

ARES Packet Client

One solution to improving the speed and efficiency of
New Mexico ARES' traffic handling capabilities

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"Preparedness is not an event; it's a continuous process."

– Dr. Julie Gerberding, Director CDC

Why?

- Improves traffic handling capabilities of ARES groups, in terms of both speed and efficiency.
- Moves traffic handling off of voice nets by utilizing packet radio instead. This frees voice nets for other uses.
- Standardizes packet programs used amongst a cluster of ARES groups who can or will cooperate with each other during and emergency.
 - This affords groups more efficiency while using packet since there is a single, common program to train with and use in the field.
- All actions are logged automatically by the program and made available for printing or electronic archiving (i.e. those important after-action reports)
 - Logging voice traffic/actions presents yet another task that must be done manually, which is subject to errors or lack of completeness.
- Packet offers some sense of “security.” Unsuspecting media or Hams will not be able to monitor traffic.
- Easy to use – any Ham who knows how to type on a keyboard can use this program to send and receive ARES traffic efficiently.
 - No packet experience required, which means any member of team is able to use this program. Good if the group’s “digital guru” is unavailable or otherwise occupied.

Tour of Program...

(Main Screen)

Emergency Service Packet Terminal - TNC

File Edit Network Tools Control Operator Logs and Message Files Help

Connect State
 Not Connected

Clear Screen
Connect
Disconnect
Manual Log Entry

TNC Data Transfer:

To change the comm settings use the TOOLS - TNC CONFIGURATION menu.

DD5=II COMMUNICATOR PLUS Version 7.1P
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cmd:^c
cmd:Echo OFF
ECHO was OFF
cmd:AutoLF OFF
AUTOLF was OFF
cmd:Beacon Every 0
BEACON was AFTER 0/AFTER 0
cmd:Beacon After 0
BEACON was EVERY 0/EVERY 0
cmd:my N5ZGT-1
cmd:

Status NO. Precedence Handling Statn of Orgn To/From Time Date

Received Messages
Print [] [] [] [] [] [] [] []
Display [] [] [] [] [] [] [] []
Forward [] [] [] [] [] [] [] []

Saved Messages
Print [] [] [] [] [] [] [] []
Display [] [] [] [] [] [] [] []
Send [] [] [] [] [] [] [] []

Sent Messages
Print [] [] [] [] [] [] [] []
Display [] [] [] [] [] [] [] []
ReSend [] [] [] [] [] [] [] []

Free-Form Message
ARRL Message
Numbered Radiogram
ICS Message

Messages in Send Queue: 0

Rx Data
Tx Data

Status: Error:

Main Screen Features

- (1) Main screen allows you to control TNC in a normal fashion, as if you were running your TNC's standard software.
 - This allows for normal TNC operation (if needed), without having to switch programs.
- (2) ARES Packet Client keeps a time-stamped log of **everything, automatically,** that happens for after-action reports. It keeps track of when the program was started, when a station was connected to, when a message was sent, when a message was received, when message delivery failed, when the control operator at the keyboard changes, etc. Manual log entries can be inserted by the user, too. Logs are easily accessed from main screen and are also save in Microsoft Access format.
- (3) Operator has easy access to saved messages, sent messages and received messages. Operator can display, print, send, forward or re-send any of those messages with only a click of the mouse.
- (4) Operator can easily see how many messages are in the queue to be sent.
- (5) Operator has easy access to common message templates for composing and sending messages. Received messages are displayed within the same templates. This is useful for experienced ARES members and beginners alike.
 - Screenshots and comments about these templates follow...

“Network configuration” screen allows user to enter a list of packet stations he/she will be communicating with or via. 9-character aliases can be entered so user doesn’t have to remember callsigns (i.e. SANDOVAL instead of W5SCA, VALENCIA instead of KC5OUR, SANTAFE instead of W5SF).

User is also able to insert node paths if nodes are needed for communications to a particular station.

Example: Belen can enter path to Santa Fe (KC5OUR->CAPILA->W5SF) and program will automatically use that path when a message is to be sent to Santa Fe. User only needs to specify SANTAFE as recipient in the future, and program takes care of node routing automatically from that moment on.

The stations defined in this menu are then made available in a pull-down “Destination station” menu found in all message templates. Notice this menu in the templates ahead.

Network Configuration

Select Node to Edit or Delete:

Add OK

Edit OK

Delete

Cancel

Exit

Node Detail

Alias: Callsign:

Point-to-Point/Digipeater Local Node/1st Digi:

TheNet (SEDAN) Connection Distant Node/2nd Digi:

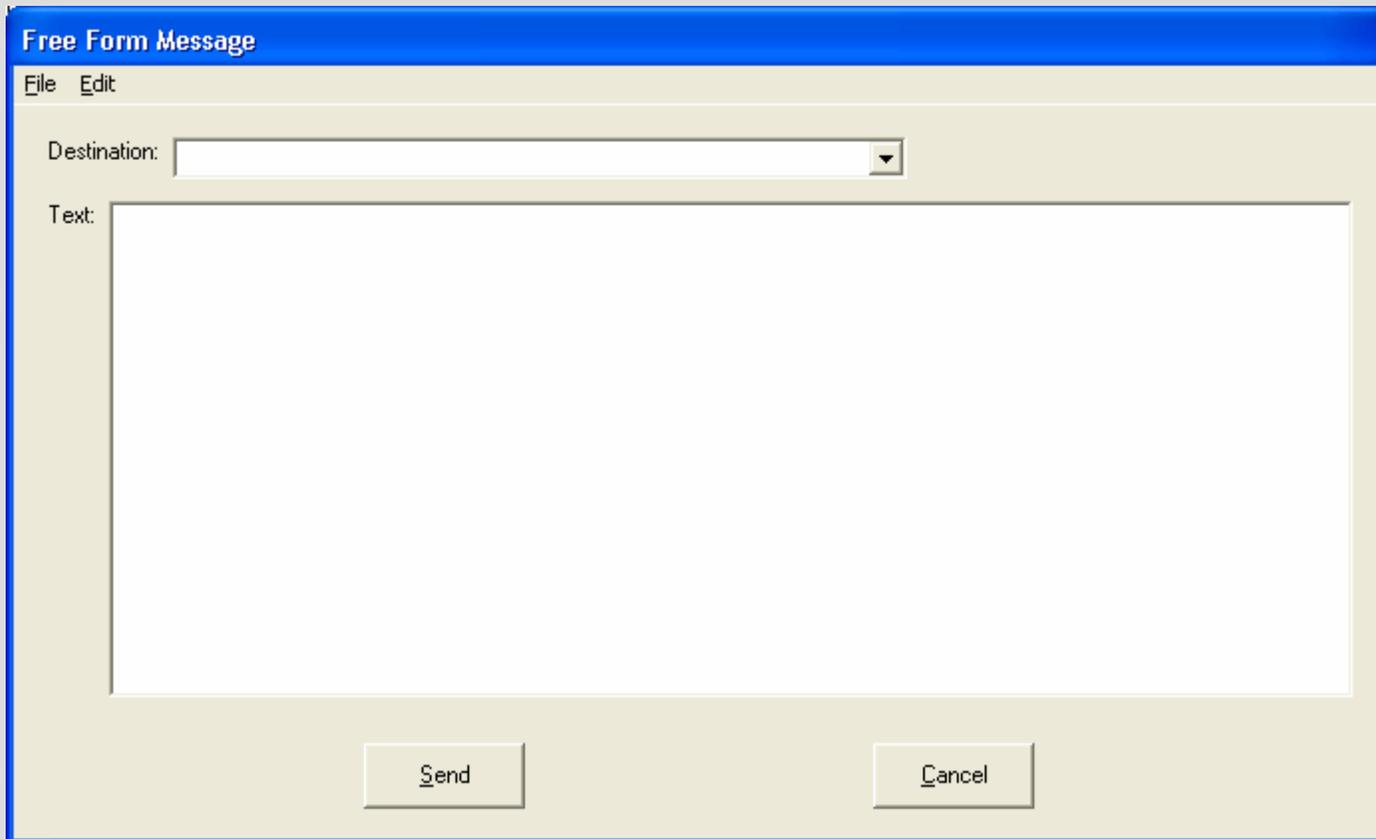
3rd Digi:

BBS

File Server

Gateway

(All fields limited to 9 characters)



The image shows a software dialog box titled "Free Form Message". It has a blue title bar and a light beige background. At the top left, there is a menu bar with "File" and "Edit" options. Below the menu bar, there is a "Destination:" label followed by a text input field with a dropdown arrow on the right. Below that is a "Text:" label followed by a large, empty text area. At the bottom of the dialog, there are two buttons: "Send" and "Cancel".

Free form message template allows operator to send informal messages that don't require certain formatting. Can be used for internal resource management and information.

ARRL Message Form

File Edit

Remote Print: ON/OFF Remote Alarm: ON/OFF

Number	Precedence	Handling	Station of Origin	Check	Place of Origin	Time Filed	Date
1	ROUTINE		N5ZGT-1		N5ZGT	10:21:05 PM	2/18/2005

To: Destination Station:

Choose Message Template (if desired)

Telephone:

Text:

Signature:

Received:	From	Date	Time	Sent:	To	Date	Time

ARRL message form resembles the printed ARRL Radiogram for easy transfer to/from an actual printed message. ARES Packet client keeps track and assigns message numbers, dates, times of origin and station of origin. It also checks for errors in message, and automatically enters "check" value before sending. Operator only needs to fill it out and specify where it is going...this program does the rest.

Numbered Radiogram

File Edit

To:

Telephone:

E-Mail Address/Destination Station/ZIP:

Messages:

[Select message]

8. Need additional ___ mobile or portable equipment for immediate emergency use.
9. Additional ___ radio operators needed to assist with emergency at this location.
10. Please contact ___. Advise to standby and provide further emergency information, instructions or assistance.
11. Establish Amateur Radio emergency communications with ___ on ___ MHz.
12. Anxious to hear from you. No word in some time. Please contact me as soon as possible.
13. Medical emergency situation exists here.
14. Situation here becoming critical. Losses and damage from ___ increasing.
15. Please advise your condition and what help is needed.

Signature:

Numbered radiogram template is easy to fill out – it includes 26 “ARL” preset messages designated for emergency use. Operator can add more to list. Operator can also type additional text, in addition to any preset messages. If using a preset message with “___” in it, ARES Packet Client will automatically prompt user to enter that information to fill in the blanks before message can be sent.

The image shows a software window titled "ICS Message" with a blue title bar and standard window controls (minimize, maximize, close). The window contains a form with the following fields:

- File Edit**: A menu bar at the top left.
- To:** A text input field.
- Position:** A text input field.
- From:** A text input field.
- Position:** A text input field.
- Subject:** A text input field.
- Date:** A text input field.
- Time:** A text input field.
- Message:** A large text area with a vertical scrollbar on the right side.
- Signature:** A text input field.
- Position:** A text input field.
- Reply:** A large text area with a vertical scrollbar on the right side.
- Date:** A text input field.
- Time:** A text input field.
- Signature/Position:** A text input field.

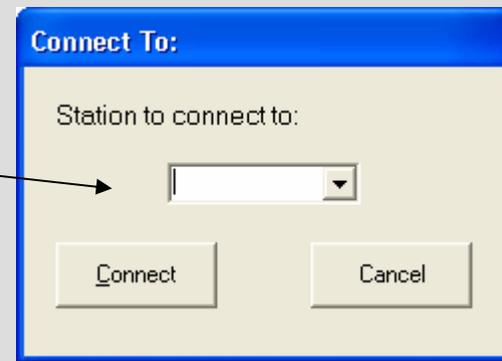
The ICS Message template uses the FEMA ICS 213 general message format. No restrictions are placed on the number of characters used within this template.

The ICS message template can be filled out and sent easily and as often as the situation dictates.

Other features / comments:

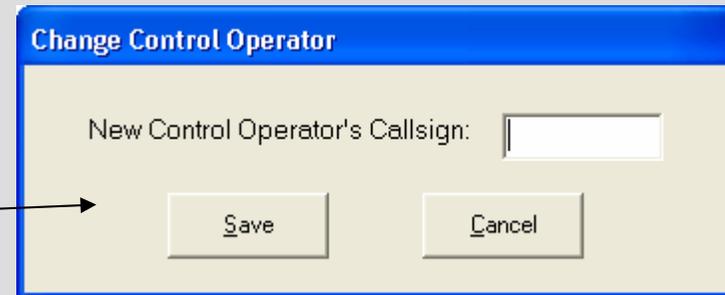
1. All messages – whether composed and saved, transmitted, or received – are automatically logged for future reference or for after-action reporting. These messages are easily accessible from the main screen.
2. Any Ham – with or without prior packet experience – can send messages by simply entering text on the screen and selecting a recipient. This user friendliness improves efficiency of ARES' traffic handling during drills or actual events, especially when your “digital guru” is unavailable to employ his expertise.
3. Unsent messages are kept in a queue, and ARES Packet Client periodically attempts to deliver those messages that did not get through. A log of undelivered messages is also kept for reference.

Used to connect to a station manually.
User can enter callsign, or use the pull-down menu to select a pre-loaded recipient.



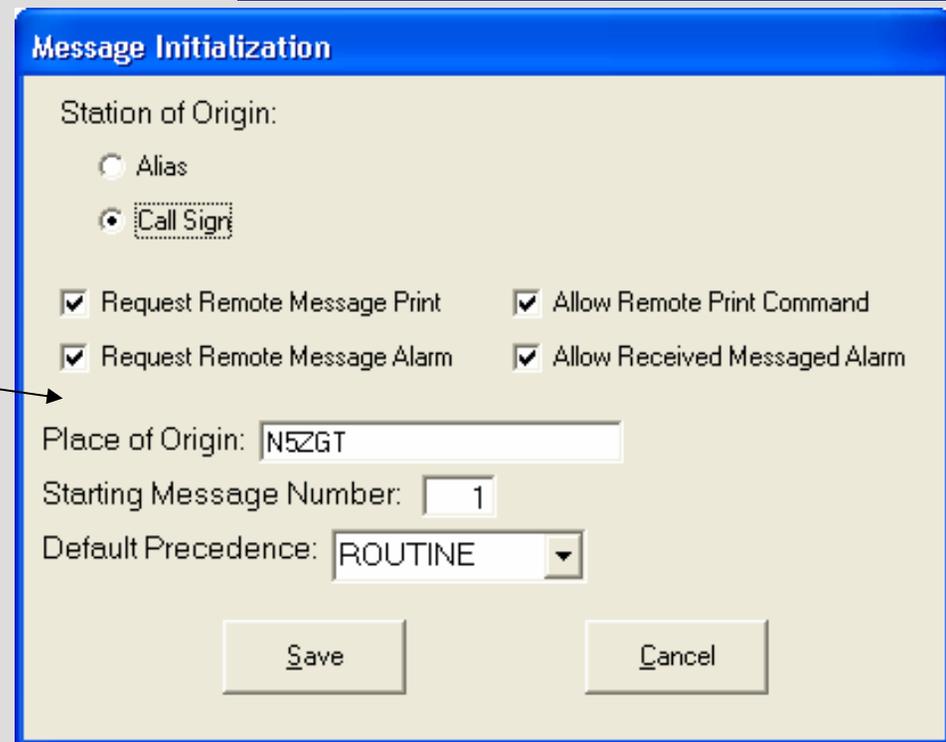
The "Connect To" dialog box has a blue title bar. It contains a label "Station to connect to:" above a pull-down menu. Below the menu are two buttons: "Connect" and "Cancel". An arrow from the text above points to the pull-down menu.

The "Change Control Operator" menu allows changing of the control operator's callsign without needing to use the TNC Configuration. This function resets the callsign entered in the TNC as well as the Station of Origin callsign used in messages.

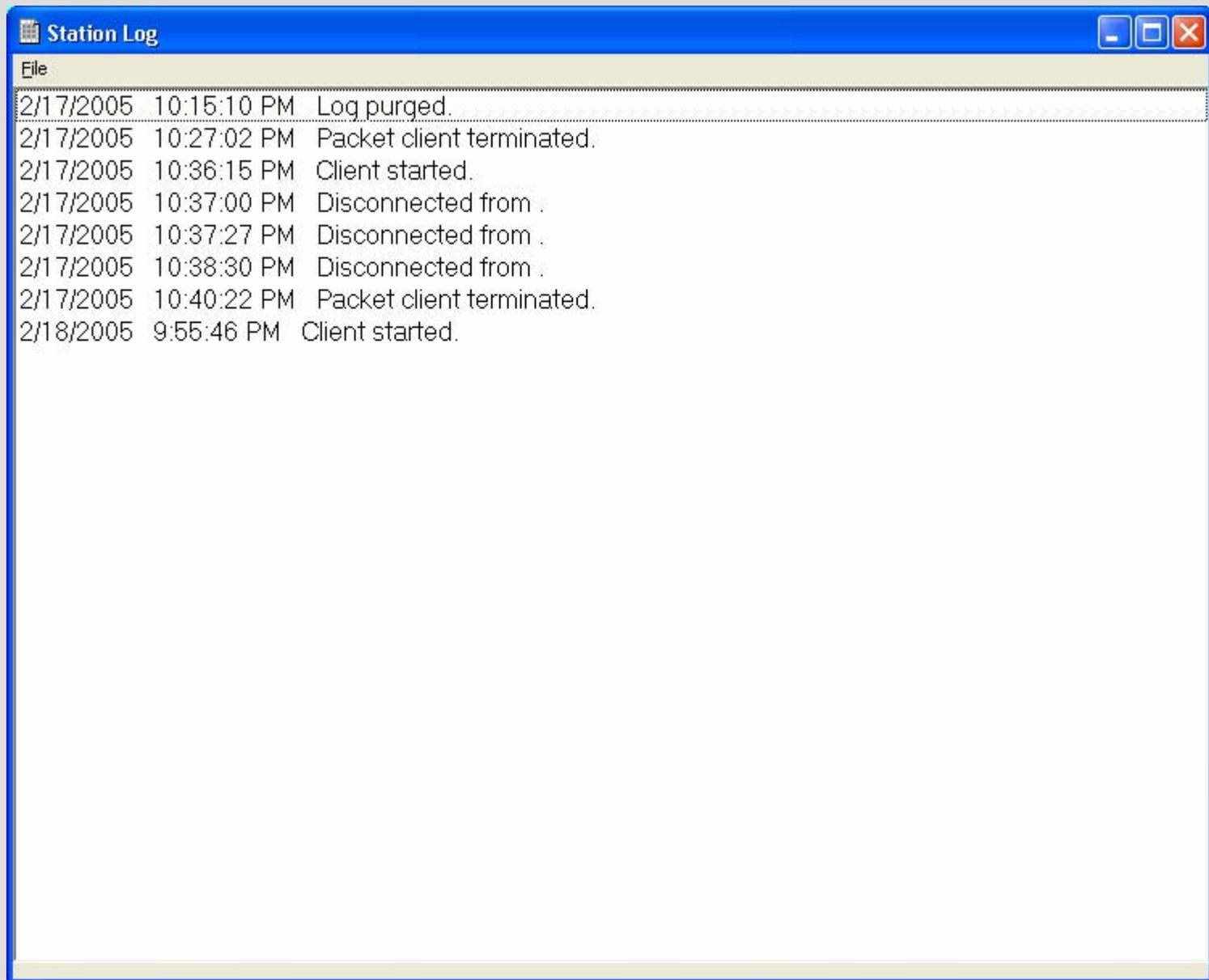


The "Change Control Operator" dialog box has a blue title bar. It contains a label "New Control Operator's Callsign:" above a text input field. Below the field are two buttons: "Save" and "Cancel". An arrow from the text above points to the text input field.

Can specify message initiation defaults, which can be changed for individual messages if the need arises. Yes, you can even force a message to be automatically printed at the receiving station if there is a printer hooked up to their computer (and vice-versa)!



The "Message Initialization" dialog box has a blue title bar. It contains several sections: "Station of Origin:" with radio buttons for "Alias" and "Call Sign" (selected); two columns of checkboxes for "Request Remote Message Print", "Request Remote Message Alarm", "Allow Remote Print Command", and "Allow Received Message Alarm"; "Place of Origin:" with a text field containing "N5ZGT"; "Starting Message Number:" with a text field containing "1"; and "Default Precedence:" with a pull-down menu showing "ROUTINE". At the bottom are "Save" and "Cancel" buttons. An arrow from the text above points to the "Call Sign" radio button.



Example of station log kept, which is easily accessible from the main screen. All logs are kept in a Microsoft Access compatible database for electronic archiving and printing purposes. Every action in program is logged automatically.

Configuration

Call Sign: SSID (1 - 15): Alias:

Com Port: COM (Set to 0 for sound card modem.)

Connect Command:

Connect Response:

Disconnect Command:

Disconnect Response:

Converse Command:

Command Prompt:

Command Control Character:

Initialization Character (Decimal Value):

TNC Data Rate:

- 1200 bps
- 2400 bps
- 4800 bps
- 9600 bps
- 19.2 kbps

Parity:

- None
- Even
- Odd

Flow Control:

- None
- X-on/X-off
- Hardware
- Both

Data Bits:

- Eight
- Seven

Stop Bits:

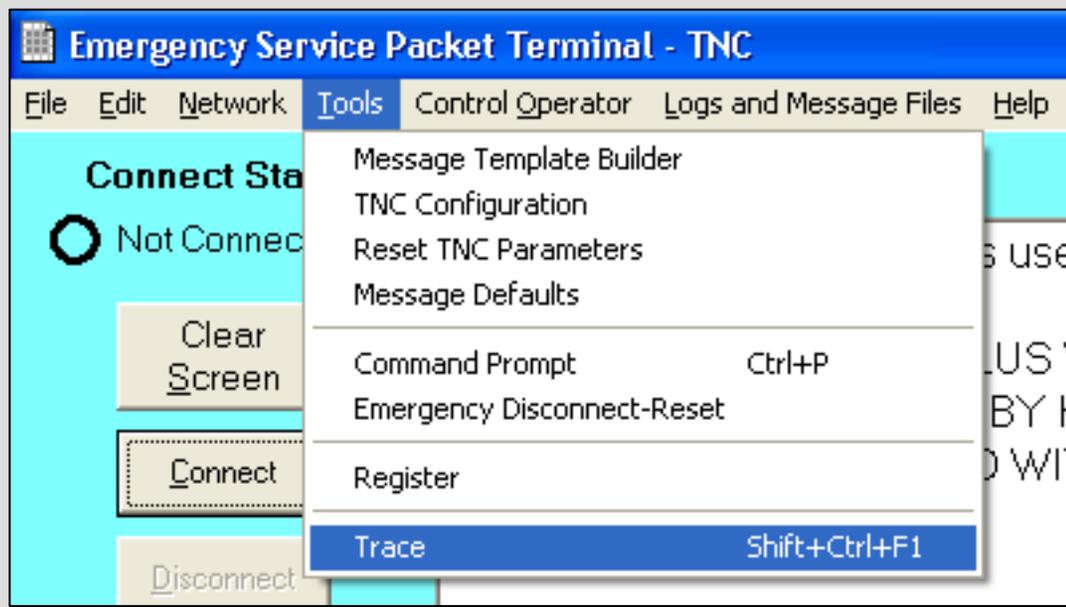
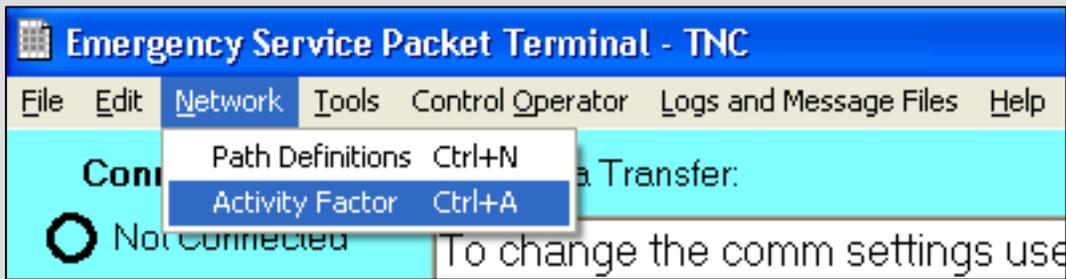
- One
- Two

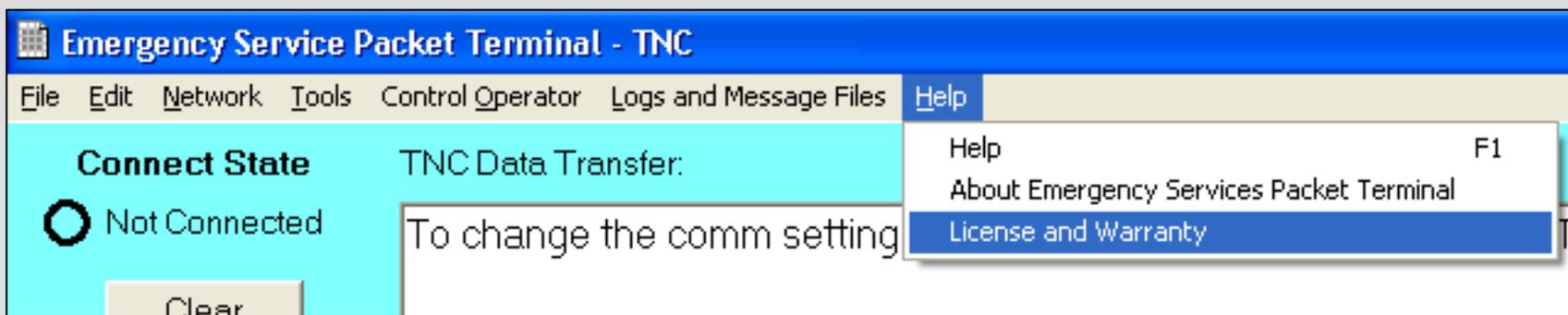
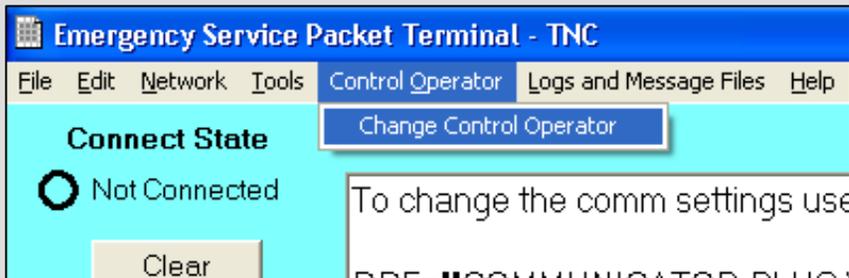
Duplex:

- Half
- Full

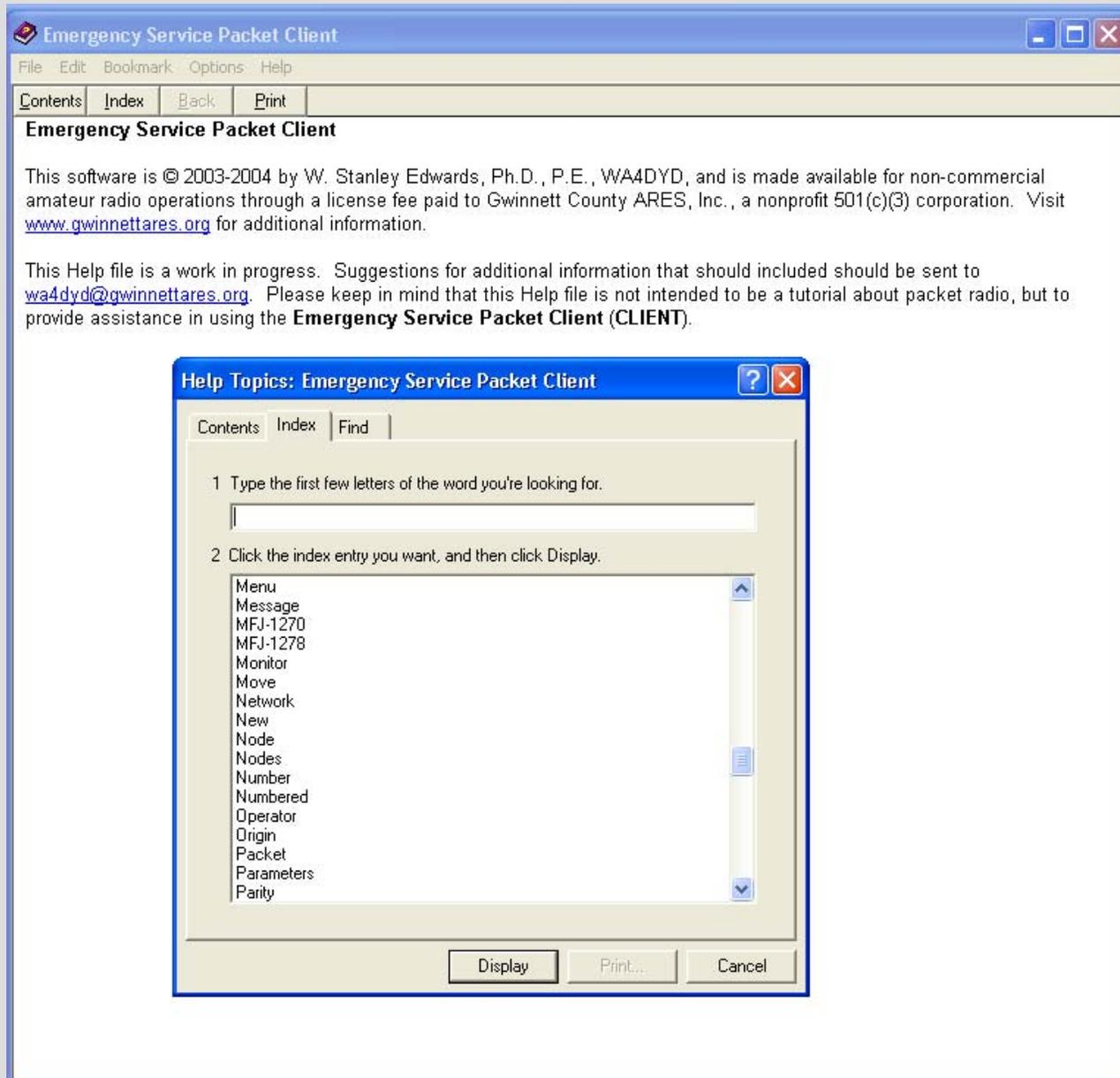
Configuration screen to set up TNC – this only needs to be set up once, and it is saved for future uses of the program.

A look at the menu options...





And of course, a thorough help file to answer any questions or provide explanations...



Potential Uses

Where/whenever efficient, formal traffic handling is needed.

- ARES traffic between EOCs.
 - eg. State EOC in Santa Fe and Valencia County EOC in Belen.
- ARES traffic between shelters.
- ARES traffic between other fielded stations.
 - Red Cross, N5VA, fire stations, home stations, etc.
- All of the above.

But what about WinLink?

- Apples and oranges – a good solution for a whole different problem.
 - WinLink is primarily meant to employ Ham Radio as a bridge to a broken internet (specifically email) via VHF packet, HF digital modes, email servers, the Internet, or any combination thereof.
 - WinLink has been developed to augment communications belonging to our served agencies – they don't use the same traffic formats we do.
 - One fear is that in a true, large-scale disaster WinLink might choke due to volume vs. bandwidth, causing other WinLink users to be affected.
- ARES Packet Client is a solution to an **ARES** problem – improving our message handling efficiency.
 - Packet Client is meant specifically for improving the traffic handling capabilities of an ARES group as a traffic-handling utility.
 - Extremely simple to use – connect to any TNC, turn on the radio, start up the program, find someone who can type and start sending/receiving traffic.

How do we get started?

- Try it for yourself to experience its real value.
- Decide to embrace it as an ARES group.
 - Consider putting verbiage in your local procedures so it becomes a standard packet utility within your organization.
- Locate Hams within your ARES group who own packet gear.
 - Get them involved as part of the solution! They can lend gear to field during events, or join your group.
- Train, train, train (and train).
 - Hold a quick, formal instruction session to teach team how to use it.
 - Integrate it in your nets by allowing Hams to check-in via packet.
 - Use it during SETs
 - Use it for the real thing...
- Sell it to nearby ARES groups.
 - Efficiency between cooperating ARES groups can only get better if the same tools are used in getting the same job done!

For more information...

- January 2005 issue of QST, pages 82-84.
- February 2005 issue of QST, page 87 (continuation of above)
- Gwinnett County ARES (www.gwinnettares.org) – This group utilizes this program for all packet operations – it is specified as such in their EOP. Stan Edwards WA4DYD, Gwinnett ARES EC (equivalent to a DEC in New Mexico), is the creator of ARES Packet Client.

