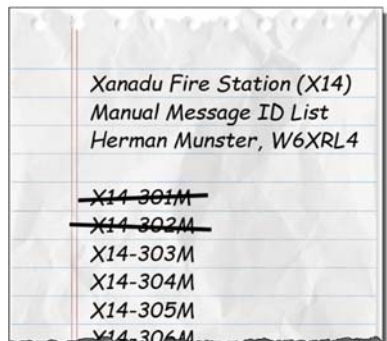
### Directory structure for manual messages

1. Create a directory structure for your text files, such as:
  - C:\MyMessages
  - C:\MyMessages\1Pending
  - C:\MyMessages\2Sent
  - C:\MyMessages\3Received
  - C:\MyMessages\4Printed
2. This location ensures everyone can always see them regardless of the login.

### Manually track your Message ID's

**NOTE:** There are other ways to keep track of your manual message IDs; this is one method.

1. Any piece of paper (Form 1) will do.
2. Create a list of Message ID's to use.
3. For the Message ID, use the suffix **M** (not P) to indicate this is a **Manual** message.
4. Example: given this list, the next Message ID is **X14-303M**.
5. For packet messages sent or received, enter the Message ID in the next message and your ICS 309 form.



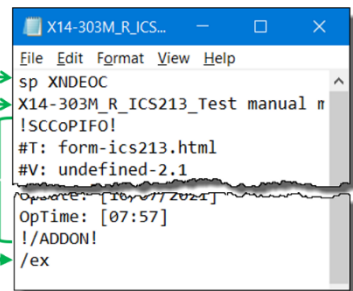
## Sending PackItForm Messages Manually

1. With File Explorer, navigate to C:\PackItForms\Outpost\SCCo. Find and double-click on **browse.cmd**.
2. In the **browse form > Create a message to send** area,
  - a. choose the form type from the dropdown menu.
  - b. Enter your name, call sign, and then
  - c. press **Create**. The PackItForm opens.
6. Get the next Message ID from your list and enter it in the 'My Msg #' field
7. Fill in the rest of the form as usual.
8. When done, press **Create Message**.
9. A new form opens showing the formatted Subject line and Message text ready for copying.

## Recover and save the formatted message text

1. Save your message first
  - a. Open Notepad or any other text editor.
  - b. Copy the Subject to Notepad.
  - c. Copy the Message to Notepad.
2. Add the additional manual packet commands to create a packet-ready message to send (see the example below):
  - a. `sp <destination>`                      **Send Private**
  - b. `/ex <CR>`                              **End of Message**
  - c. Your file should look something like this (PackItForms example):

```
sp <dest_address>
<subject line>
<message line 1>
<message line 2>
:
<message line n>
/ex
```



- d. Make sure there are no blank lines between the **sp** command, <subject line>, and start of the message.
- e. Save the file with the Subject as the file name to your **../1Pending** folder.

## Use PuTTY to Send PackItForm

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

3. Start PuTTY
4. After connecting to the BBS, start sending the message.
5. Once at the BBS Prompt:
  - a. Highlight the entire message from the saved message text file
  - b. Copy using **Ctrl-C**.

- c. Position the cursor in the PuTTY screen.
  - d. Paste using a mouse **right click**. Hit **Enter**.
6. Once sent, move the message text file to your **../2Sent** folder.

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## 10.7 Receiving PackItForms

### Use PuTTY to read a PackItForm Message

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

1. Connect to the BBS using PuTTY
  - a. List your messages with **LM**.
  - b. Read the message with **R #** (message number).
  - c. You recognize Message #1 is a PackItForm message.
  - d. Highlight all text from **Date:** to **!/ADDON!** (inclusive).
  - e. In PuTTY, selecting text copies it to the clipboard.

### Save the retrieved message text

2. Save your message first
  - a. Open Notepad or any other text editor.
  - b. Paste the entire message into Notepad.
  - c. Save the file with the file name set as the Subject to your **../3Received** folder.

### Recreating a message

1. Run the *browse.cmd* (or go back to the Create/View tab if it is still open).
2. Use the section titled "**View a received message:**"
  - a. Enter your Local ID (Destination Msg #).
  - b. From the text file, paste the message text from **!SCCoPIFO!** to **!/ADDON!** into the Message field
  - c. At the bottom of the browse form, fill in the **Name**, **Call sign**, **date**, and **Time** fields.
  - d. Press **View**
3. The filled-in form opens with the content filled in.
4. From the Browser, press **File > Print** the message.
5. Finally, move the Text File from the **../3Received** folder to your **../4Printed** folder to indicate that it was completely processed.

