Packet Exercise Workbook
Santa Clara County ARES/RACES

Version 6.0

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Contents

0   Overview

0.1   Introduction

This Workbook is intended to give the new Packet Operator a hands-on, self-guided walk-through of the packet solution used in Santa Clara County (SCCo). It consists of a series of exercises that will expose the reader to the features and operations of two important pieces of software:

1. Outpost Packet Message Manager. This is a windows-based packet messaging client with an email-like GUI that hides the complexity of the packet world. It lets you read, delete, create, send, reply to, and forward messages back to a SCCo Bulletin Board System (BBS).

2. PackItForms. These are web forms with *fill-in-the-blank* fields that allow the user to create messages in the format used by the Santa Clara County SCC Op Area. Additional supporting software automatically extracts and formats the field data for sending, as well as re-populating the form with the same data on the receiving end.

The workbook includes over 20 exercises that will guide you through the operation of the SCCo RACES amateur radio packet solution. These exercises are broken down into the following 5 topics:
1. Setup
2. Working with Messages
3. Customizing Message Handling
4. Other Topics
5. Localizing Packet

0.2   Getting the most from this workbook

This workbook will introduce a topic and provide some background. Pointers to specific information will be made that will help you complete each exercise. The user is also encouraged to review the references associated with each exercise for more details that may help explain or clarify some of the operational concepts of the software.

Each exercise builds on what you practiced in previous exercises. This means that the level of details goes from greater to lesser.

0.3   Before you begin…

Getting ready to use an Amateur Radio packet system implies you have a minimum set of things available to you. These include:

1. A working packet system:
    a. Hardware: Windows PC, Terminal Node Controller (TNC), radio, and antenna.
    b. Software: The current SCC Installer installed on your PC

2. Information about the Santa Clara County RACES packet system found on the SCC RACES Website here https://www.scc-ares-races.org/data/packet/index.html:
    a. SCCo Packet Frequencies and BBS Listing
    b. SCCo Standard Format for Packet Message Subject Line

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      c.   SCCo Packet Network Addressing
      d.   SCCo and your City Packet Tactical Calls
      e.   SCCo Packet Weekly Check-in Procedures

3. Information about the specific packet Bulletin Board System (BBS) that you can use, or that your jurisdiction uses. Using the references above, look up and fill in the following:

      a.   Your City's primary BBS (AX.25 name): _____ Frequency: _____

      b.   Your City's secondary BBS (AX.25 name): _____ Frequency: _____

4. Contact your EC and ask to use a temporary Tactical Call. Each city has 10 assigned spares. For example, Cupertino has CUP001 through CUP010; your city will be similar.

      a.   Example:

      Your Tactical Call:_____**CUP005**_____ Message ID Prefix: __**C05**_____

      b.   Fill in the following:
      Your Tactical Call: _____ Message ID Prefix: _____

0.4   Other References

Santa Clara County RACES Packet Reference

1. https://www.scc-ares-races.org/data/packet/index.html This is the starting point for all things Packet for Santa Clara County RACES. This page has a wealth of information with which all SCCo Packet Operators should be familiar.

2. https://www.scc-ares-races.org/data/packet/about-packitforms.html This is a good description of what PackItForms is all about and how it is used in Santa Clara County.

Outpost Packet Message Manager

1. https://www.outpostpm.org/. This general public location for all things Outpost.

2. Outpost Quick Start Guide (See the Outpostpm.org website *Documentation* link). This guide provides some brief instructions on how to install, configure, set up, and use the Outpost Packet Message Manager Application suite. While this will step you through the basics to get you up and running, your ultimate reference will be the Outpost User Guide

3. Outpost User Guide Basics (See the Outpostpm.org website *Documentation* link). This manual has more details that the user may find of interest while exploring the Outpost software.

4. Outpost How-To (See the Outpostpm.org website *HowTo* link).

1 Setup

1.1 Before you begin…

Whether you own your own packet station or plan on responding to a location where one already exists, performing the basic check is critical to confirm for yourself that the station ready.

ACTIVITY
A lot of what you need to do here is just make sure everything is ready to operate packet. While your specific equipment will dictate how you put things together (and you have all the right cables), it will basically look like this:
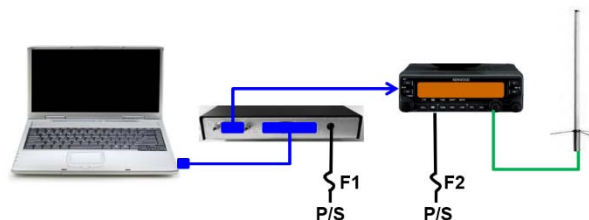
1. Equipment Setup
   a. Verify the PC is connected to the TNC.
   b. Verify the TNC is connected to the radio.
   c. Verify the Radio is connected to an antenna.
   d. Apply power to the TNC, radio, and PC.

PC/Laptop
• Comm Port, or
• USB port and a USB-to-Serial adaptor

TNC
• Serial Modem cable
• Specific radio data cable
• Power cable, fused, to power supply or battery

Radio
• Antenna coax connected
• Power cable, fused, to power supply or battery

1.2 Finding your TNC's Com Port

Before running Outpost, where is the TNC? More specifically, to what PC Com Port is your TNC connected? If you already know the Com Port for your TNC, skip the rest of this section and proceed to *Section1.3*. If not, then continue here.

ACTIVITY
There are two ways to find the com port: the hard way, and the easy way. Let's take the easy route.

1. Make sure your TNC is connected to your PC and powered on.

2. With Outpost installed, look on your desktop for the icon titled **Ipserial SCC**. This is the terminal emulator program that lets you connect to any configured serial Com Ports on your PC. Double-click on the **Ipserial SCC** icon.

3. Once the program opens, Select **Setup** > **Com Port Settings**. The program will search for any configured Com Ports… this may take a few seconds.

4. Once the form opens, select the dropdown for the **Port:** field.
   a. If there is only one Com Port listed, then it is likely to be your TNC. Select it; press **OK**.
   b. If there are more than one Com Ports listed, then you will have to try each one. Select the first one, press **OK**, then press **Connect**, then **Enter**. If you see the TNC's `cmd:` prompt, you found your TNC. Otherwise, try the next one.
   c. If you do not see any Com Ports listed, then check that the TNC is connected to the PC. For a KPC3-Plus USB device, verify the driver is correctly installed, and try again.

5. Back on the Ipserial.exe program, press **Connect.** You may need to press **Enter** to get the TNC's attention. If you see the TNC Welcome message, or the `cmd:` prompt, then you are done!
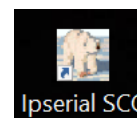
   Write down your TNC's Com Port number here. _____

1.3   Setting up Outpost

OK, you now know the following:
1. Your Call Sign
2. Practice tactical call
3. TNC Com Port
4. BBS Connect Name
5. BBS Frequency

Time to get Outpost ready for talking to the BBS.

ACTIVITY
1. Run Outpost.
    a. Find the ***Outpost SCC*** icon on your desktop and double-click on it.
    b. The Station ID form should open. If not, select ***Setup > Station ID***.
        i.   If this is your first-time running Outpost, press **New**. Then enter:
            1. *User Call Sign:* your call sign
            2. *User Name:* your first and last name
            3. *Message ID Prefix:* defaults to the last 3 characters of your call sign.
        ii. Press **OK.**
        iii. If you previously set up your call sign but your call is not shown, then select the drop-down by the Call sign field and select your call. Press **OK**.
    c. Next, the PC Time Check form will appear. Press **Update** if the time is wrong. Press **OK** when done.
    d. Once you are seeing the Outpost main form, select your TNC: ***Setup > Interfaces***.
        i.   From the dropdown, pick the XSC interface that matches the TNC that you are using. In the Com Port Tab, select the Com Port to which your TNC is connected. Press **OK** when done.
    e. Select your BBS. ***Setup > BBS***.
        i.   From the dropdown, pick your Primary BBS identified in the previous section. The friendly names are prefixed with "XSC_". Press **OK** when done.

2. Confirm your settings on the status bar at the bottom of the Outpost main form.


```
CUP-17-29T
SCC RACES

Earthquake
Items: 11   Unread: 4        KN6PE – XSC_W1XSC-1 – XSC_Kantronics_KPC3-Plus (Com3)
```

3. Set your radio frequency for this BBS.
    a. Simplex only, no Tone, no offset, high power.

Proceed to the next section to send a round-trip test message.

## 1.4   Sending a test message… to yourself (round-trip)

This test is a good step whenever you are starting up a station to confirm it is all working correctly.

ACTIVITY

1. Make sure you have completed the steps above.

2. Confirm the BBS is actually out there. From Outpost, press the **Send/Receive** button.

   VERIFY: Session window opens and the BBS connects. Note the `*** CONNECTED`… text. This is a good indication that the BBS is there and is talking to you. Once the session is complete, Outpost disconnects from the BBS and this form will close.

3. Create a test message addressed to yourself. You can make this as simple as you want, provided all fields are filled in.

   a. From Outpost, press **New.**
   b. Note that the **BBS:** and **From:** fields are automatically filled in.
   c. In the **To:** field, enter your call sign.
   d. In the **Subject:** field, add a subject, such as "_R_Round trip message". Add this after the Message ID.
   e. In the **Message Body** field, enter a brief text message.
   f. Press the **Send** button when done.
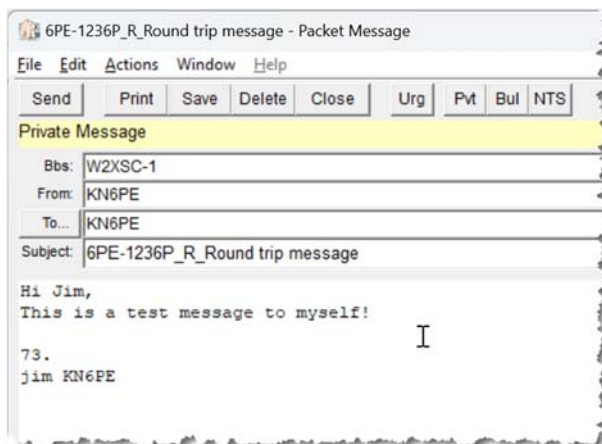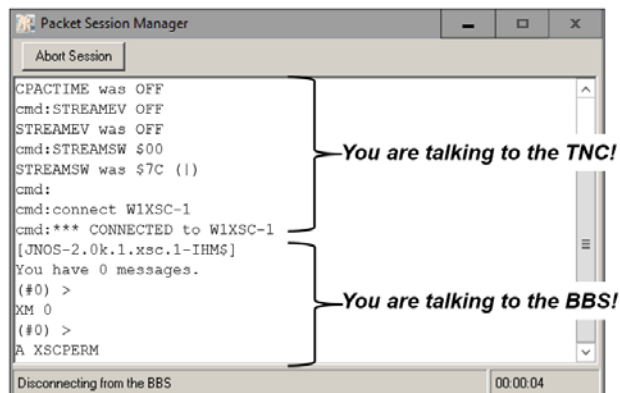
4. Where's your message?
   a. Click on the **Out Tray** button (on the left) and confirm you see your message listed.
   b. From Outpost, press **Send/Receive**. During this session, watch as your message is transmitted to the BBS.
   c. Click on the **Sent Folder** (on the left) and confirm you see your message here, now with a date and time. This is the date/time from your PC that your message was posted to the BBS.
   d. Press **Send/Receive** again. During this session, watch as Outpost lists and then retrieves your message from the BBS.
   e. Click on the **In Tray** and confirm your received message is there.
   f. Open the message; single click on it to highlight your message and then press **Open**.

WHAT JUST HAPPENED?

1. The message you created was put in the **Out Tray** and was ready to be sent.
2. After Outpost sent it to the BBS, your message was moved to the **Sent folder**.
3. When you ran Outpost again, your message was downloaded and saved in the **In Tray**.
4. You now have 2 copies of your message: the original sent message in the **Sent Folder**, and the received copy in the **In Tray**.

Congratulations… you just sent your first amateur radio AX.25 packet message!

2   Working with Messages

2.1   Sending a message to someone else

While sending messages to yourself may be a lot of fun (and a good system test), it is primarily not what you will do during an activation. In this exercise, we will create a message to another packet user.

PREPARATION

1. You will send this message to your instructor: kn6pe@w1xsc.

ACTIVITY

1. From Outpost, Press **New** to open a new message form. Enter their destination address.
   a. To: kn6pe@w1xsc.ampr.org   *Full address always works… from anywhere!*
   b. To: kn6pe@w1xsc   At least always add the BBS call sign
   c. To: kn6pe   **DO NOT USE THIS SHORTCUT**

   NOTE! Do not confuse the BBS connect name (w1xsc-1) with the address domain name (@w1xsc).

2. On the subject line, include the phrase "_R_**Exercise 2.1 - <your_call>**".

3. Fill in the rest of the message with whatever content you want.

4. When done, press **Send**.

5. From Outpost, press **Send/Receive**.

6. Confirm with the addressee that they received your message.

WHAT JUST HAPPENED?

1. Addressing will be discussed later, but you can start to see how addressing works:
   a. If you address it only to the call sign, the message stays on this BBS.
   b. If you address it to the call sign@<bbs>, the message is forwarded to that SCCo BBS.

   NOTE!!! Always use <u>call sign@<bbs></u> addressing… THIS IS A BEST PRACTICE!!!

2. When working within your jurisdiction, it is likely you all will be on the same BBS. Why is addressing important? Well, what if you cannot reach the BBS but can connect to a different BBS? Understanding the address format may help you send a message from one BBS to another AND guarantees that your message is delivered to the correct BBS.

TRY THIS: If you can reach your secondary BBS, reconfigure Outpost to connect to it, then send yourself a message addressed to you on your primary BBS. When done, go back to your primary BBS and retrieve it.

2.2   Sending to multiple destinations

Like email, Outpost lets you send a message to multiple destinations. While there is no "cc:" field, you can put multiple addresses in the "To:" field.

PREPARATION

1. Contact your EC and ask for their packet address. Let them know you will be sending a message.

ACTIVITY

1. From Outpost, Press **New** to open a new message form.

2. In the **To:** field, enter your EC's (or someone else's) packet address, and the address for KN6PE. If you want a copy of the message as well, then enter your own call sign.

3. Separate each address by a comma or semi-colon:
        To: <your_ECs_call>; <instructors_packet_address>; <another/your_address>

4. On the subject line, include the phrase "**_R_Exercise 2.2 - <your_call>**".

5. Fill in the rest of the message.

6. When done, press **Send**.

7. From Outpost, press **Send/Receive**. Press **Send/Receive** again to retrieve the messages sent to yourself.

8. Confirm with the addressee that they received your message.

WHAT JUST HAPPENED?

It cannot be reiterated enough the **importance of understanding addressing**. While we will talk more about addressing in the next class, here is a short summary:

1. Addressing a message to an email address (kn6pe @ w1xsc.ampr.org) always works. If using an internet address (kn6pe @ arrl.net), it sends it out of the SCCo Packet system to the internet for delivery.
2. Minimally address all SCCo messages to a call sign @ BBS (kn6pe@w1xsc). This will deliver it to the named SCCo BBS regardless of the BBS from which it was sent.
3. Addressing a message to only a call sign (KN6PE) leaves the message on the BBS to which you are currently connected; this may not be the BBS you want. **DO NOT USE THIS SHORTCUT**.

2.3   Sending to an email address

INTRODUCTION

If you have successfully completed the above exercises, you may be thinking whether you can send a packet message to an email address… the answer is yes… let's do it!

WARNING! When sending email *__from__* your home or work email program to the BBS, make sure you switch your email preferences to use *__text only__* (HTML turns a 50-byte text message into ~2000 bytes).

PREPARATION
1. Your personal email address: _____
2. EC or AEC's email address: _____
3. Instructor's email address: kn6pe @ arrl.net (without the spaces)

ACTIVITY
1. From Outpost, create a new message.

2. In the **To:** field, enter your email address, your EC's email, and that for KN6PE (above).

3. On the subject line, include the phrase "**_R_Exercise 2.3 - <your_call>**"; fill in the message.

4. When done, press **Send**, and then **Send/Receive**.

5. Go to your personal email and download your email.

6. Here's what the **sent** and **received** messages may look like. I use Outlook for reading my email.

7. Note the **From:** address in the received email. **Yes**! you actually have an email address that you can send from the internet into the packet system.

8. Note the address domain name: @w1xsc.ampr.org

9. Ok, let's try the obvious next step; from your internet mail account, create an email message back to yourself at the BBS, but…

MAKE SURE THIS MESSAGE is SET to a TEXT MESSAGE.

10. After sending the email, go back to Outpost and press **Send/Receive**. Depending on how long it takes for the email to navigate through the internet, you should get it within a few seconds.

11. Note the **From:** address (your email account) and the **To:** address (your BBS email address).

12. With this capability, think about how this could be useful in your jurisdiction as part of the emergency response.

TRY THIS: Create another short message but send it as an **HTML** message. Compare the size of what you sent to what you received. Now that you see what could happen, **BE CAREFUL NEVER TO DO THIS!!!**
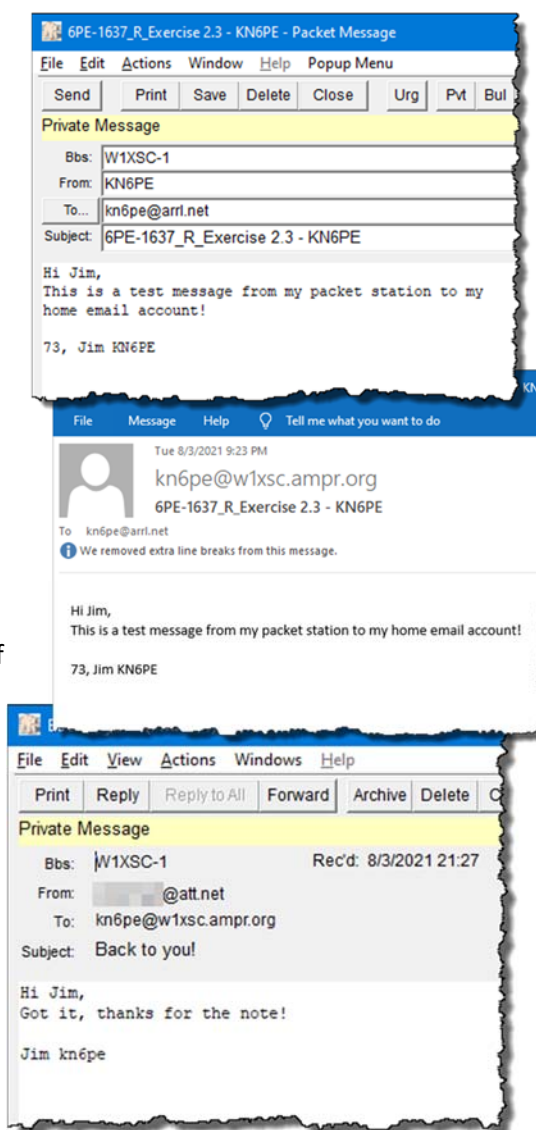
2.4 Sending a message from a text file

INTRODUCTION

You can create a message from a text or .csv file. This could be useful if someone else needed you to send a message that they already typed up. Typically, they may show up with a message on a USB flash drive (memory stick!).

So, if someone hands you a USB flash drive and asks you to send the text file or spreadsheet report on it, what do you do? Or more importantly, what questions do you ask? You would want to know:

1. What is the name of the file (there may be more than one on this drive)?
2. If it is a spreadsheet, there are multiple spreadsheet tabs, which one?
3. To whom is the message going (i.e.: name, position, contact info)?
4. At what site does this person work (xxxEOC, Fire Station, Field ICP, other)?
5. What is the priority (handling order) for sending this report?

You probably noticed that the information above looks a lot like what is found on the Radio Routing Sheet. How to send this message – as a plain text file or embedded in an ICS213 Message Form – is a discussion you should have with the message author. If it is decided to send as a plain text message, you might want to add some **From** and **To** information at the top to help on the receiving end. For the moment, this is out of scope for this exercise.

PREPARATION – Create a text message

1. For this exercise, simulate being handed a text file by creating one yourself. With your favorite ascii text editor, create a text file with any content.

2. Save the file; remember the name and the location of where you put it.

ACTIVITY

3. From Outpost, Press **New** to open a new message form.

4. Manually add the handling order characters right after the message ID.
   For instance: use "**_R_**" for **R**outine, "**_I_**" for **I**mmediate, and "**_P_**" for **P**riority (no quotes).

5. Select **File > Open a File** (NOT Open a Report) and locate the message text file you previously created. Select it and press **OK**.

6. Note that the file content is added to the message and the file name is appended to the Subject Line after the "**_R_**"

7. Fill in the rest of the message, and press **Send**, then **Send/Receive**.

2.5 Sending a Spreadsheet .csv file

INTRODUCTION

This exercise talks about the mechanics of creating a spreadsheet, a .csv file, and sending it by Outpost. The process of incorporating this during an exercise or activation is not covered here.

Attempting to send a standard spreadsheet file will cause Outpost, the BBS, or both, to hang because of embedded binary content in the spreadsheet. However, most spreadsheet applications support a way to export spreadsheet data into one or more ASCII formats that are compatible with Outpost. One of these is known as a ".csv" file (comma separated value).

ACTIVITY -- SENDING

For this exercise, simulate being handed a .csv file by creating one yourself.

1. Create a material request spreadsheet with 6 columns; "Item#"; "Description", "Onhand", "Units","Qty needed", "NeedBy".
NOTE: For this exercise, make up whatever columns you want.

2. Fill in some data to create the spreadsheet.

3. Press **File->Save As** from the spreadsheet menu.

4. Change the "**Save as Type**" to "Comma Delimited (*.csv)". Press **Save**. A file with a *.csv extension is created. Note where you saved this file!

5. From Outpost, Press **New** to open a new message.

6. Manually add a "**_R_**" after the message ID reflecting the Handling Order.

7. Select **File > Open a File** (NOT Open a Report) and locate the .csv file to be sent. Select it and press **OK**.

8. Note that the File name is appended to the Subject Line after the "**_R_**" and the .csv text is added to the message body.

9. Fill in the rest of the message.

10. As a test, send this message to yourself. When ready, press **Send**, and then **Send/Receive** twice.

ACTIVITY -- RECEIVING

11. After you receive the message back, open the message, and select **File** > **Save As…** The file name will default to that of the message's subject with the correct ".csv" extension. Press **Save**. Close the message.

12. With Windows Explorer, find the message you just saved and note that the .csv file extension associates it with your spreadsheet program. You can now double-click on it and open it in your spreadsheet program.

TRY THIS

Open the same received message again, and select **File > Save As, No Headers…** Press **Save**. Find this saved file with Windows Explorer and open it. How is this different from the previously saved message?

2.6 Sending PackItForm messages

PackItForms are the Santa Clara County packet forms that all cities use for formal messaging with the County EOC. While you should check with your local city to determine if you use PackItForms locally, almost all packet communications between the cities and county use PackItForms.

PREPARATION

1. Run Outpost. Make sure Opdirect EMS is running by looking in the system tray to see 2 Outpost icons: **Opdirect EMS** and **Outpost Packet**.

2. If you do not see Opdirect, then from Outpost, select menu **Tools > Message Settings**, the **Adv** tab, and then check the box:
☑ Automatically start the Opdirect External Message Service

3. Press **OK**, then restart Outpost for this change to take effect.

ACTIVITY

1. From Outpost, Select the **Forms** menu. The "**XSC…**" entries are all PackItForms. Select the one titled "**XSC ICS-213 Message Form**" and press enter. It will take a few seconds for the PackItForm to open in the browser the first time.

2. Note that the Message ID field is automatically filled in from Outpost. Also, your call sign and name fields are filled in at the bottom of the form.

3. All required PackItForm fields are highlighted in **RED**. As you fill in a highlighted field, the highlight is removed. Also note that once all required fields are filled in, the top banner changes from a GRAY highlight to a GREEN highlight.

4. On the PackItForm Subject line, include the phrase "**Exercise 2.7 - <your_call>**".

5. When done, press **Submit to Outpost** at the top of the form. Within a few seconds, Outpost will open a message form with the text-only content of the PackItForms message. If it does not open in front of the Browser, check the windows tool bar for a flashing Outpost icon.

NOTE! Look at the ***Subject Line***. This is the standard SCCo RACES Subject line format that PackItForms creates. Can you identify where all the subject line parameters came from? See the SCC Application Note up on the website titled ***Standard Packet Message Subject Line.***

6. Address this message to yourself and kn6pe@w1xsc. Press **Send**, then **Send/Receive**, and then **Send/Receive** again to retrieve it.

7. On receiving your message back, open the message. What happened? Outpost automatically hands the message back to PackItForms where it is again displayed as entered.

TRY THIS

8. In the Outpost message listing, **left click** (once) to highlight the received message.
Go to ***Actions > Open enhanced message as text***. What happens? Close this form.

9. When done, optionally try creating, sending, and receiving some of the other PackItForm messages to yourself:
    a. XSC Check-In/Out Message
    b. XSC EOC-213RR Resource Request
    c. XSC OA Jurisdictional Status
    d. XSC OA Shelter Status
    e. XSC Allied Health Facility Status
    f. XSC RACES Mutual Aid Request

2.7 Storing Messages: Customizing Folders

Over the course of everyday use or even during an activation, you may end up handling a lot of messages. But how do you organize them to avoid packet clutter? Outpost provides 6 pre-defined folders and 5 custom folders for your use. You can name the custom folders anything you want (text size within reason), and then you can drag and drop messages into these folders.

ACTIVITY

1. From Outpost, Select **Tools > General Settings**. On the first tab, note the section titled "**Custom Folder Labels**". Let's create a couple of new labels:
    a. Change Folder 1 to **SCC Notices**
    b. Change Folder 2 to **Wkly Check-in Reports**
    c. Change Folder 3 to **Printed Msgs**
    d. Change Folder 4 to **Exercise Messages**
    e. Folder 5: no change
2. When done, Press **OK**. Note how the Folder List names have changed.
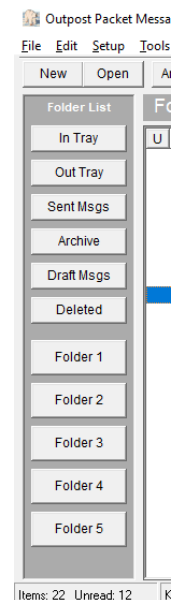
3. With the folder labels created, it's time to move some messages around. More than likely, you downloaded a bunch of SCC Notices when you did your first Send/Receive. These are SCCo messages that all Packet Operators need to have available.

4. Let's move the SCCo Messages to the SCCo Notices folder.
    a. With the mouse, *Left single click* on the first SCCo message. It should be highlighted.
    b. Press and hold down the *Shift Key* and *Left single click* on the last SCCo message. This should highlight it and everything in between.
    c. Let go of the keys.
    d. *Left mouse click* and **HOLD** on any of the highlighted messages. While still holding the mouse button down, drag the messages over the **SCC Notices** folder button, and release. The messages will be moved to that folder.
    e. Click on the SCC Notices folder to confirm your messages are there.

5. Check with your organization for any procedures or policies for handling messages and what to do with them once they are dispositioned.

3 Customizing Message Handling

3.1 Setting up a Default destination

Outpost lets you set up a default destination that will always be used whenever you create a new message. This can be useful if you usually send all messages to the same destination.

The benefit is that it reduces the risk of a typo when entering the same address over and over again. And, for the one-off message going to someone or somewhere else, this address can be overwritten when actually creating the message.

ACTIVITY

1. In Outpost, go to **Tools** > **Message Settings**, **New Msgs Tab**. Check the "**Default Destination**" box at the bottom and enter in the destination you always use. For this example, set it to **XSCEOC@W1XSC** or your city's EOC. Press **OK**.

2. Create a new message. Verify the default destination is used.

3. Create another message. This time, once the message opens, change the destination to something else.

4. When done with this exercise, uncheck this option if you so choose.

5. Close the message when done.
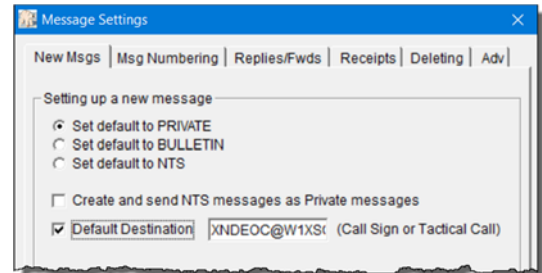
3.2   Automatic Message Printing

The nice thing about packet messages is that the incoming message is already typed up! Now, all you need to do is get it transferred to paper. If you have a printer configured to your PC, then Outpost supports an automatic print function that lets you print messages. You can…

- Print Sent or Received messages, 1-9 copies. Ideal for message copying, filing, and distribution.
- For Plain Text messages, include Print message headers (recommended)
- For PackItForms, add footers (not yet implemented for plain text messages)
- Print (or skip) delivery and read receipts. While this depends on your local policies for message tracking, checking this box will consume a lot of paper!

ACTIVITY - Plain Text Messages

1. From Outpost, go to the menu **Tools** > **Send/Receive Settings, Printing Tab**. Note the options available for printing messages.

2. Check **AutoPrint**

3. Try one or two of the options. Then create a round-trip message and send it to yourself.

4. Confirm that the messages print as expected.
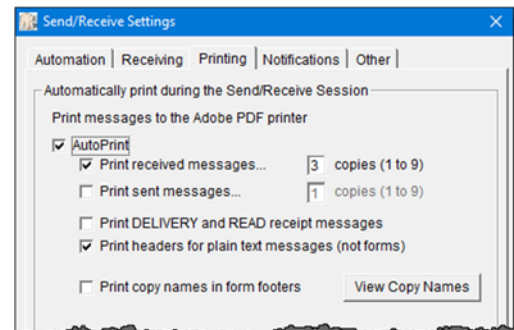
**ACTIVITY – PackItForm Messages**

PackItForm auto-printing works the same as plain text message printing with ONE important difference:

Copy Names refers to the footer text that is placed on the bottom of the PackItForm. These are user-defined.

1. From Outpost, go to the menu **Tools** > **Send/Receive Settings, Printing Tab**.

2. Check **Print copy names to print footers**.

3. Press the **View Copy Names** Button. This takes you directly to the…

4. **General Settings** > **Printing** tab
   a. Enter the Copy Names as you want them to appear on the PackItForm footer; one per line.
   b. The order in which you enter them is the order they will be printed.

5. If you want to use Copy Names for manual printing, make sure that box is checked.
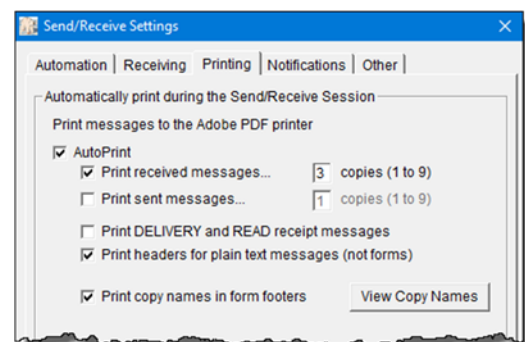
NOTE! The **Turn on PDF Spooler** option should always be checked.
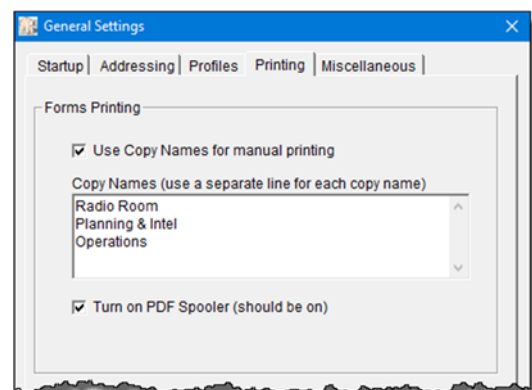
6. Try one or two of the options. Then create a round-trip message and send it to yourself.

7. To manually print a PackItForm, you can either…
    a. Double-click on the message to open it in the browser and print it from there. However, Copy Names are not included. Or,
    b. Highlight the PackItForm message in the Outpost listing, and press Print for one copy. Or,
    c. For multiple copies, from Outpost **File > Print**, select your printer, # of copies, and then Print!

WHAT JUST HAPPENED?
1. When a PackItForm print request (automatic or manual) is made, the selected message to print, the number of copies, and list of Copy Names are passed to the PackItForms server.
2. The PackItForms server generates a .pdf file per the number of copies and Copy names supplied, and writes them to the Outpost pdf spool directory.
3. Outpost checks this spool directory every couple of seconds and, if it finds a .pdf file, then prints the .pdf files to the default printer.
4. To deal with situations where the number of requested copies (**Tools > Send/Receive Settings**, **Printing** Tab) does not match the number of Copy names (**Tools > General Settings**, **Printing** Tab), this is what happens:

If # of copies is set to:	AND Copy Names is:	then what is printed is:
1	Radio Room Planning and Intel Operations	Radio Room
3	Radio Room Planning and Intel Operations	Radio Room Planning and Intel Operations
4	Radio Room Planning and Intel Operations	Radio Room Planning and Intel Operations <4th message with blank copy name>

A Final Word on Printers
1. To try multi-copy printing without actual paper-printing, try any of these print drivers that may be installed on your PC…
    • CutePDF Writer
    • Microsoft XPS Document
    • Microsoft Print to PDF **
    • OneNote
    • Snagit 12 print driver

**NOTE: If you use a PDF pseudo-printer, then enter the filename immediately when prompted. MS Windows O/S will block the calling program while it waits for the user to select a PDF filename. If this occurs during a Send/Receive Session (auto-printing), then the BBS session will time out.

3.3   More Msg Settings: Message Numbering

It is good operating practice (if not required by your organization) that all messages be uniquely identified so they can be subsequently referenced. Outpost supports this by assigning a unique message identifier not only to outgoing messages, but also to incoming messages. Assigning an Incoming Message ID is usually an organization-specific requirement. This is what we do in SCCo RACES.

ACTIVITY

1. From Outpost, select **Setup** > **Station ID**. Make sure there is a 3-character Message ID Prefix is set for your call sign or Tactical Call.

2. From Outpost, select **Tools** > **Message Settings, Msg Numbering** tab.

3. For **Outbound Messages**, there are several options you can select. Try selecting each one and observe how the next message ID will look next time you start a new message.

4. For **Inbound Messages**, Outpost will use the same Message ID format and make the assignment for each message received (excludes DELIVERED or READ Receipt messages).

5. For starters, set this form as indicated on the right (SCCo RACES Standard Message ID format).

6. Create a new message addressed to yourself. Note that the message ID is placed on the subject line. You should add more text to ensure you have a reasonably descriptive Subject. Complete the message and send it.

7. Press Send/Receive a 2nd time to retrieve your message. Note the **Local ID** column on the main Outpost listing. Open the message and observe that the **Local ID** is also on the message header.

8. Try some of the different Message ID options to see how they look on the message form.

9. When done, change this setup back to the SCCo RACES standard configuration.

3.4   Message Receipts

How do you know if your message was delivered? Message receipts will help. Outpost supports two types of receipts:

- Delivery Receipts. Indicates that the message was downloaded by the recipient,
- Read Receipts. Indicates that the message was opened by the recipient.
     NOTE: This does not mean that the message was understood by the recipient.

Receipts can be turned ON as a request from the sending station, or automatically generated by the receiving station regardless of what the sending station wants. Receipt messages do not generate another receipt message. For Delivery Receipts, as soon as the receiving station Outpost downloads the message and during the same Send/Receive session, that station will create and send back a delivery receipt. A Read Receipt is created after the message is opened and will be sent the next time the recipient connects to the BBS.

Lastly, Outpost Receipts only work with Outpost.

ACTIVITY

1. From Outpost, go to the menu **Tools** > **Message Settings, Receipts Tab**.
   a. The **Tracking Message** section is how you will request a receipt from the receiving station.
   b. The **Auto-Receipts** section sets up Outpost to generate a receipt regardless of the Sending station's request.
   ***NOTE:*** This is the default SCCo RACES setting.
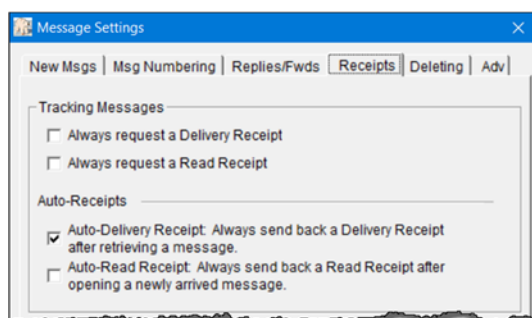
2. Receipt settings can also be made *on the fly* from the Message form. From the Message Form, look at the options under the **Actions** menu.

NOTE: While you can test this by sending Round-Trip messages to yourself, pay close attention to what is going on. This is a good test to perform with a partner.

3. Try some different options: On the **Message Settings > Receipts** Tab,
   a. Check **Always request a Delivery Receipt**, **OK**. Create a round-trip message. After 2 Send/ Receives, confirm you got a delivery receipt back from yourself.
   b. Uncheck that box. Check **Auto-Delivery Receipts**. Repeat the rest of the above step.
   c. Uncheck all boxes. Start a message and select **Request a Delivery Receipt**. Send the message.
   d. When done, return the **Receipts** Tab to what was set as shown in the image above.
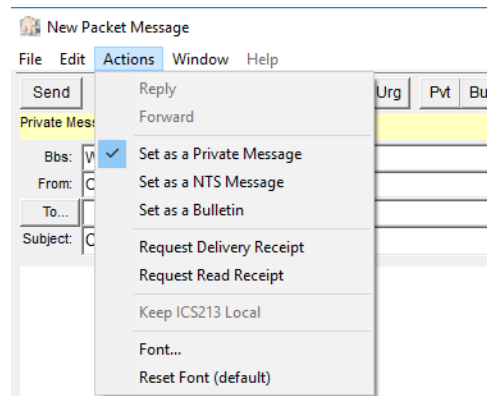
3.5   Setting up Tactical Calls

Amateur Radio voice nets have used tactical call signs for years. However, most BBSs do not explicitly support Tactical calls, leaving the implementation up to the client software. While Outpost allows you to define and send a Tactical Call, it is up to the BBS to accept the connect "call sign" as something other than a legitimate call sign format. The SCCo RACES JNOS BBS accepts tactical calls.

ACTIVITY

1. From Outpost, go to the menu *Setup > Station ID*.

2. Check ☑ **Use Tactical Call…** This enables all Tactical Call controls.

3. Check the **Tactical Call Sign** drop-down to see if your tactical call was already set up. Select it if present, then press **OK**.

4. If it is not listed, press **New** to the right of the **Tactical Call Sign** field, and then enter:

   a. *Tactical Call Sign:* the assigned Tactical Call
   b. *Additional ID Text:* a text string, usually a description of your location
   c. *Message ID Prefix:* This is usually some derivation of the tactical call
      NOTE: For this exercise, use your initials or last 3 characters of your call sign.
   d. Press **OK** when done.

5. Note the status bar at the bottom of the Outpost main form. Do you see your Tactical Call listed? You should always check this area of the form to confirm you know what call sign is being used when transmitting.

6. Create a new message.

   a. Note that the **From**: field is set to the Tactical Call.
   b. Address it to your FCC call sign and kn6pe@w1xsc
   c. On the subject line, include the phrase "**_R_Exercise 3.6 - <your_call>**".
   d. Finish the message and press Send, then Send/Receive.

7. No matter how many times you press Send/Receive after that, you will not retrieve the message since it was not addressed to you.

8. Go back to the *Setup > Station ID* and uncheck Tactical Call.

9. Note the status bar at the bottom of the Outpost main form. Is it only referencing your call sign?

10. Retrieve the message.

4   Other Settings
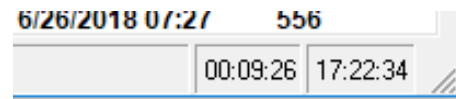
4.1   Automatic BBS Polling

Outpost allows you to check the BBS automatically at intervals defined by you.

ACTIVITY

1. From Outpost, go to the menu **Tools > Send/Receive Settings, Automation** Tab.

2. Set ⊙ **Manual**. Press **OK**.

3. Note the lower right portion of the Outpost status bar. The right-most time is the current time. The time to the left is the automation count-down timer. In this case, the Send/Receive timer is not enabled.

4. Go back to the menu **Tools > Send/Receive Settings, Automation** Tab.

5. Set ⊙ **Schedule a send/receive session every** [**10**] minutes … **OK**
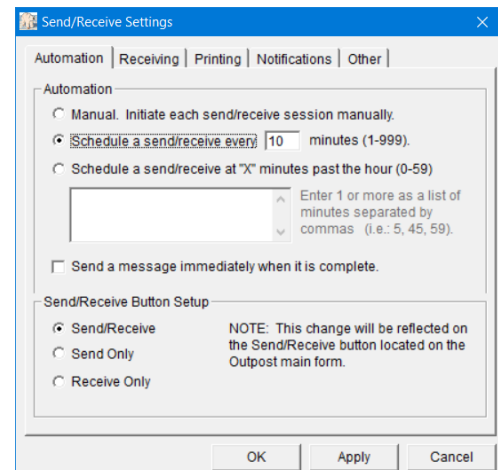
6. Note the time section on the Outpost status bar and the automation count-down timer is now decreasing. This is the time remaining until Outpost automatically schedules another Send/Receive session.

7. What happens when the countdown timer reaches 00:00:00?

8. The 3rd automation option lets you schedule a Send/Receive session at specific minutes past the hour. For instance, a setting of 5,10,30,45 will trigger a session at 5 min past, 10 min past, 30 min past, and 45 min past the hour. This is ideal when managing "time slots" for a lot of stations that need to access a limited BBS resource.

NOTE! The SCCo RACES standard for **Automation** is **Manual**. This is to avoid excessive BBS polling that will result in more frequency congestion.

9. While we are on this form, look at the lower section of the **Automation** Form. You can define how Outpost's **Send/Receive** button works.

TRY THIS

10. Create a message and press Send/Receive once.
11. On the *Tools > Send/Receive Settings, Automation* tab, Select **Send Only**, OK. Note the Send/Receive button label changes. What happens when you press it?
12. Select **Receive Only**, OK. Note the Send/Receive button label changes. What happens when you press it?
13. When done, set this option back to **Send/Receive**.
14. FYI: These actions are also on the **Actions** Menu for one-time execution.

4.2 Retrieving Messages

INTRODUCTION

Different BBSs can store different types of messages for their users. Messages addressed to a particular user are *Private* Messages. Messages intended for many users are called **Bulletins**. Some BBSs also support National Traffic System (**NTS**) messages. This is a basic introduction to this topic and will focus on the SCCo RACES settings only.

ACTIVITY

1. From Outpost, go to the menu ***Setup > BBS, Retrieving*** tab.

2. Note what is checked:
   ☑ **Retrieve Private Messages**
   ☑ **Retrieve Bulletins**, and
     ⊙**Custom Retrieval**
   ☑ **Skip NTS Messages that I send**

3. By now, you should have downloaded all the SCCo RACES bulletins. JNOS keeps track of what's been downloaded and to whom. So, you will not see them come down again. Unless…
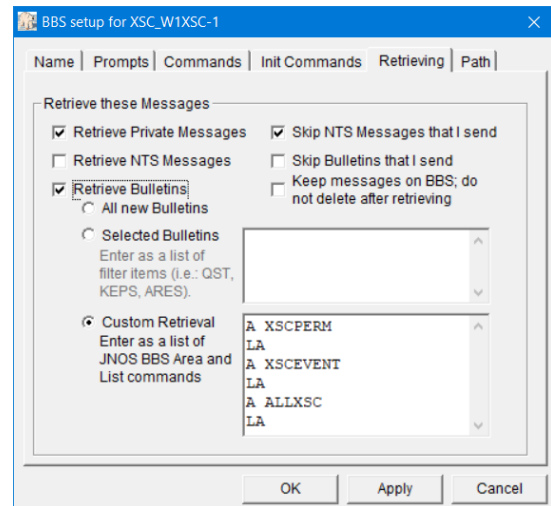
TRY THIS

> To force all bulletins to be downloaded again, go to
> ***Actions > Force one-time bulletin retrieve***. Then press **Send/Receive.** Give this a try.

4.3   ICS309 Reporting

INTRODUCTION

The job is not done until the paperwork is complete. Fortunately for us, there is an on-line ***ICS 309 Communications Log*** program that automatically generates this log for you. The ICS 309 Comm Log Builder is launched from Outpost with specific parameters that makes filling in the report easier.

ACTIVITY

1. From Outpost, go to the menu ***Tools > Report Settings,*** then the **ICS 309** Tab. Note some of the field areas:
    a. **Automation**. If desired, you can schedule the report to run every so often.
    b. **Other ICS 309 Fields**. You can enter the report fields here, and they will automatically be sent to the report. Alternatively, you can enter them directly into the report once it is started
    c. The Radio Operator Name and Station ID are automatically filled in from the Station ID form. Press **OK** when done.

2. Now, let's run the report. Select **Forms > ICS 309 Communications Log**. The report builder form opens. Note that the header fields have been filled in. You can also set or change them if needed.

3. Press the **Build Data Set** button. This will load the preview field at the bottom. You can press this anytime to see what your report will look like as you change options.

4. Report options are set from tabs in the middle of the form.
    a. ***Period***. Reporting Period for the report. Select each option and note how the Operational Period field values change. Usually, either pick **Today** or a custom **Range** for your operational period.
    b. ***Content***. Selects what types of messages will be included in the report; usually leave them all checked. You can also add subject line words that will **EXCLUDE** message containing those words. For instance, if you DO NOT want Delivery receipts in your report, put the word "DELIVERED" in the exclusion area. Separate words by spaces.
    c. ***Sort***. Sort by some different options. Also, for other than the DayTime option, check the Line Break option to add a space when a Sort option value changes.
    d. ***Layout***. These fields are usually included in the report but can be unchecked if desired.

e. ***Output***. You can send your report to a printer, an ascii file, a .csv file, or any combination of the three. This occurs when you finally press the **Print** button at the top of the form.

f. **e-Signature.** When "**Write report to printer**" is selected on the Output tab, an electronic signature is added to the printed output. This is not available for text or .csv messages.

5. Try different options and press the **Build Data Set** button after each change to see how it looks.

6. Finally, press **Build Data Set**, then the **Print** button. This will send your report to the printer or ask for file name fields for your .txt or .csv files.

4.4   Setting up address book entries

INTRODUCTION

Outpost supports an address book that essentially lets you create an alias, or friendly name, for one or more addresses.

ACTIVITY

1. From Outpost, go to the menu **Setup > Address Book**.
2. Click **New**
3. Enter the user's name. Use "_" for spaces. Example: for Bob Smith, enter BOB_SMITH
4. Enter the packet address.
5. When done, press **OK**
6. From Outpost press **New** to create a new message. Instead of filling in the To: Field, click the "**TO**" button next to the To: field. Double-click on the address book entry you want to add. Press **OK**.
7. You can also double-click on the address in the to-field. What happens?

You can also define a distribution list, essentially a list of addresses.

1. From Outpost, go to the menu **Setup > Address Book**.
2. Click **New**.
3. Enter the distribution list name. For this example, use "ARES_STAFF"
4. Enter a couple of packet addresses (call signs or email addresses for a couple of your AECs). When done, press **OK**.
5. Create and send a very SHORT message to this distribution address.

NOTE: Distribution lists are not limited to call signs or tactical calls. If your BBS supports it (and JNOS does), you can also add email addresses.

4.5   Message Addressing

INTRODUCTION

As you may have figured out, SCCo RACES has a large BBS operating environment that provides access for a lot of users. This is accomplished by:

1. **Four BBSs** that are all networked together by both RF and the SCC RACES intranet.
2. **City Assignments** to a primary and secondary (backup) BBS; helps balance the message load.
3. **Various address** schemes for exchanging messages within our BBS world as well as the internet.

There will be times when you will need to send messages to users on a different BBS or even outside our BBS world, and getting the address right is critical. Let's look at what you need to know.

NEED TO KNOW

1. ***What BBSs are out there, and where?***
   There are 4 BBS' supporting the county. The best place to find information on them is here:
   a. www.scc-ares-races.org. Under Data Networking > Packet BBS, > Packet Frequencies and BBS Listings. Look at the first 2 sections and get familiar with its content.

   Note the 2 meter, 220, and 440 frequencies that you can use to access each one of them. Different BBSs have different frequencies.

   Note the BBS AX.25 names: W1XSC-1, W2XSC-1, W3XSC-1, W4XSC-1. This is what is set in Outpost to connect to the BBS. This is DIFFERENT from the ***destination address***, see below.

2. ***Cities and BBSs – Who's on First?***
   Before you send a message, it is best to confirm what BBS a recipient uses. There are 2 places to find this information:
   a. www.scc-ares-races.org. Under Data Networking > Packet BBS, > Packet Frequencies and BBS Listings (same as above). Scroll down until you find the ***BBS Assignments*** section. Note the cities and their assigned primary and secondary BBS's.
   b. Downloaded Notices.   By now, you have downloaded all the standard SCCo RACES bulletins. Look for the bulletin titled "***SCCo Packet Tactical Calls vYYMMDD***". You will see similar information here.

3. ***Addressing – Getting from here to there***
   Lastly, getting the address right is critical to get your message delivered. Here are some examples (FYI… The call W6XRL4 is a fake call owned by Herman Munster!):

Your situation	You connect to:	You address options are:
You are on your primary BBS (**W1XSC**) and sending to a user who is also on **W1XSC**.	W1XSC-1	To: W6XRL4 @ w1xsc To: W6XRL4 @ w1xsc.ampr.org
You are on your primary BBS (**W1XSC**) and sending to a user on **W4XSC**.	W1XSC-1	To: W6XRL4 @ w4xsc To: W6XRL4 @ w4xsc.ampr.org
Your primary BBS is down so you shift to your secondary BBS (**W4XSC**) and are sending to a user on **W3XSC**.	W4XSC-1	To: W6XRL4 @ w3xsc To: W6XRL4 @ w3xsc.ampr.org
You are on your home email account and sending to a user on **W3XSC**.	<internet>	To: W6XRL4 @ w3xsc.ampr.org

ACTIVITY

> **NOTE!** You will receive a ***delivery receipt*** for any message sent to the 4 tactical calls listed below on their respective city's primary and secondary BBS within 15 minutes of the message being sent. This is a good way to confirm that you got the address right!

1. Fill in the following:
    a. Your City's primary BBS (Connect name): _____ Frequency: _____
    b. Your City's secondary BBS (Connect name): _____ Frequency: _____

2. Create all practice messages with the standard SCCo RACES Subject line format
   <msgID>**_R_Exercise 4.5.##, <your_call>, <your_name>, <your_city>**
   where Exercise <##> is the number below, such as 4a, 5c, etc.
    a. Message content is of your choice.

3. While there are 12 messages you could create below, ***send at least one*** from each group (4x, 5x, 6x, 7x). I also strongly encourage you to try them all to get a sense of the City/BBS lookup and addressing; at some point, you may need to do this for real in the field.

4. For these messages, set Outpost and your radio to your **Primary BBS**, and then…

Exercise #, situation	Record the destination address
a. Look up San Jose's <u>Primary</u> BBS; send a packet message to Tac Call `SJCTST`	Destination address:
b. Look up Gilroy's Primary BBS; send a packet message to Tac Call `GILTST`	Destination address:
c. Look up Los Altos' Primary BBS; send a packet message to Tac Call `LOSTST`	Destination address:
d. Look up Milpitas' Primary BBS; send a packet message to Tac Call `MLPTST`	Destination address:

5. For these messages, set Outpost and your radio to your **Primary BBS**, and then…

a. Look up San Jose's <u>Secondary</u> BBS; send a packet message to Tac Call `SJCTST`	Destination address:
b. Look up Gilroy's Secondary BBS; send a packet message to Tac Call `GILTST`	Destination address:
c. Look up Los Altos' Secondary BBS; send a packet message to Tac Call `LOSTST`	Destination address:
d. Look up Milpitas' Secondary BBS; send a packet message to Tac Call `MLPTST`	Destination address:

6. For these messages, set Outpost and your radio to your **Secondary BBS**, and then…

a. Look up San Jose's <u>Primary</u> BBS; send a packet message to Tac Call `SJCTST`	Destination address:
b. Look up Gilroy's Primary BBS; send a packet message to Tac Call `GILTST`	Destination address:

7. For these messages, connect to your home email account, and then

a. Look up Los Altos' Secondary BBS; send an email to Tac Call `LOSTST`	Destination address:
b. Look up Milpitas' Secondary BBS; send an email message to Tac Call `MLPTST`	Destination address:

5   Localizing Packet

5.1   Polling for local bulletins

INTRODUCTION

Outpost comes standard with settings that let you retrieve bulletins addressed to all county packet operators (SCCo RACES refers to these bulletins as *Notices)*. However, there is also a way to create a local jurisdiction packet bulletin area.

Look at what messages can be retrieved:

1. From Outpost, select ***Setup > BBS***, then the **Retrieving** Tab.

2. This shows that for the W1XSC BBS, you will retrieve **Private** messages (addressed to you), and **Bulletins** defined by *Custom Retrieval* parameters.

3. Note the custom set of commands. The first 4 commands essentially tell Outpost to:
    a. Switch to the XSCPERM area
    b. List All (LA)
    c. If there is anything new that you do not have, Outpost will download them.
    d. Switch to the XSCEVENT area
    e. List All (LA)
    f. And, download new ones.

4. The last 2 commands get you ready for setting up to receive city notices, described below.

5. The XSCPERM notices describe standard county procedures. These notices do not expire.

6. The XSCEVENT notices are for drills, public service events, incidents, or other activations. Notices posted here automatically expire after 3 days.

7. XSCPERM and XSCEVENT notices are posted only by SCCo RACES Staff.

However, all cities are encouraged to create their own Notice area. Here is what the setup looks like.

ACTIVITY

Set up to receive City Notices

1. Each city should use their city's standard three char prefix (ex: "XND", "SJC", "MTV", etc.).

2. Everyone in the city adds or updates these 2 lines to **Setup > BBS > Retrieving.**

3. So, for the City of Xanadu, add:
    - **A ALLXSC**. Tells Outpost to switch to the County's general XSC message area
    - **L> XND**. Tells Outpost to list messages only addressed to XND.

        NOTE! Put your city's 3-character prefix on this line instead of XND, for example:
        - L> MTV
        - L> LOS
        - L> SJC
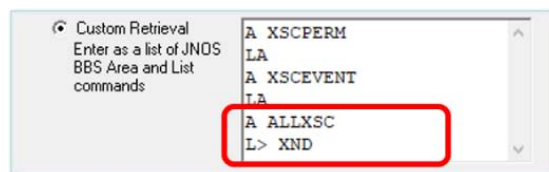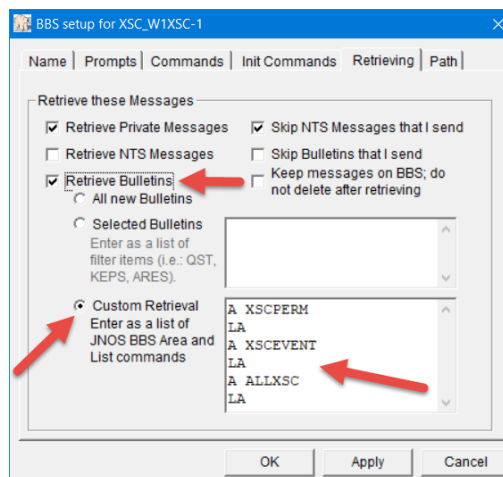
NOTE: Only 1 city 3-character prefix should be entered. The BBS does not support multiple city retrieves.
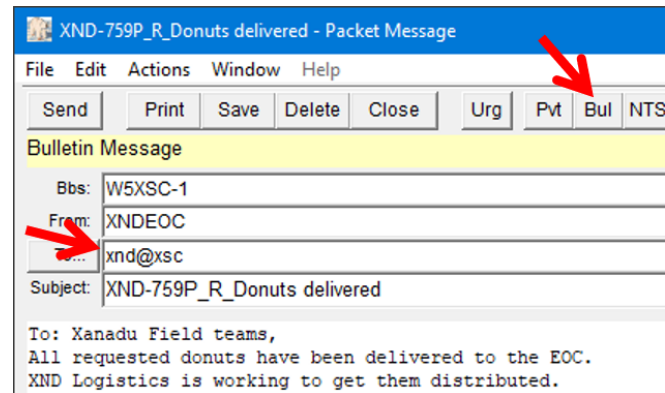
4. Press **OK**. This additional area will now be checked each time Outpost connects to the BBS.

5. What are the 2 lines that are entered for your City? _____

_____

How to send a Notice to ONLY your city

1. In Outpost, press **New** to start a new message.
2. Click on the "**Bul**" button (Bulletin).

    NOTE the Message Type changed to Bulletin Message on the message banner.

3. Addressing it to **@xsc** distributes to all XSC (Santa Clara County) BBSs. But only those who have the matching 2-line BBS retrieve sequence will be able to retrieve it.
4. Enter your message.
5. When done, press **Send**. Then **Send/Receive**.

ACTIVITY

At this point, all you need to do is test the setup. Do the following:

1. Create a message in Outpost.
2. Set this message as a Bulletin.
3. Address the message to your city bulletin area.
        How did you address this for your City? _____

4. On the subject line, include the phrase "**_R_Exercise 5.1 - <your_call>**".
5. Once you complete the message, Press **Send**.
6. Press **Send/Receive**, then press **Send/Receive** again to retrieve the bulletin.
7. Verify your bulletin comes back down.
8. If there are other members from your city in the class, you might also download their notices as well.

NOTE:

How do you get rid of these messages? You can't. BUT… the BBS will expire and automatically delete the message in 8 days.