

Outpost Packet Message Manager

Version 2.0.4

Overview
Mountain View Amateur
Radio Emergency Service

25 March 2006



Why are we here?

... and, why are we talking about packet?

Purpose

- City... provides services; promotes the common good
- EMS...
 - Prepares for disasters
 - responds to minimize loss of life and property
 - speeds the recovery

Needs

- EMS...
 - needs information... what's going on out there?
 - work with recovery partners and service providers

Capabilities

- What we bring...
 - *Volunteerism!*... An interest to help out
 - Communications
 - Structure



Why are we here?

... and, why are we talking about packet?

Capabilities... amateur radio communications

- Frequency agility
- Different modes... voice, data, video
- Bandwidth
- Independence from commercial services

	Simple Messages	Complex Messages
Mode	Voice	Packet
Messages	Short messages	Lists, instructions, details
Delivery	Immediate	Store & forward; mail drop
Equipment	Radio	Radio + TNC+ PC + SW + BBS
Complexity	Short learning curve	Many commands



Why are we here?

... and, why are we talking about packet?

Mapping Capabilities to Needs

- City EOC... PSAs, message handling with field sites, etc.
- County Emergency Medical Services System, Public Health Department Emergency Operations Center (DOC)... Casualty Collection Points, Ambulance Allocation, Hospitals, Surgicare Clinics
- Santa Clara County EOC... EOC-to-EOC message handling, RIMS backup

CAPABILITIES help fulfill **NEEDS**, that support **PURPOSE**

Is Packet a capability that could address other needs?



Overview

What is Outpost?

- A Windows-based packet messaging client
- Supports ARES, RACES, and other amateur radio emergency response teams and their need to pass digital traffic
- Helps automate the packet message handling environment
- Manages all message handling between you and your BBS
- Lets you read, delete, create, reply to, or forward messages back to the BBS



Overview

Why use Outpost?

- Leverages the existing packet hardware, network, and BBS infrastructure
 - Compatible with many existing BBSs and TNC PBBSs
 - Uses your existing TNC and packet radio equipment
 - Only a packet client (end-user) change is required
- Hides the complexity of the packet operating environment
 - Similar look and feel to contemporary email programs
 - Shorter learning curve for packet operations
 - Allows users to... *“focus on the message, not the medium”*
- Implements most local emergency management policies for digital communications
- Still under active development based on user requests and on-going alignment with the Outpost mission.



Overview

General Outpost Features

- Message Management
 - Multiple message folders
 - Supports the three primary message types: Private, NTS, and Bulletins
 - Text Formatting in a free-form message window
 - NTS Message Maker with automated ARL message support
 - On-line report builder using report templates
 - Supports Urgent message, Delivery and Read Receipts
- Send/Receive Session Management
 - Supports Serial, AGWPE, and Telnet interfacing to a BBS
 - Automatically controls the sequence for initializing the selected interface, connecting to, and sending messages to and retrieving messages from the BBS
- Configurations and Setups
 - BBS, TNC, and Interfaces – manages a list of BBSs & Interfaces
 - Message Retrieval – choose the message types to be retrieved
 - Send/Receive automation – 3 ways for automatically initiating BBS sessions



Overview

Outpost History

- Commenced Development... November 2002
- v0.95; First Beta Release... May 2003
- v1.0; First Release... October 2003
- v1.1; enhanced look and feel... March 2004
- v1.2; on-line reports, MSYS support... May 2004
- v1.3; collaborative messaging... December 2004
- v2.0; AGWPE and telnet support... June 2005
- v2.0.4; NTS extensions, other enhancements... February 2006



Topics

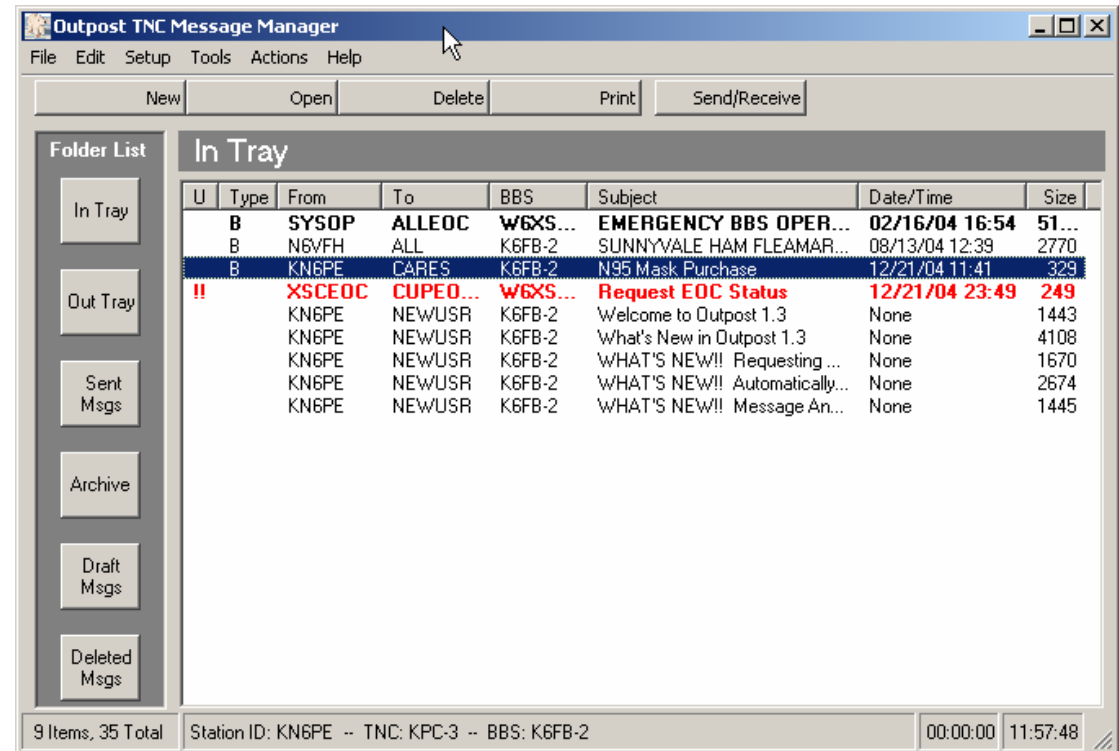
- **Features**
- **Setups**
- **Tools and Controls**
- **Creating Messages**
- **A Typical Session**
- **Limitations and Constraints**
- **Questions**



Features

Message management

- Familiar email-app look and feel
- Separate folders for message storage
- Clearer message identification (unread=**BOLD**, urgent=**Red**)
- Follows a formal message workflow
- Manage BBS and interface setups
- Additional settings to control how Outpost behaves



Features

Message viewing

- Supports viewing, printing, deleting or saving a message to a local file
- Reply and Forward message formatting

The screenshot displays the Outpost TNC Message Manager interface. The main window shows a list of messages in the 'In Tray' folder. A message titled 'N95 Mask Purchase' is selected, and a secondary window titled 'N95 Mask Purchase - Packet Message' is open, showing the details of the selected message.

Folder List: In Tray, Out Tray, Sent Msgs, Archive, Draft Msgs, Deleted Msgs

9 Items, 35 Total

U	Type	From	To	BBS	Subject	Date/Time	Size
B	SYNOPSIS	ALLEOC	W6XS...		EMERGENCY BBS OPER...	02/16/04 16:54	51...
B	NEWS	ALL	K6FB-2		SUNNYVALE HAM FLEAMAR...	08/13/04 12:39	2770
B	KN6PE	CARES	K6FB-2		N95 Mask Purchase	12/21/04 11:41	323
!!	XSCEDC	CUPED...	W6XS...		Request EOC Status	12/21/04 23:49	249
	KN6PE	NEWUSR	K6FB-2		Welcome to Outpost 1.3	None	1443

N95 Mask Purchase - Packet Message

File Edit Actions Help

Print Reply Forward Delete Close Expire

Bulletin Message

Bbs: K6FB-2 Sent: 12/21/04 11:41

From: KN6PE

To: CARES

Subject: N95 Mask Purchase

MSG#43 12/21/04 11:41 FROM KN6PE TO CARES
SUBJECT: N95 Mask Purchase
PATH: K6FB

All Packet-enabled CARES members,

Those CARES members interested in purchasing N95 masks as described by Marsha, please let me know. We will be doing a bulk purchase at a cost of \$1 per mask for CARES members.

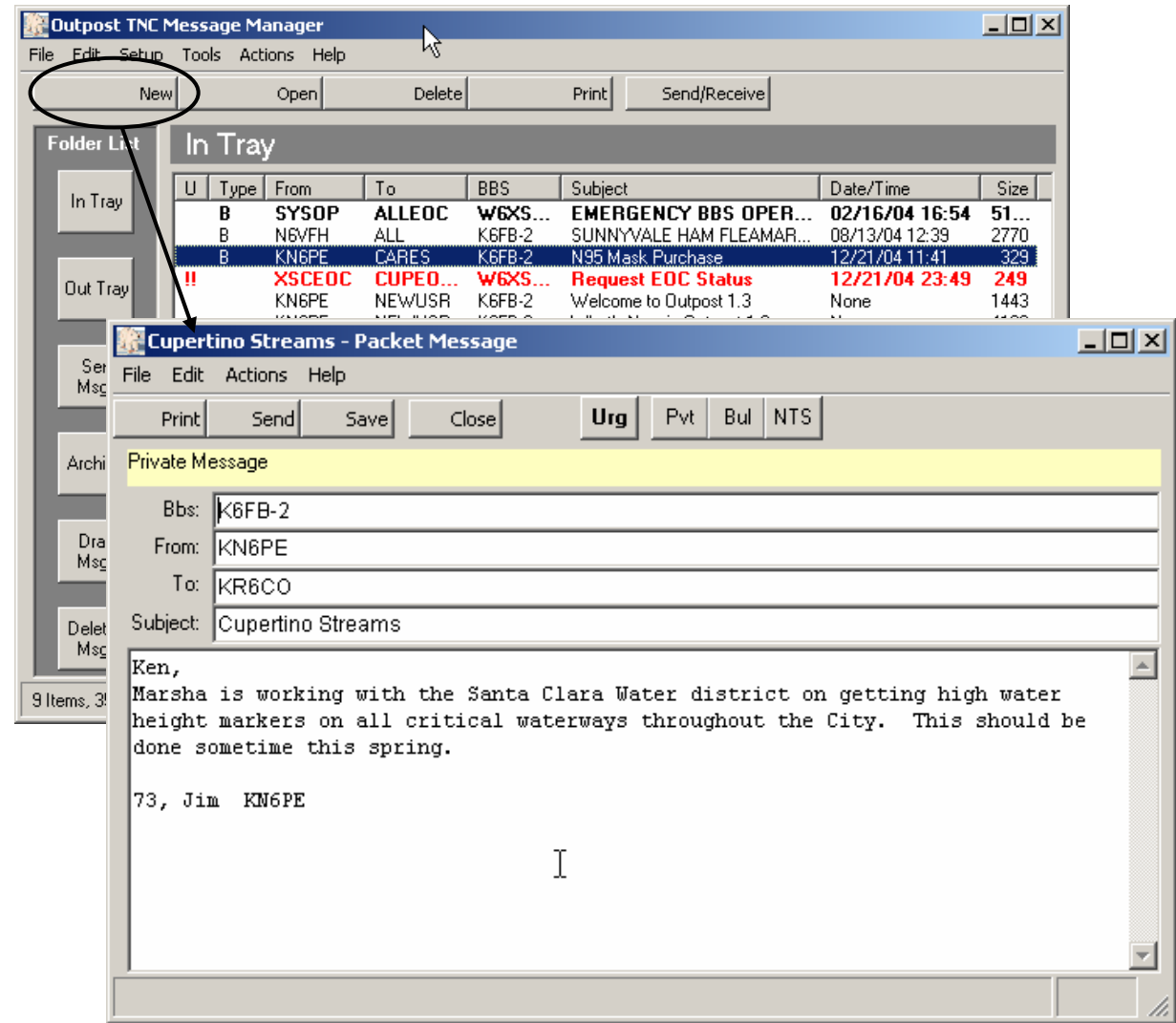
regards,
Jim KN6PE



Features

Message creation

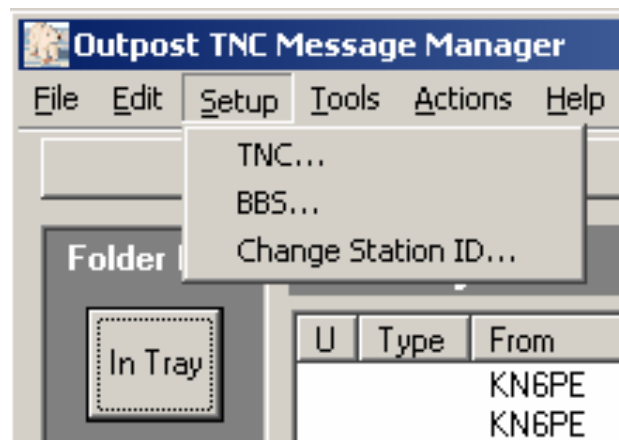
- Supports Private, Bulletin, and NTS message types
- Message formatting before sending
- Set messages to **Urgent**
- Request delivery or read receipts
- Different ways for originating messages
- NTS Message Maker



Setups

Application setups

- **TNCs:** create, update, or delete
 - Configure Serial Comm Ports that are associated with each TNC
- **BBSs:** create, update, or delete
- Change the Station Identifier (the call sign assigned to the TNC)



Setups

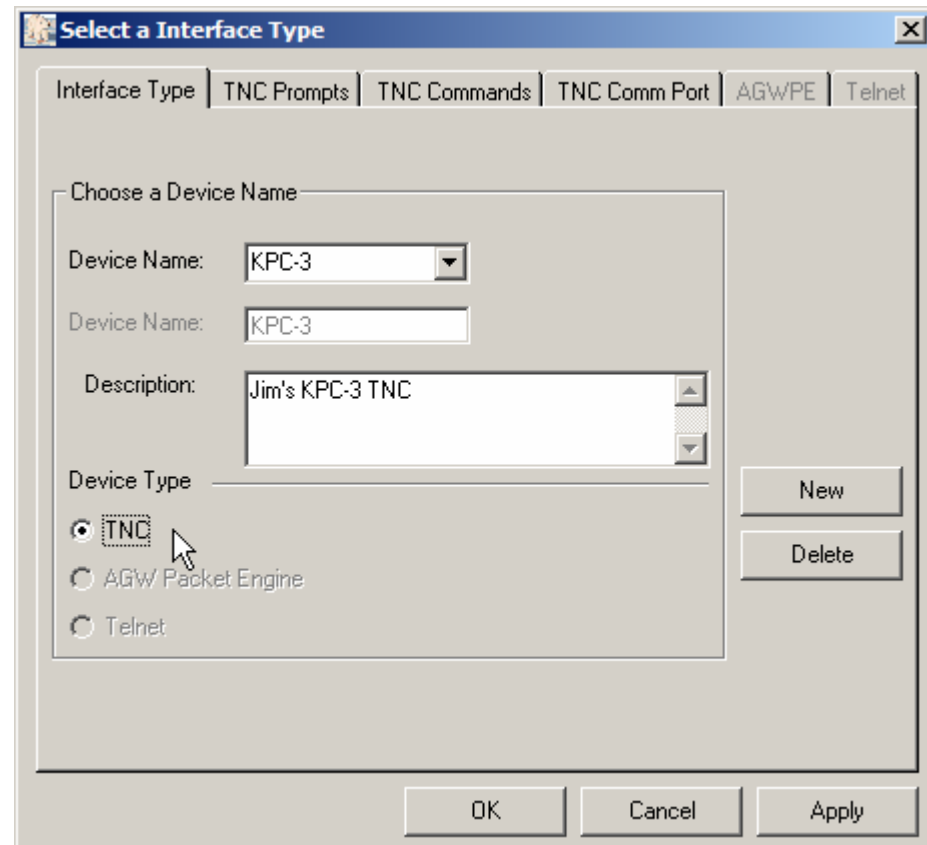
Application setups

- TNC Interface setup
 - TNC Prompts
 - TNC Commands
 - Comm Ports

- AGWPE
- Telnet

Notes...

- Create, update, or delete interfaces.



Setups - TNC

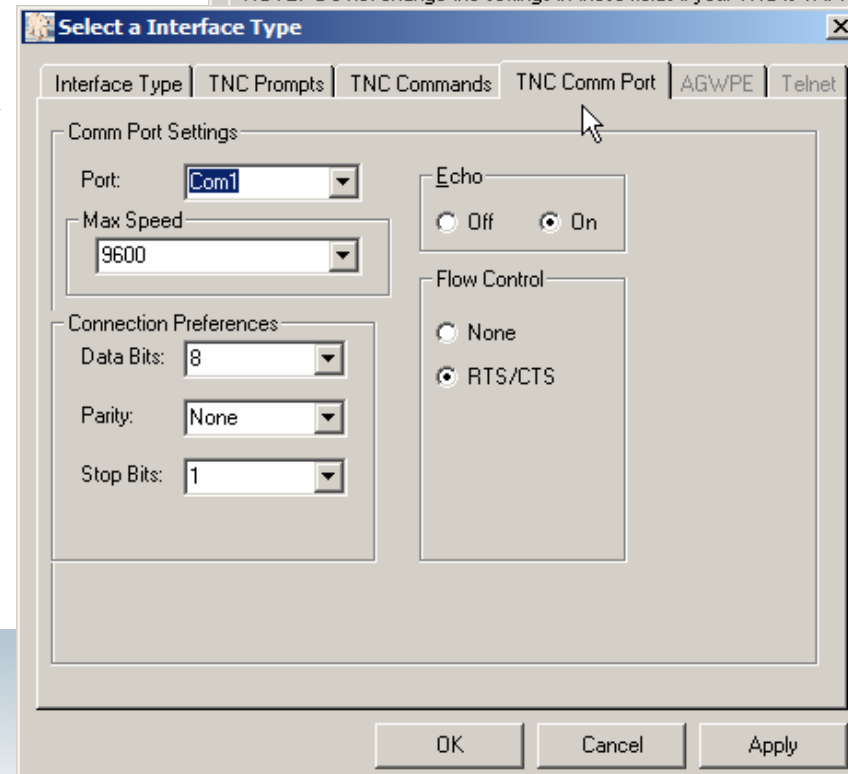
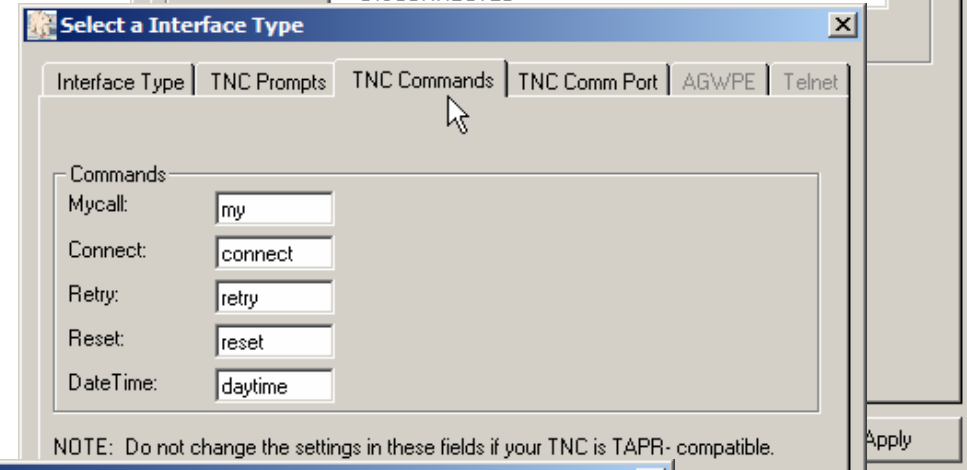
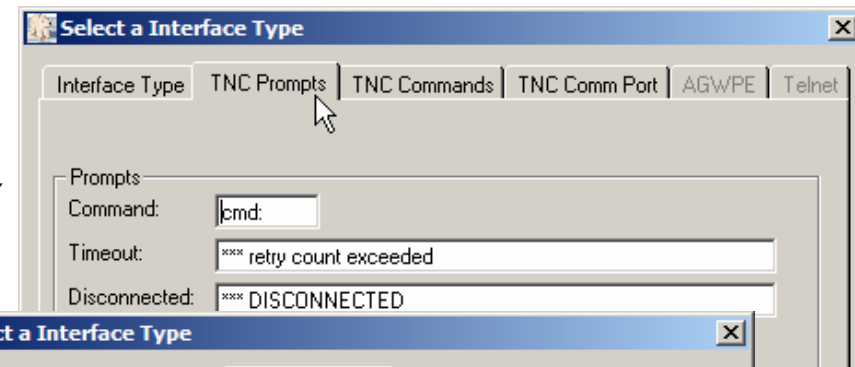
Application setups

- TNC Interface setup
 - TNC Prompts
 - TNC Commands
 - Comm Ports

- AGWPE
- Telnet

Notes...

- Outpost sends TNC commands to the TNC as part of the TNC initialization.
- Supports Hardware Flow Control.
- Confirmed operational with USB-to-Serial port adapters.



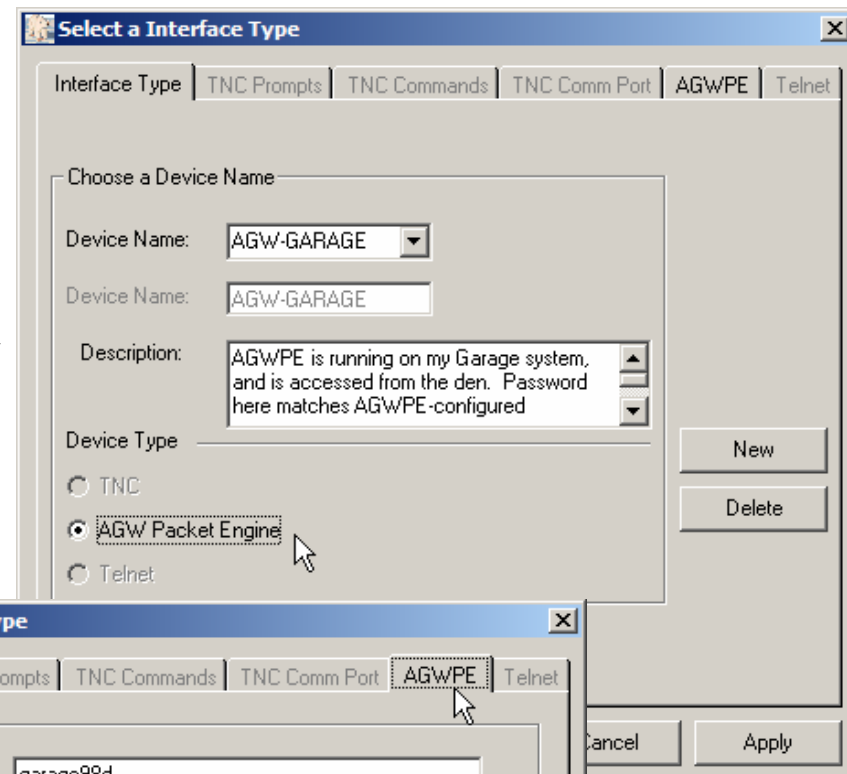
Setups - AGWPE

Application setups

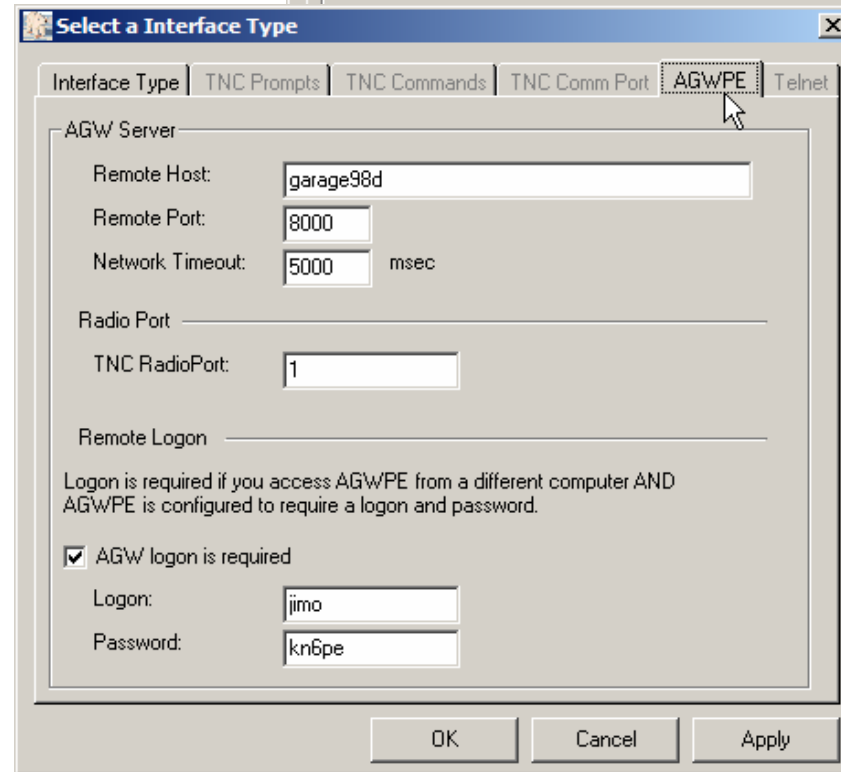
- TNC Interface setup
 - TNC Prompts
 - TNC Commands
 - Comm Ports
- AGWPE
- Telnet

Notes...

- Implements the AGWPE TCP/IP API specification.
- Supports AGWPE v2000.20 or higher.



The screenshot shows the 'Select a Interface Type' dialog box with the 'AGWPE' tab selected. The 'Interface Type' tab is active, and the 'Device Name' is set to 'AGW-GARAGE'. The 'Device Type' is 'AGW Packet Engine'. The 'Description' field contains the text: 'AGWPE is running on my Garage system, and is accessed from the den. Password here matches AGWPE-configured'. The 'Device Type' section has radio buttons for 'TNC', 'AGW Packet Engine' (selected), and 'Telnet'. There are 'New' and 'Delete' buttons on the right side of the dialog.



The screenshot shows the 'Select a Interface Type' dialog box with the 'AGWPE' tab selected. The 'AGW Server' section is visible. The 'Remote Host' field contains 'garage98d', 'Remote Port' is '8000', and 'Network Timeout' is '5000 msec'. The 'Radio Port' section has 'TNC RadioPort' set to '1'. The 'Remote Logon' section has a checked checkbox for 'AGW logon is required', with 'Logon' set to 'jimo' and 'Password' set to 'kn6pe'. There are 'OK', 'Cancel', and 'Apply' buttons at the bottom of the dialog.



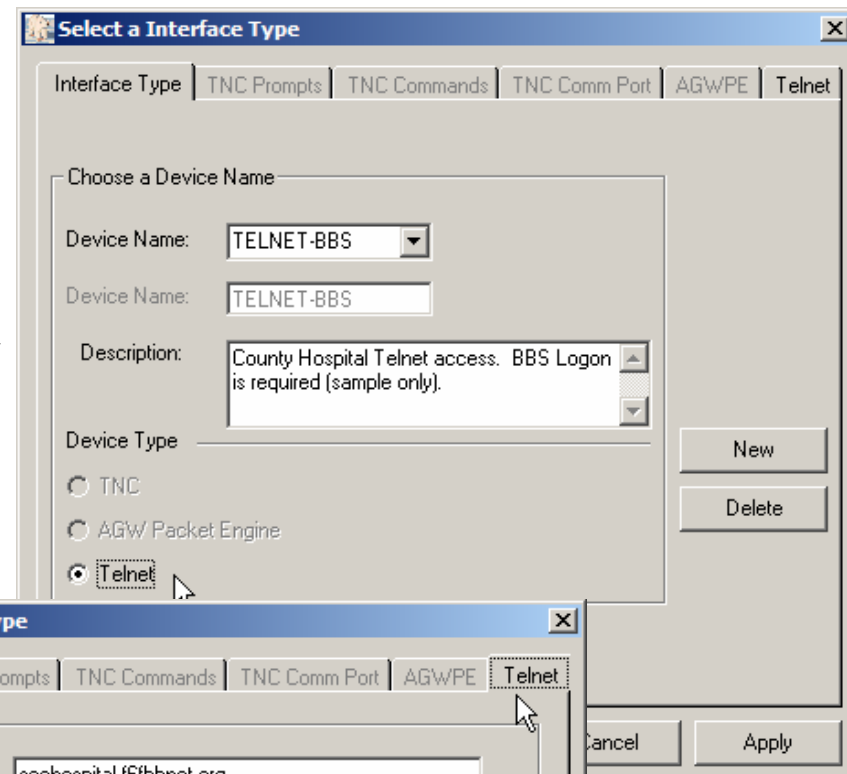
Setups - telnet

Application setups

- TNC Interface setup
 - TNC Prompts
 - TNC Commands
 - Comm Ports
- AGWPE
- Telnet

Notes...

- Requires access to a LAN or internet, depending on where the BBS is.



Select a Interface Type

Interface Type | TNC Prompts | TNC Commands | TNC Comm Port | AGWPE | Telnet

Choose a Device Name

Device Name: TELNET-BBS

Device Name: TELNET-BBS

Description: County Hospital Telnet access. BBS Logon is required (sample only).

Device Type

TNC

AGW Packet Engine

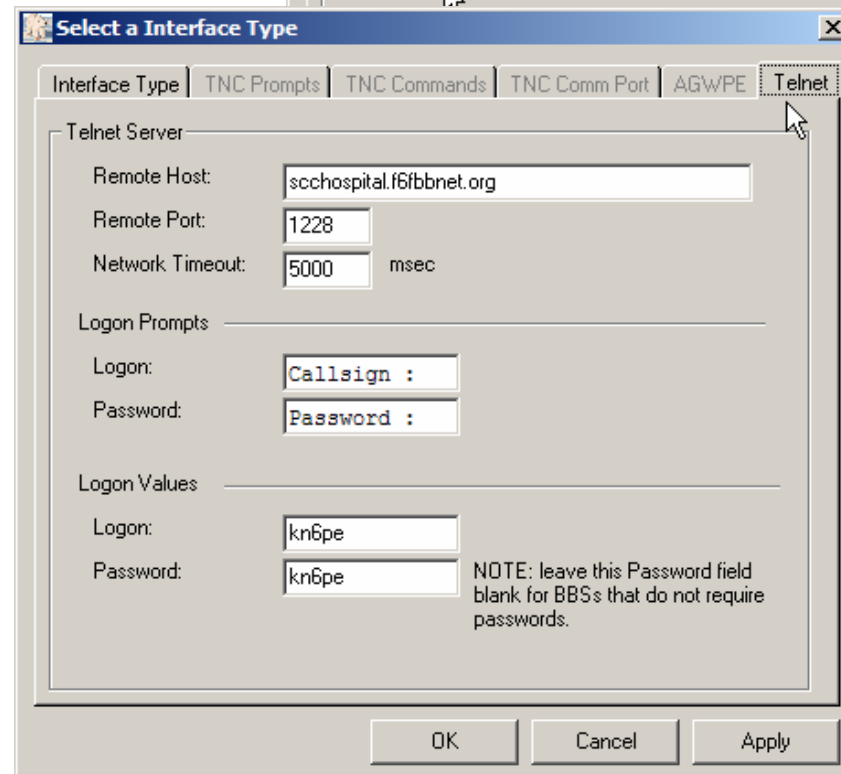
Telnet

New

Delete

Cancel

Apply



Select a Interface Type

Interface Type | TNC Prompts | TNC Commands | TNC Comm Port | AGWPE | Telnet

Telnet Server

Remote Host: scchospital.f6fbbnet.org

Remote Port: 1228

Network Timeout: 5000 msec

Logon Prompts

Logon: Callsign :

Password: Password :

Logon Values

Logon: kn6pe

Password: kn6pe

NOTE: leave this Password field blank for BBSs that do not require passwords.

OK

Cancel

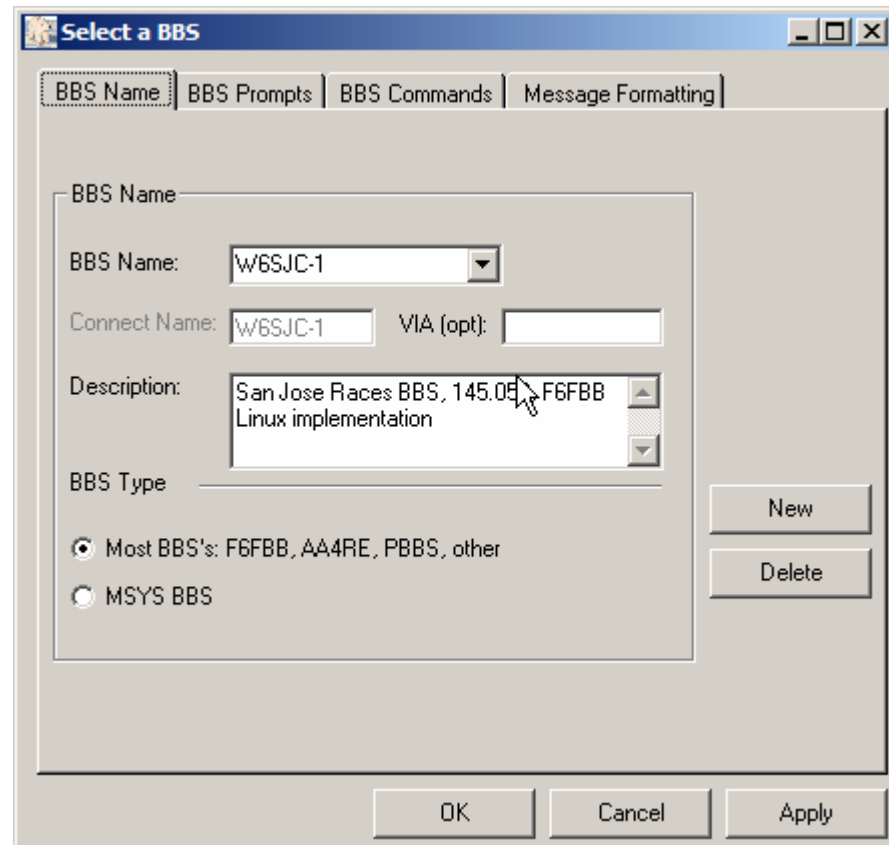
Apply



Setups - BBS

Application setups

- BBSs
 - BBS Prompts
 - BBS Commands



Notes...

- Defaults are the most common BBS commands.
- Need to be careful with BBS prompt uniqueness.



Setups - BBS

Application setups

- BBSs
 - BBS Prompts
 - BBS Commands

The screenshot shows the 'Select a BBS' dialog box with the 'BBS Prompts' tab selected. The 'Command' field is set to 'W6SJC >'. The 'Tactical Call' checkbox is unchecked. The 'Advanced' section contains two text boxes for unique text after Outpost, both containing 'W6SJC >'. A 'Default' button is at the bottom right of the dialog.

Notes...

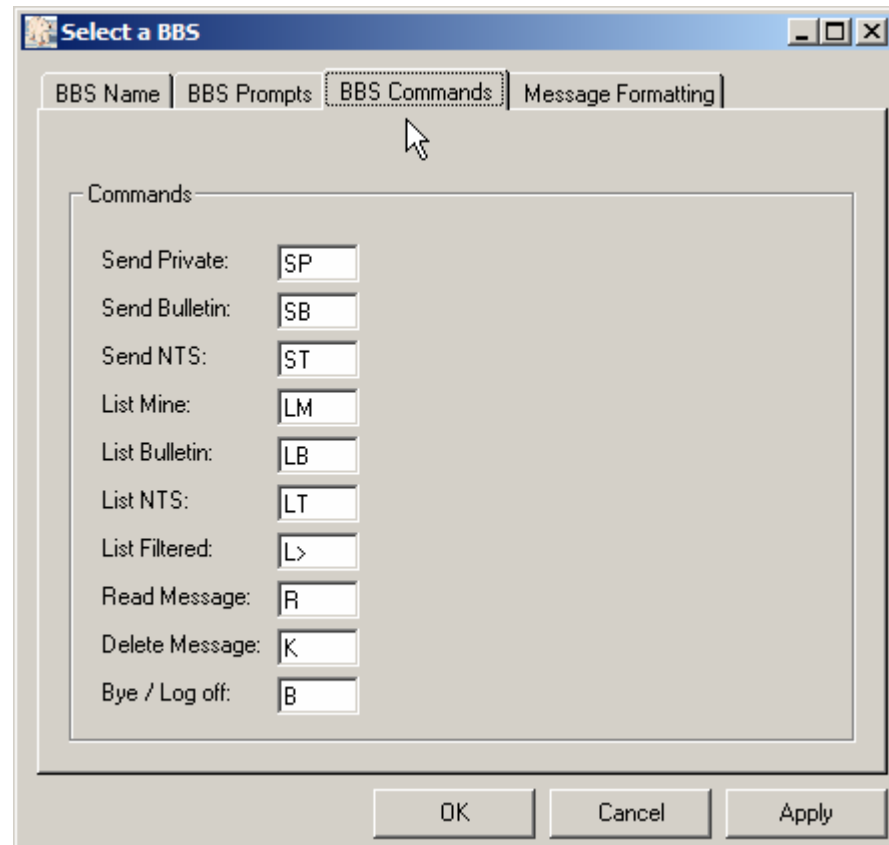
- BBS Prompts “Help>” and “Help >” are not the same!
- Need to be careful with BBS prompt uniqueness (like MSYS’s “>” prompt).
- When in doubt, manually connect to a BBS, and copy the BBS prompt as is... the more of the prompt there is, the better (less unique).
- Secondary Tactical Call Logon available (such as the modified AA4RE BBS).



Setups - BBS

Application setups

- BBSs
 - BBS Prompts
 - BBS Commands



Notes...

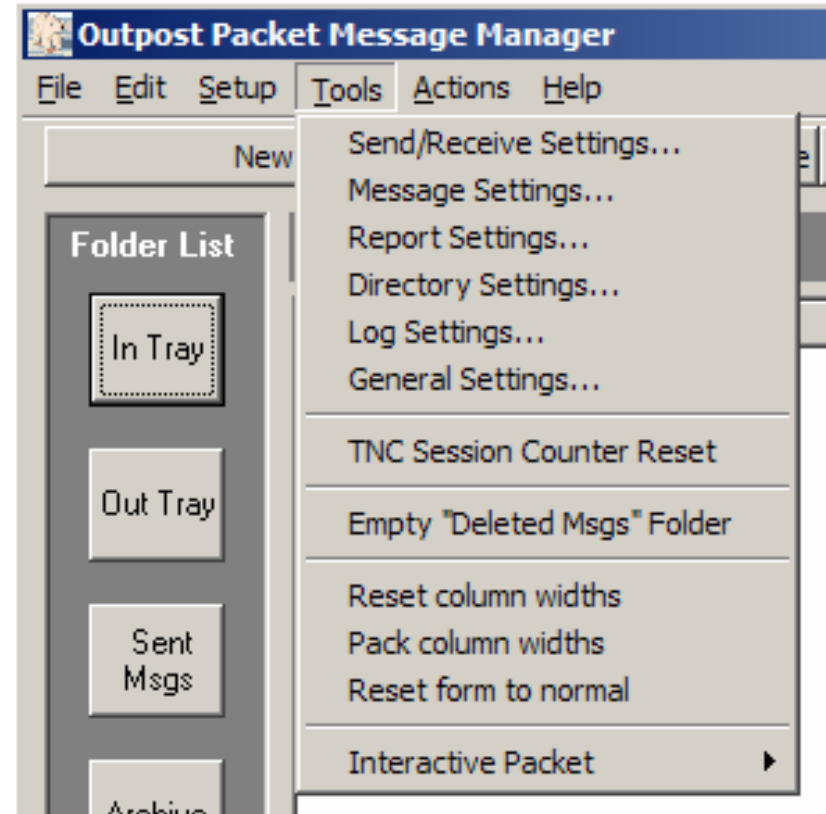
- Common commands that Outpost needs to interact with the BBS.
- Outpost sends these commands to the BBS as part of the send/receive session.



Tools and Controls

Types of controls

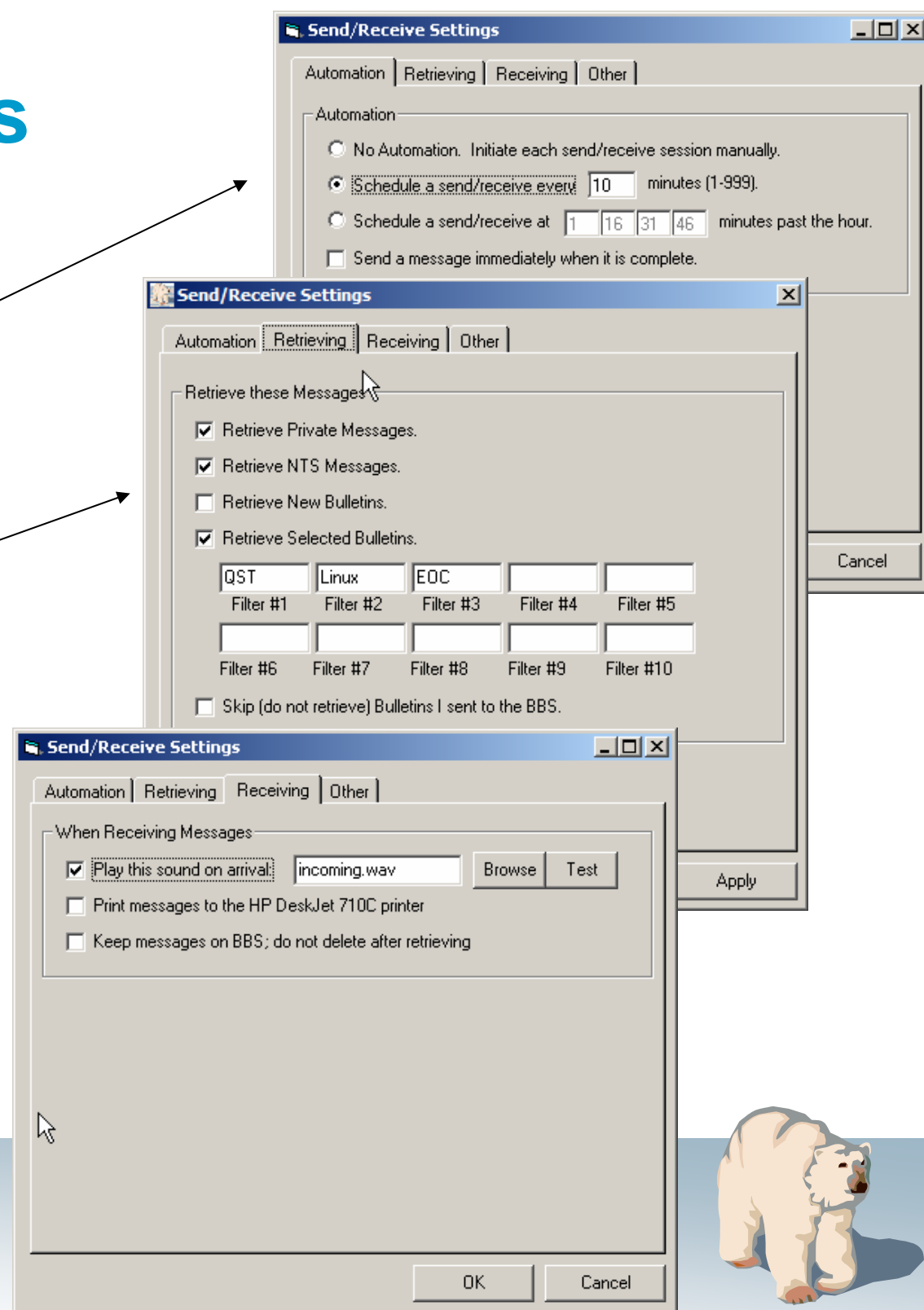
- Controls the flow of each Send/Receive Session
- Sets how messages are created and handled
- Set various data fields to automatically populate on-line reports, messages, other areas
- Set up default Directory Names
- Various Log Settings
- Controls to re-size message listing column widths
- Separate Interactive Packet Windows for Serial, AGWPE, and Telnet where the user can manually interact with the TNC (Serial only) or BBS



Tools and Controls

Send/Receive Settings

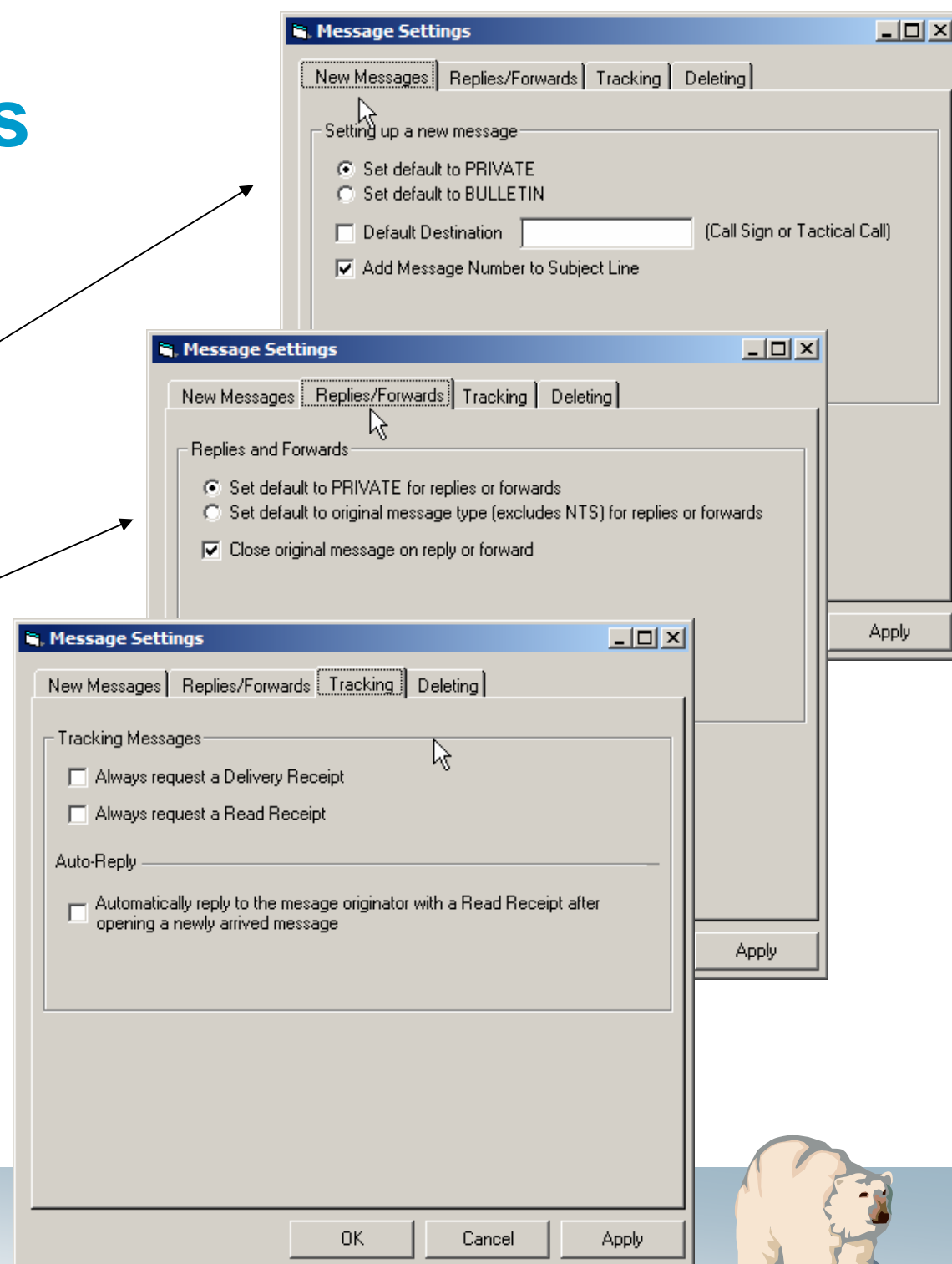
- Selects different ways to schedule message send/retrieve sessions
- Select which message types are to be retrieved
- Once a message is received, select what to do with it



Tools and Controls

Message Settings

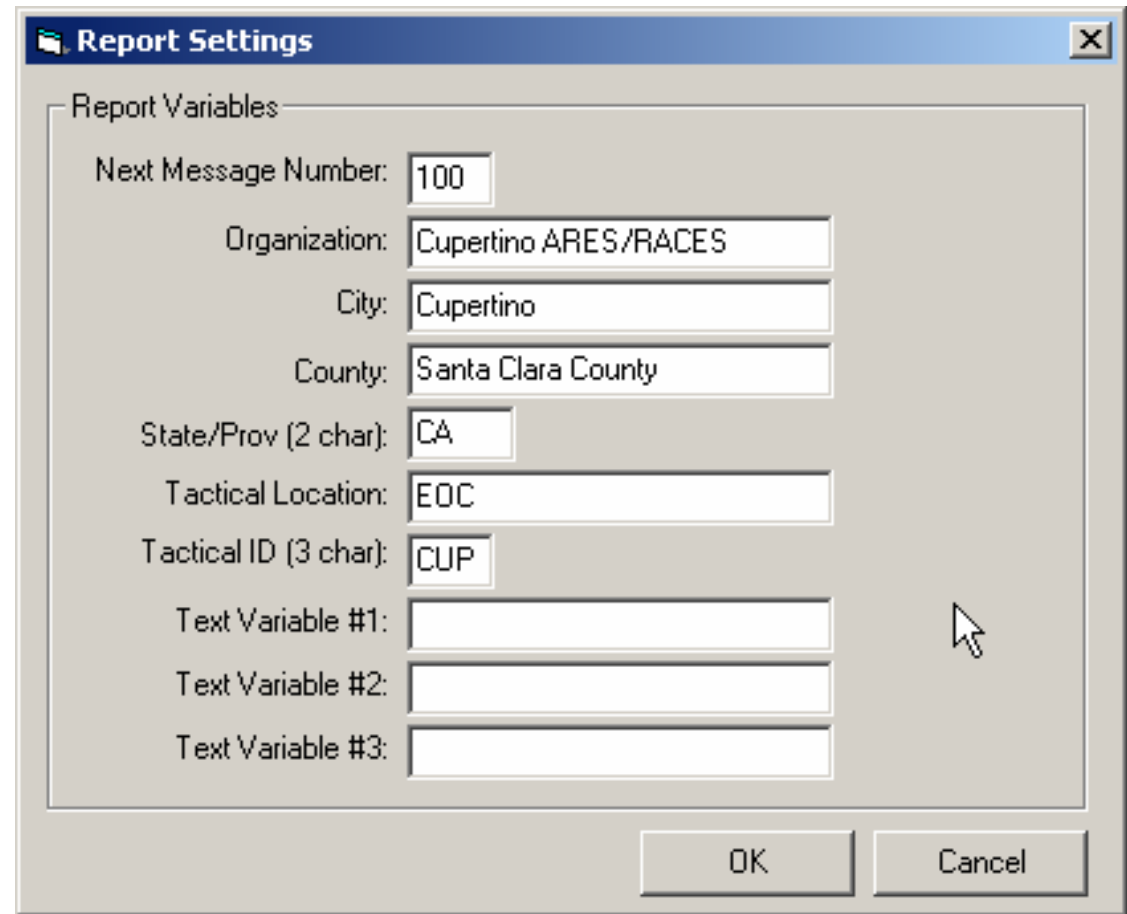
- Define default settings for new messages, includes
 - Default destinations
 - Auto message numbering
- Handling replies and forwards
- Set up defaults for requesting message receipts
- Setting for permanently deleting messages



Tools and Controls

Report Settings

- Message number automatically increments and populates...
 - the Subject Line
 - NTS Messages
 - On-line reports
- Standard report variables automatically replace <tags> in On-line Reports (described later)
- Three flexible fields are user-defined and automatically replace <tags> in On-line Reports



The screenshot shows a dialog box titled "Report Settings" with a close button (X) in the top right corner. The dialog box contains a section titled "Report Variables" with the following fields:

- Next Message Number: 100
- Organization: Cupertino ARES/RACES
- City: Cupertino
- County: Santa Clara County
- State/Prov (2 char): CA
- Tactical Location: EOC
- Tactical ID (3 char): CUP
- Text Variable #1: (empty)
- Text Variable #2: (empty)
- Text Variable #3: (empty)

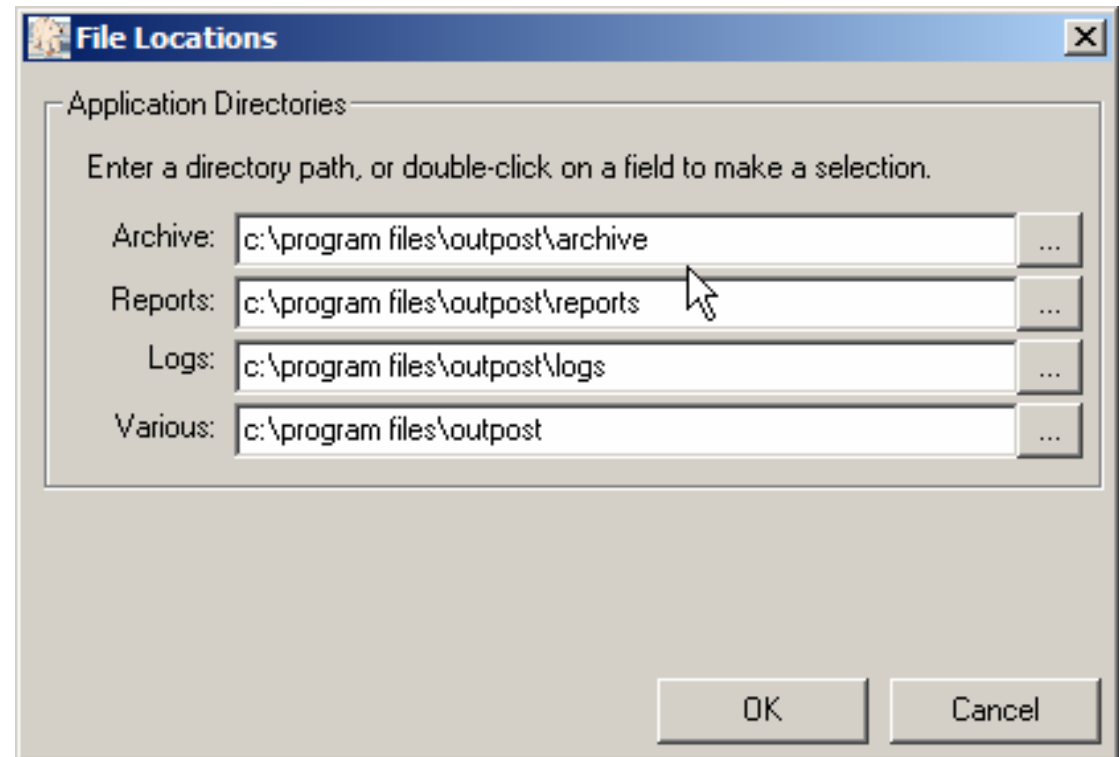
At the bottom of the dialog box, there are two buttons: "OK" and "Cancel". A mouse cursor is visible over the right side of the dialog box.



Tools and Controls

Directory Settings

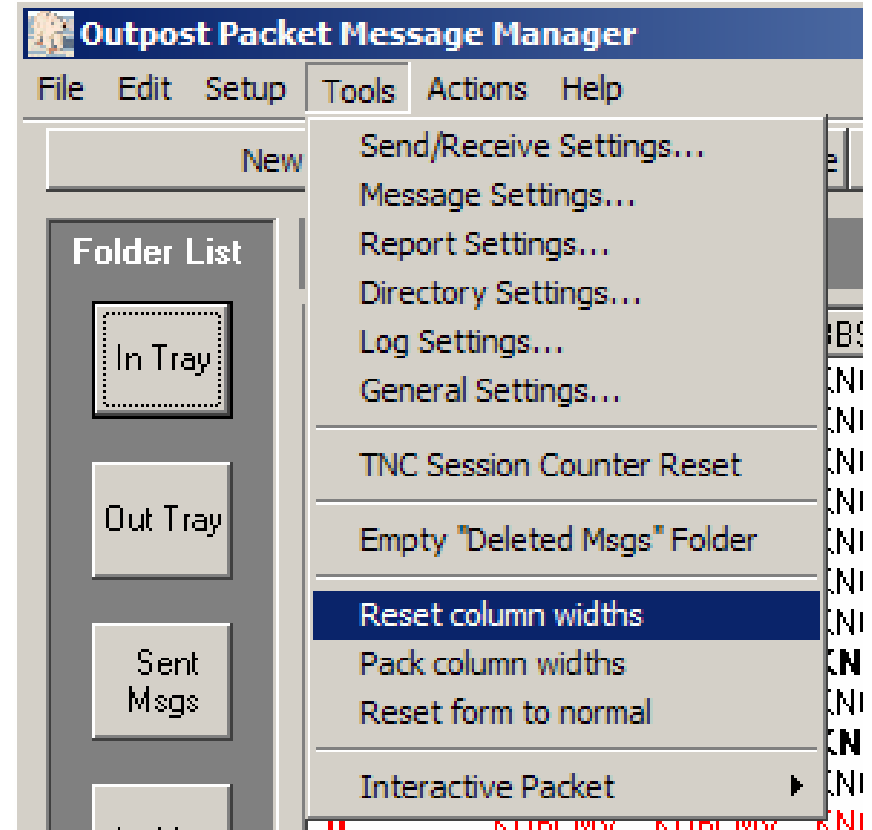
- Used for optional organization of application files...
 - Archive directory is used for message archive export and import files (*.oaf)
 - Reports directory is checked for any On-line Reports (*.txt)
 - Log directory is home for all Outpost logs (*.txt)
- On first time startup after installation, the directories listed here are created
- User defined to any existing or new directory on the PC



Tools and Controls

Other Controls

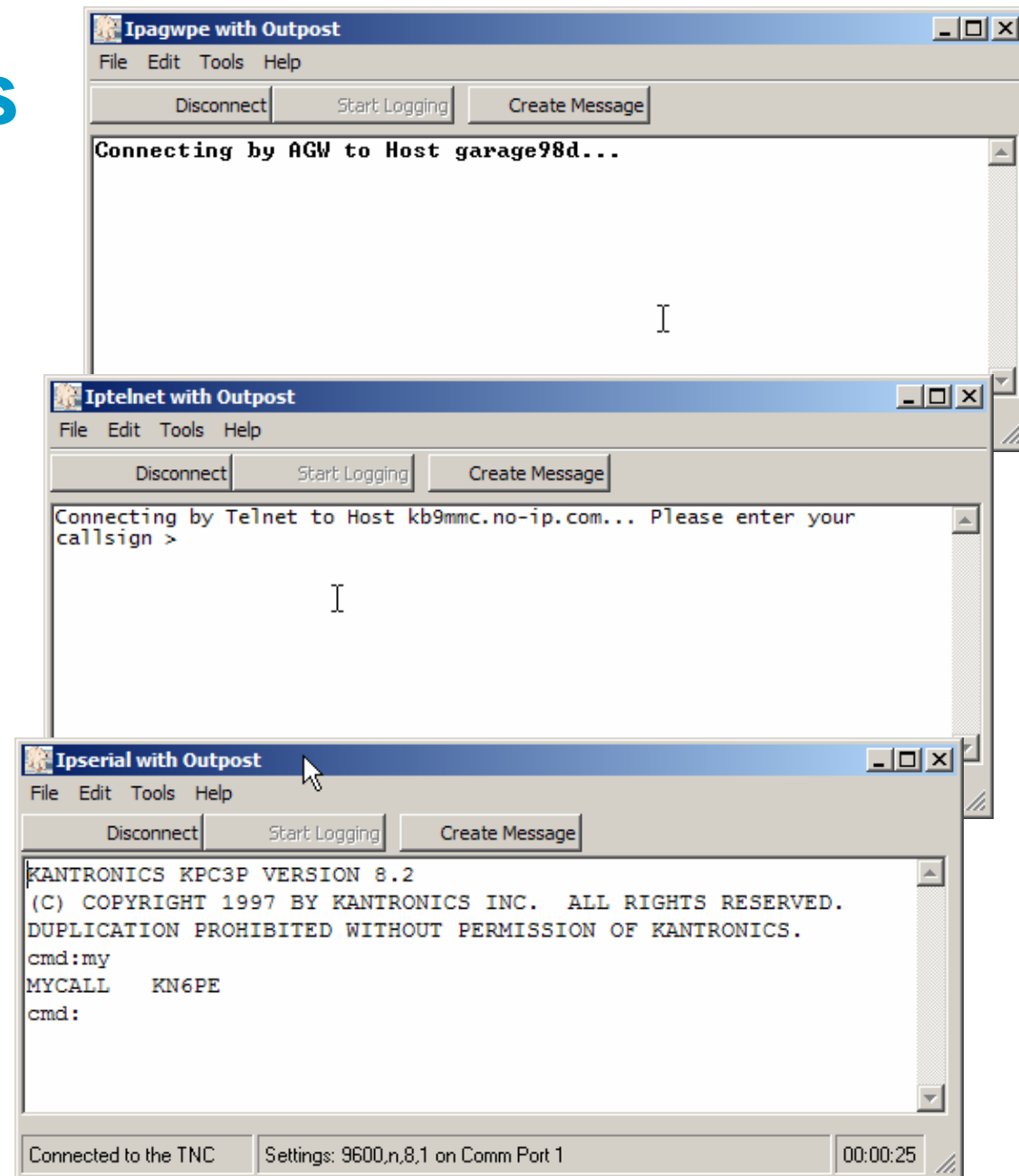
- General Settings...
 - Show station ID form on startup
- TNC Session counter displays in session logs; increments with each Send/Receive Session
- Bulk delete of the Deleted Msgs Folder
- Display controls
 - Resets column widths to their default settings
 - Packs column widths for optimal viewing
 - Resets the form if it gets stuck in a “minimized” state



Tools and Controls

Interactive Packet Window

- Windows to manually interact with the TNC (serial only) and BBS by
 - AGWPE
 - Telnet
 - Serial
- Logging controls
- Cut-and-paste clipboard support into and out of the IPW window
 - use the Edit control on the menu
 - cntl-c gets the TNC's attention
- Directly create an Outpost message from highlighted IPW text



Messages

• **Creating Messages**

- Direct Entry
- NTS Message Maker
- On-line Report Builder
- Cut-and-paste from other apps
- Import Text from a file

• **Special Message Handling**

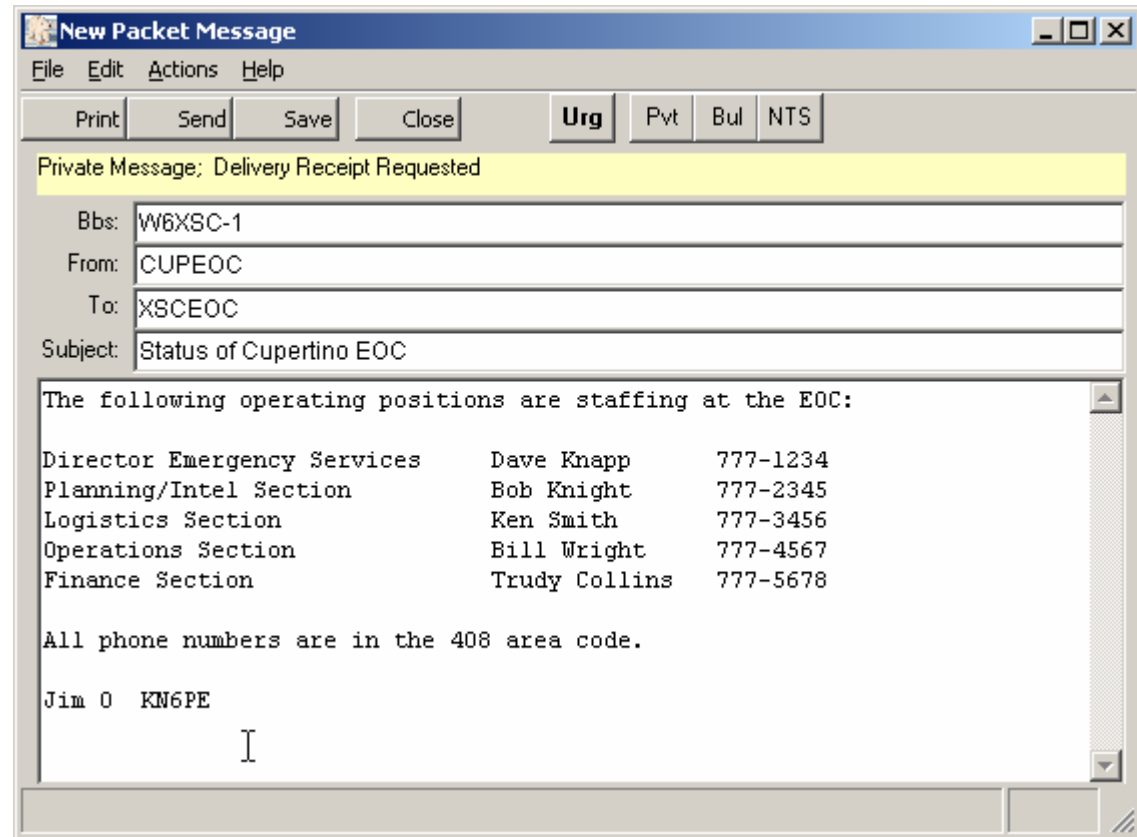
- Bulletins
- NTS



Creating Messages

Direct entry

- Allows cursor placement within the text field
- Supports TAB characters (cntl-tab) thereby reducing character count
- Allows text files to be directly imported into the message form



New Packet Message

File Edit Actions Help

Print Send Save Close Urg Pvt Bul NTS

Private Message; Delivery Receipt Requested

Bbs: W6XSC-1

From: CUPEOC

To: XSCEOC

Subject: Status of Cupertino EOC

The following operating positions are staffing at the EOC:

Director Emergency Services	Dave Knapp	777-1234
Planning/Intel Section	Bob Knight	777-2345
Logistics Section	Ken Smith	777-3456
Operations Section	Bill Wright	777-4567
Finance Section	Trudy Collins	777-5678

All phone numbers are in the 408 area code.

Jim O KN6PE



Creating Messages

NTS Message Maker

- Step 1: Forms-based with field validity checking

The screenshot shows the 'NTS Message Maker' application window. It features a menu bar with 'File' and 'Edit'. Below the menu bar are buttons for 'ARL Msg', 'Check', 'Save', 'Clear Msg', and 'Cancel'. The main interface is divided into several sections:

- Preamble:** Contains fields for 'Msg No:' (183), 'Precedence:' (R, with '(R, W, P, E)' in parentheses), 'Handling Instr: HX', 'Station of Origin:' (KN6PE), 'ARL Message:' (checkbox), 'Check:' (checkbox), 'Place of Origin:' (Cupertino, CA), 'Time of Origin:' (22:13), and 'Date of Origin:' (Feb 06).
- Destination Address:** Contains fields for 'Name:' (Dave Larson), 'Call Sign:', 'Address:' (5304 East Ranch Road), 'City:' (SACRAMENTO), 'State/Prov:' (CA), 'Zip/Postal:' (95825), and 'Phone No:' (916, 555, 1212).
- Message:** A text area containing the message: "Cannot attend the meeting this week. All airports are closed. Please advise the repeater committee that the project is almost complete."
- Signature:** A text field containing "Jim KN6PE".

At the bottom of the window, it says "Ready for NTS message entry".



Creating Messages

NTS Message Maker

- Step 1: Forms-based with field validity checking
- Step 2: Press Check; reformats the message per the agreed NTS Packet message standard

NTS Message Maker

File Edit

ARL Msg Check Save Clear Msg Cancel

Preamble

Msg No: 183

Precedence: R (R, W, P, E)

Handling Instr: HX

Station of Origin: KN6PE

ARL Message:

Check: 23

Place of Origin: Cupertino, CA

Time of Origin: 22:13

Date of Origin: Feb 06

Destination Address

Name: Dave Larson

Call Sign:

Address: 5304 East Ranch Road

City: SACRAMENTO

State/Prov: CA Zip/Postal: 95825

Phone No: 916 555 1212

Message

Cannot attend the meeting this week X All airports are closed X Please advise the repeater committee that the project

Signature

Jim KN6PE

Message looks good!



Creating Messages

NTS Message Maker

- Step 1: Forms-based with field validity checking
- Step 2: Press Check; reformats the message per the agreed NTS Packet message standard
- Step 3: Saves the message to a message window; message type is NTS. Press Send when ready.

New Packet Message

File Edit Actions Help

Print Send Save Delete Close Urg Pvt Bul NTS

NTS Message

Bbs: KN6PE-1

From: KN6PE

To: 95825@NTSCA

Subject: QTC 1 R SACRAMENTO CA (916-555)

Nr 183 R KN6PE 23 Cupertino, CA 22:13 Feb 06

BT

Dave Larson

5304 East Ranch Road

SACRAMENTO, CA 95825

(916)555-1212

BT

Cannot attend the meeting this week X All airports are closed X Please advise the repeater committee that the project is almost complete.

BT

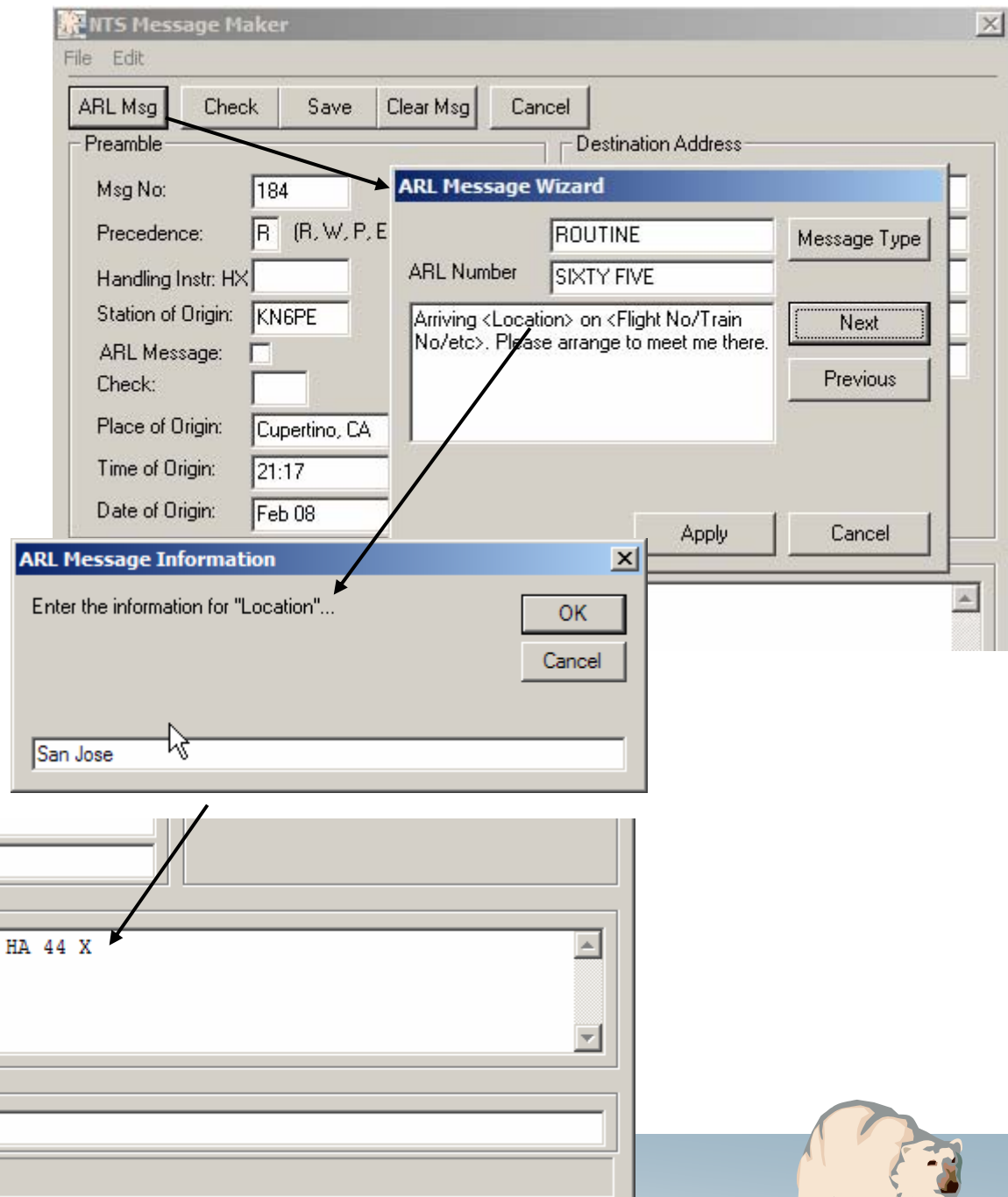
Jim KN6PE



Creating Messages

NTS Message Maker

- For ARL Messages...
 - Select the message Type... Routine or Emergency
 - Select the message
 - Provide any additional information
 - Send the message as usual



Creating Messages

On-line Report Builder

- Step 1: Set up the Report Settings (described previously)
- Step 2: Understand the list of Report <tags>

NOTE: there are some report variables that have to methods for representing them

Tag	Description
<D>, <date1>	mm/dd/yy (5/21/04).
<date2>	dd-mmm-yyyy (21-May-2004)
<T>, <time>	hh:mm (22:45)
<M>, <msg#>	Message Number; from Report Settings
<C>, <call>	Call, as entered at the Station ID form
<name>	Name, as entered at the Station ID form
<bbs>	BBS name; current BBS
<subj>text	Places "text" on subject line
<org>	Organization; from Report Settings
<city>	City name; from Report Settings
<county>	County name; from Report Settings
<state>	State name, 2 char; from Report Settings
<province>	Province name, 2 char; instead of state
<tacloc>	Tactical Location; from Report Settings
<tacid>	Tactical ID, 3 char; from Report Settings
<text1, 2, 3>	User defined text; from Report Settings
=	Prompt
/ comment	Place a comment in the report



Creating Messages

On-line Report Builder

- Step 1: Set up the Report Settings (Tools > Report Settings)
- Step 2: Collect the list of Report tags, most in the format “<tag>”
- Step 3: Develop the report template, save as a .txt file.

NOTE: see the use of comments (/), <tags>, and prompts (=)

```
DamageAssesment 3.txt - Notepad
File Edit Format View Help
/*****
/ Author:      Jim Oberhofer KN6PE
/ Rev Date:    29-May-2004
/*****
<subj>ARC DSR 5972
/
DAMAGE ASSESSMENT REPORT:  <org>
-----
DATE/TIME: <D>, <T>  Message Number: <tacid><msg#>

TOWN: <city>
ADDRESS OR LOT NUMBER: =
SUBDIVISION: =
PROPERTY TYPE: =
DAMAGE->(DESTROYED, MAJOR, MINOR, AFFECTED): =
DAMAGE DESCRIPTION:
=

OWNER INFORMATION:
NAME: =
PHONE NUMBER: =
NUMBER OF PEOPLE AFFECTED: =
    ADULTS: =          CHILDREN: =
    HANDICAP: =        ELDERLY: =

NUMBER OF CONFIRMED INJURIES: =
NUMBER OF CONFIRMED DEATHS: =

OPERATOR: <name> <C>
STATION TACTICAL: <tacloc>
AR
----- End of message -----
```



Creating Messages

On-line Report Builder

- Step 1: Set up the Report Settings (Tools > Report Settings)
- Step 2: Collect the list of Report tags, most in the format “<tag>”
- Step 3: Develop the report template, save as a .txt file.
- Step 4: From a new message form, “File > Open a Report” and choose a report template.
NOTE: Subject line is updated, <tags> are replaced, and cursor is positioned at the first prompt.
- Press cntl-Tab or left-mouse to progress to the next prompt.
- Press “File > Clear Remaining Prompts” for any unfilled prompts
- Press Send when done.

New Packet Message

File Edit Actions Help

Print Send Save Close Urg Pvt Bul NTS

Private Message

Bbs: W6XSC-1

From: CUPEOC

To:

Subject: ARC DSR 5972

DAMAGE ASSESSMENT REPORT: CARES

DATE/TIME: 12/26/04, 11:40 Message Number: CMW211

TOWN: Cupertino

ADDRESS OR LOT NUMBER: =

SUBDIVISION: =

PROPERTY TYPE: =

DAMAGE->(DESTROYED, MAJOR, MINOR, AFFECTED): =

DAMAGE DESCRIPTION: =

OWNER INFORMATION:

NAME: =

PHONE NUMBER: =



Creating Messages

Cut-and-Paste from other apps

- From Excel, highlight the fields to be copied, then paste into an Outpost message.
- At the receiving station, highlight and copy the message, then paste back into Excel.
- Tabs are preserved so the message can be pasted back into another spreadsheet.

The image shows two overlapping windows. The top window is Microsoft Excel, displaying a spreadsheet titled 'Shelter Requirements.xls'. The spreadsheet has columns for Item Number, Description, On Hand Units, Qty needed, Req Date, and Req Time. The bottom window is 'New Packet Message', which is a form for sending messages. It contains fields for Bbs, From, To, and Subject, and a large text area for the message body. The message body contains a table of material requirements, which is a copy of the data from the Excel spreadsheet.

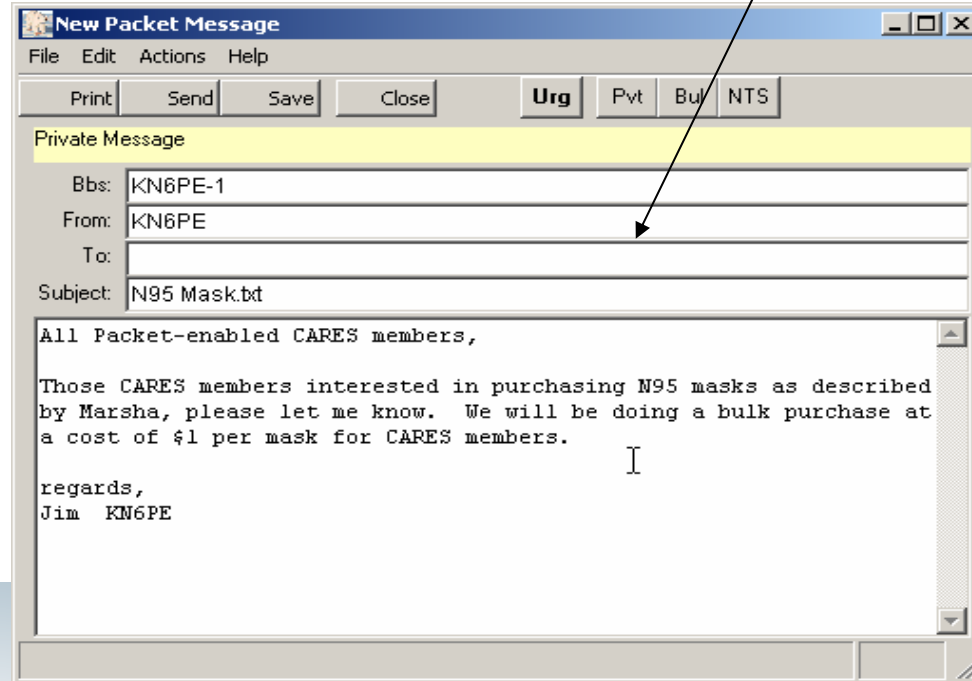
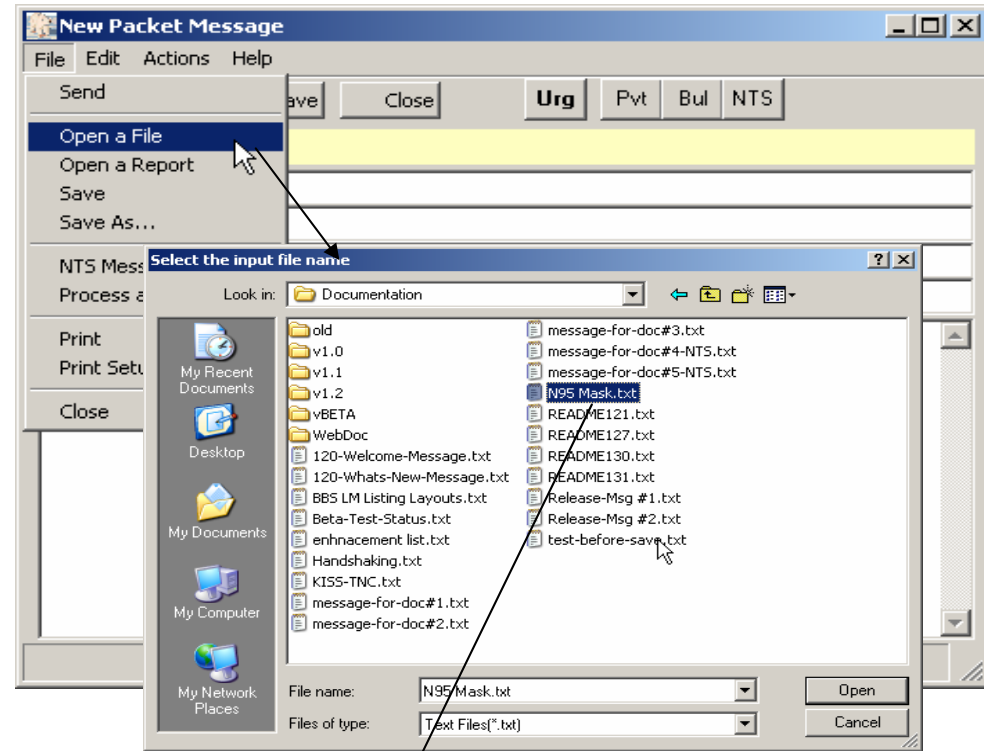
Item Num	Description	On Hand	Units	Qty needed	Req Date	Req Time
1	cots	30	ea	25	18-Mar	18:00
2	blankets	45	ea	15	18-Mar	18:00
3	water, 12 oz bottles	200	bottles	100	19-Mar	12:00
4	First Aid kits	3	kits	12	ASAP	
5	Toilet paper	50	rolls	250	19-Mar	12:00
6	tooth brushes	10	ea	50	ASAP	



Creating Messages

Import text from a file

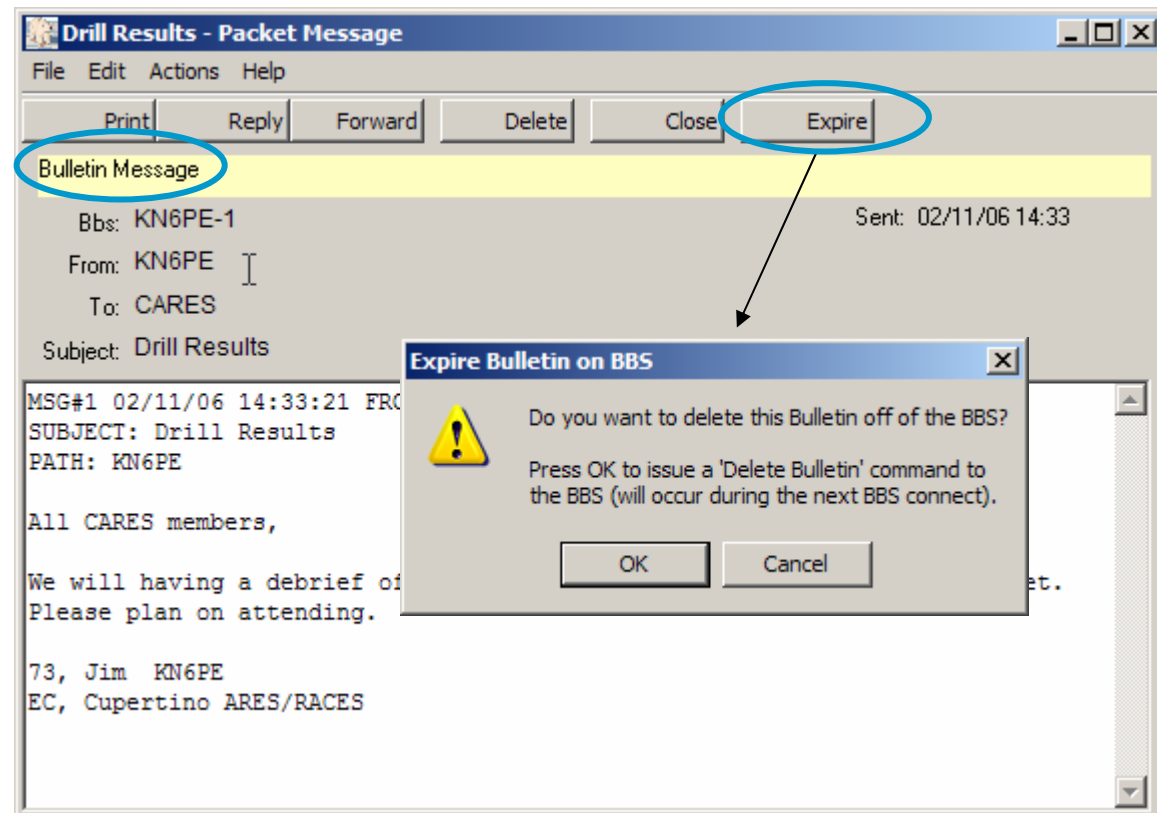
- Open a new message
- File > Open a file
- Select the text file, press OK
- Fill in the Destination and Subject.
- Press Send when done.



Special Message Handling

Bulletins

- To delete a bulletin off of the BBS that you originated...
 - Retrieve the bulletin from the BBS
 - Open the message
 - Press Expire
 - On the next send/receive session, the bulletin will be deleted off of the BBS.



Notes

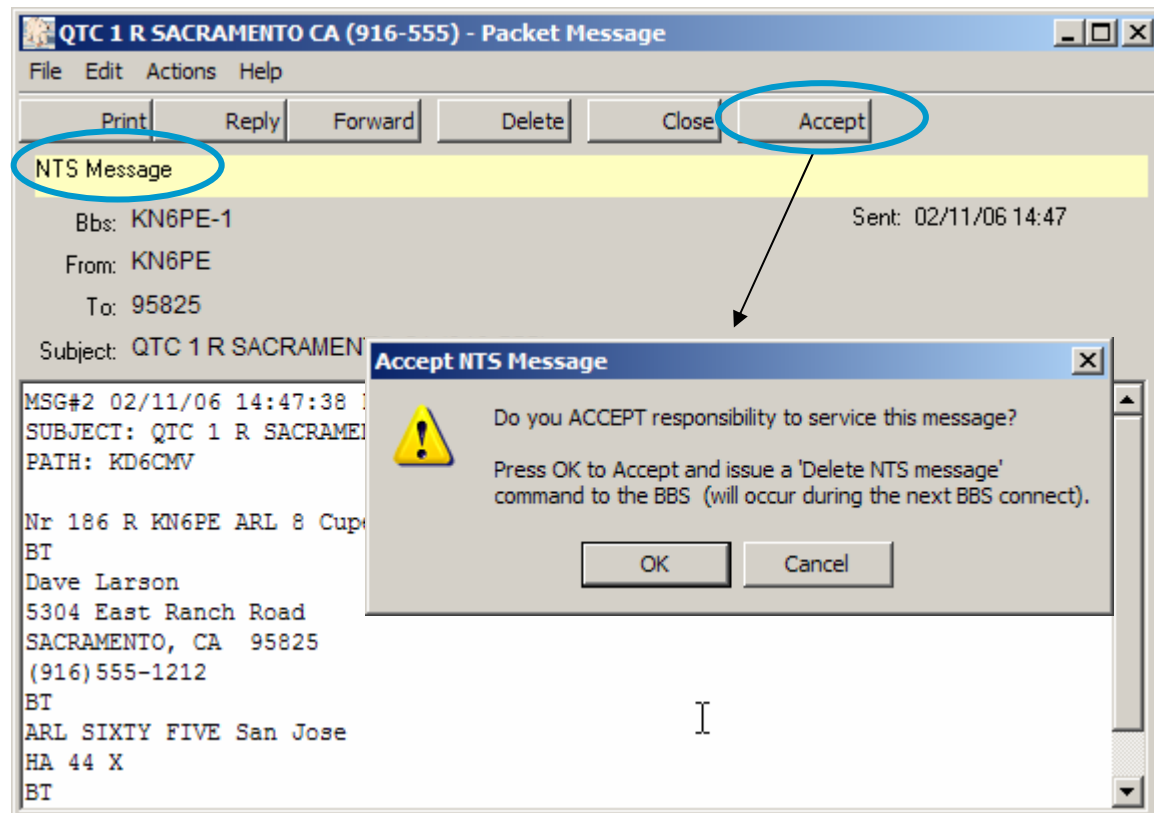
- You can on delete bulletins that you create



Special Message Handling

NTS Messages

- Retrieved NTS messages are not automatically deleted off of the BBS. To accept a message for servicing...
 - Retrieve the NTS message from the BBS
 - Open the message
 - Press Accept
 - On the next send/receive session, the NTS message will be deleted off of the BBS.

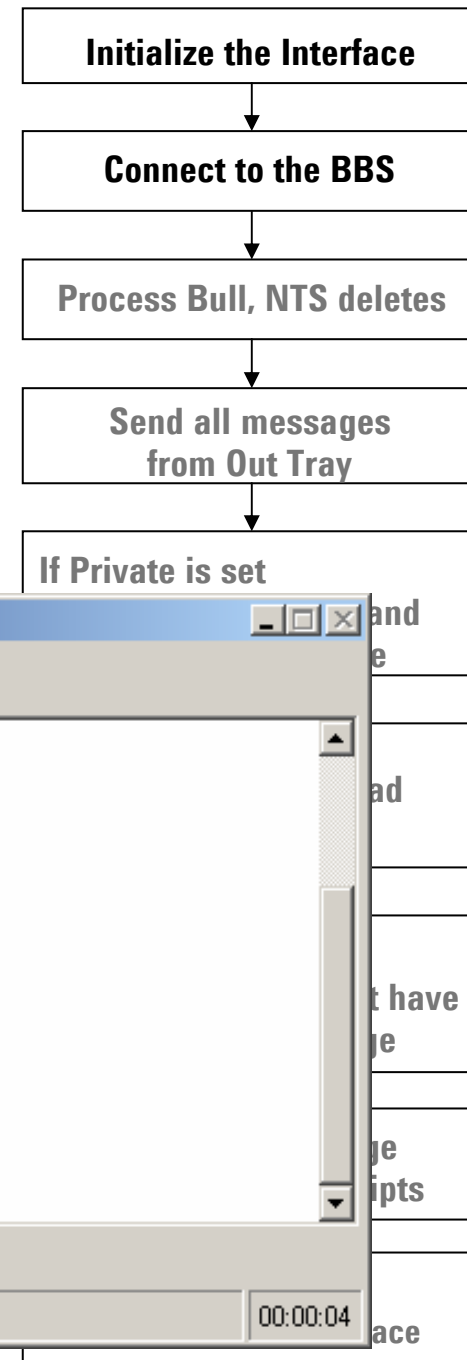
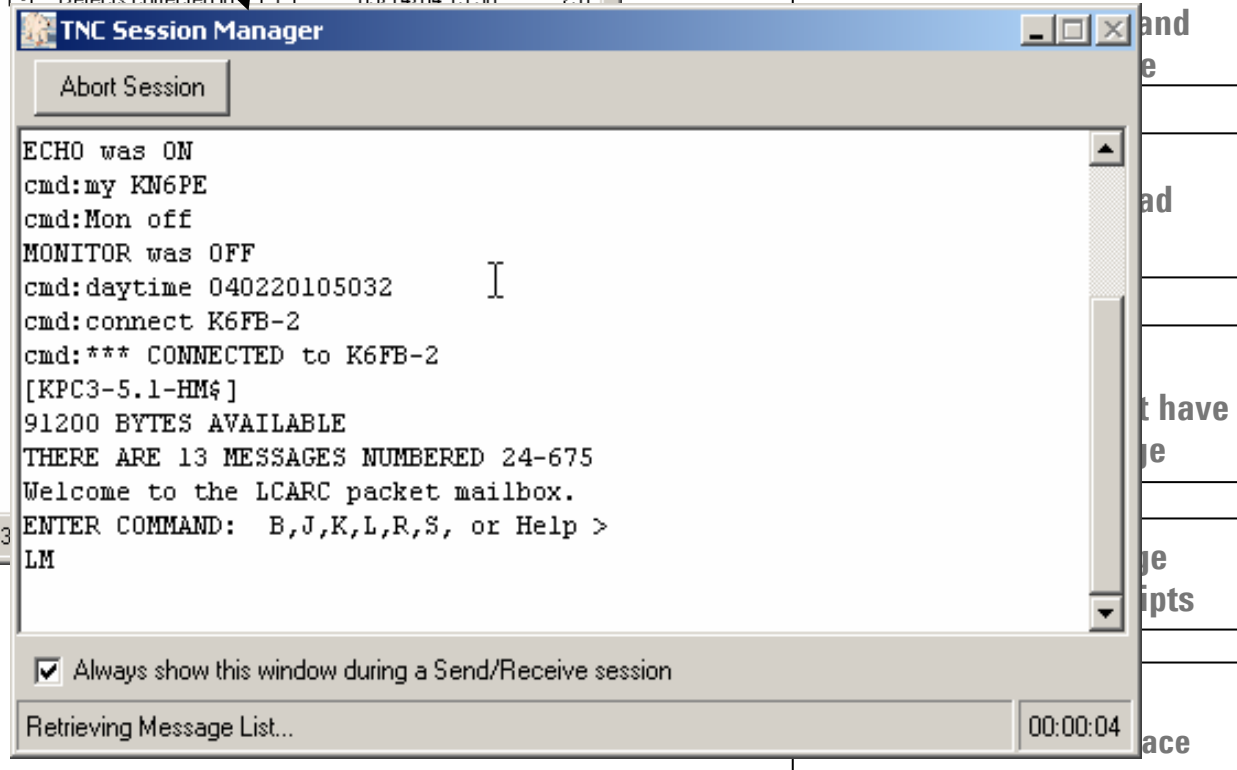
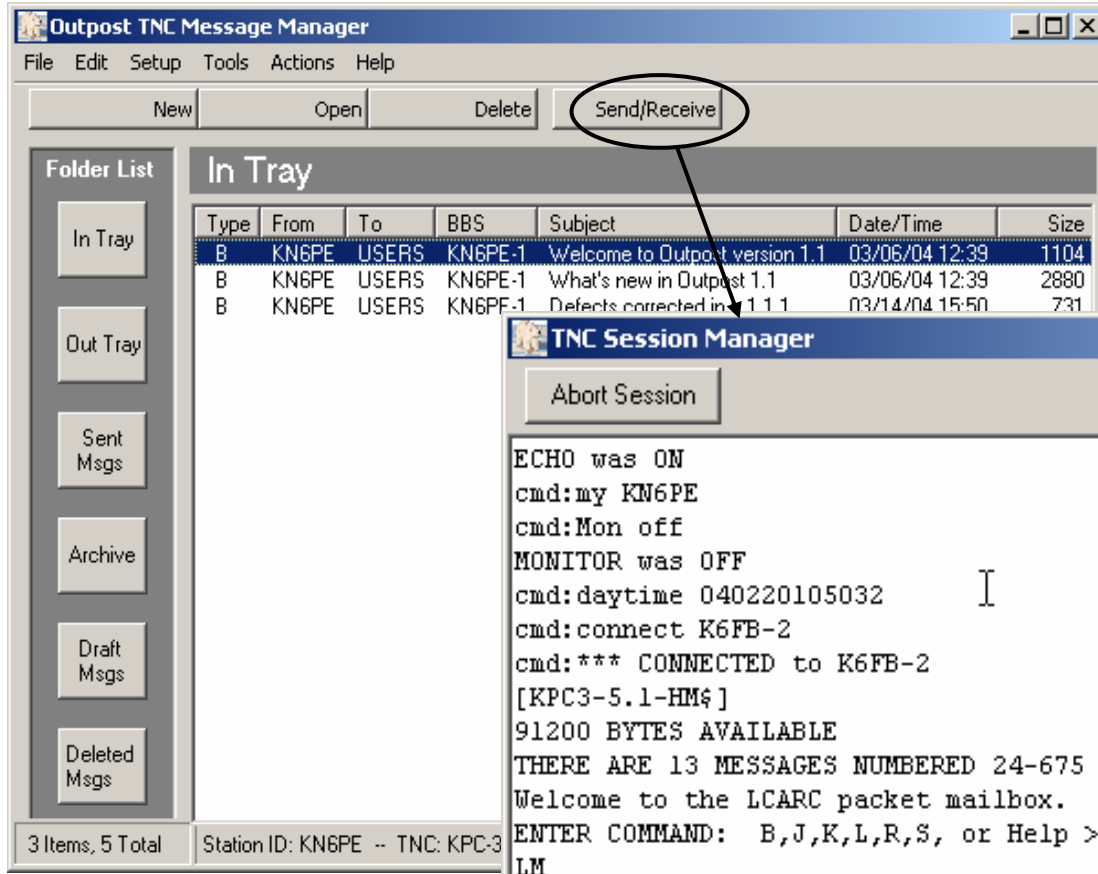


Notes

- If you change your mind and do not plan to service the NTS message, it is common courtesy to post it back up on the BBS

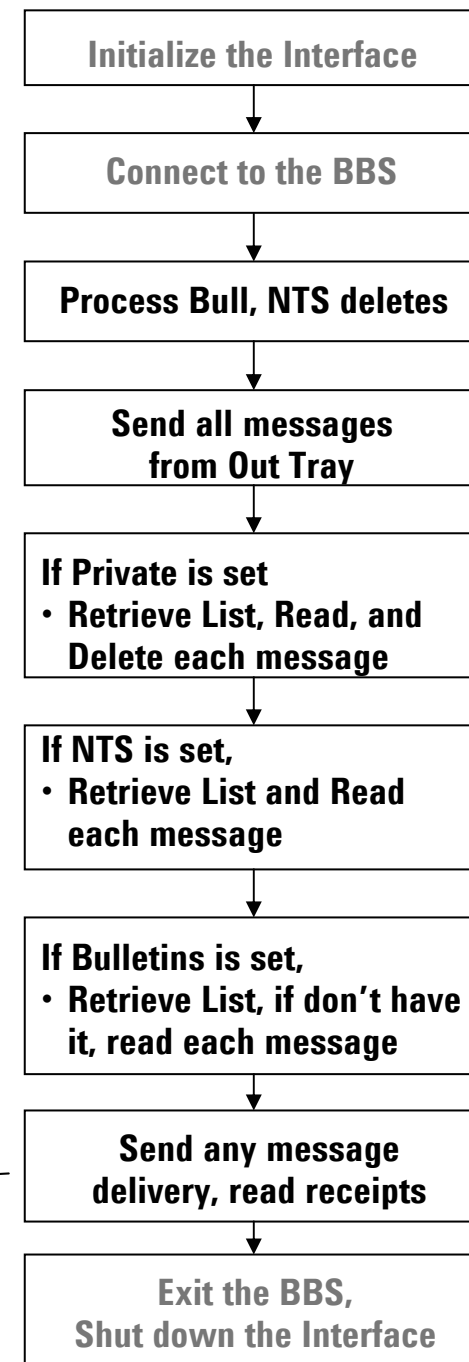


A Typical Session



A Typical Session

- **Influenced by...**
 - Send/Receive Settings
- **Send Messages**
 - Only sent from the Out Tray to this BBS
 - Messages must be “Sent” not “Saved”
 - Moved to Sent Folder when sent
- **Retrieve Messages**
 - Depends on the Retrieve settings; if none are selected, none are retrieved
 - Depends on the “Keep on BBS” setting
 - Bulletins are never deleted
 - New messages are stored in the In Tray
- **Send Receipts**
 - Any pending Delivery and Read Receipts are sent back to the requester



Considerations, Limitations and Constraints

What Outpost does not do

- No support for any bulletin board forwarding protocol
- No support for common mail protocols (POP3, SMTP, etc.)

Things to avoid

- Sending bulletins to a named person (instead of a group Identifier such as ALLEOC, etc.) will cause repeated retrievals by that person
- Embedding the BBS prompt string in a message (fails to ensure the uniqueness of the BBS prompt) will cause erroneous results



What's Next

- **Enhanced Packet Network Support**
 - KA-Node, NET/ROM routing
- **Generic Tactical Calls**
- **Attachments**
- **Winlink client support**



For more information

Send inquiries to...

Jim Oberhofer, kn6pe@arrl.net

Visit the Outpost website...

<http://www.CupertinoARES.org/projects/outpost>

Or, Google... outpost packet



